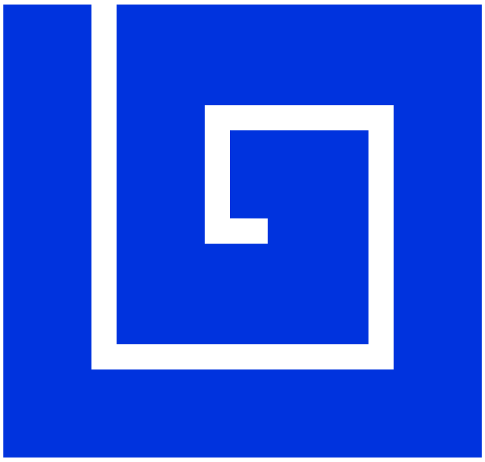
2022

PSYCHIATRIA FENNICA



53rd Annual Volume

PSYCHIATRIA FENNICA

Foundation for Psychiatric Research
Publication Series

ISSN: 2489-6152

PSYCHIATRIA FENNICA

2022

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TABLE OF CONTENTS

2022

Sincere thanks to referee board and researchers participating in the peer review process.

We would like to thank our high quality referee board:

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In addition, we have had an excellent collection of researchers in the peer review process, whom we would like to thank. The volumes 2021 and 2022 would have not been possible to publish without their work. To show our gratitude and appreciation, we list here all those referees that have given permission.

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EDITORIAL

TUULA KIESEPPÄ

We are finally overcoming the Covid-19 pandemic, and the time of restoration has begun. Both national and international research has shown that the effects of the pandemic targeted especially vulnerable groups and overall mental health. In Finland, we have the ongoing Mental Health Strategy 2020-2030 and national health and social services reform. The former proposes a comprehensive approach to face the increased need for psychiatric services and insufficient resources with methods that provide timely and high-quality services for mental health. The latter aims, among other things, to increase provision of efficient and low-threshold interventions in primary care, and to promote collaboration between secondary and primary care and social services. The 2022 volume of Psychiatria Fennica focuses on the research and prospective articles that describe how the developmental changes are proceeding, and what challenges we are facing now and in the future. Invited Editorials by Professors Sami Pirkola and Jouko Lönnqvist offer an excellent opening and forward-looking perspectives for the issue.

Both Pirkola and Lönnqvist point out that there is a need to develop psychiatric care, acknowledging person-centred principles while taking care that the methods are evidence based. We especially require evidence-based psychosocial interventions suitable for primary care. Already before but especially during the pandemic the expressed need of psychiatric care among children and adolescents increased enormously. We have to develop ways to offer support and help to primary care and services close to children's growth environments, such as schools. Interpersonal counselling, adolescent version (IPC-A) has been chosen as the first intervention to test as a nationwide intervention in primary care to handle depressive symptoms. In this volume, the articles of Linnaranta et al. and Ranta et al. report the ongoing implementation and its challenges so far. Linnaranta et al. also discuss the difficulties related to the concept of evidence-based treatment itself. Social anxiety disorder (SAD) is a common psychiatric disorder among youths, and easily accessible treatments are most welcome. Lampela et al. report the first results of the use and feasibility of developmentally oriented cognitive therapy for adolescents with SAD in a case series. The review of core elements in a multi-tiered system of support for conduct problems in schools and early childhood education (Kouvonen et al.) reveals similar kinds of crucial factors concerning implementation that are detected in the studies above. An implementation survey by Lindholm et al. further evaluates the demands that have to be considered in transferring psychotherapeutic interventions into routine patient care. However, the availability of a variety of evidence-based psychosocial treatments or even psychotherapies is not enough to offer qualified, fair and person-centred care. For that we need knowledge about the whole ensemble and methods to navigate inside it. In this journal Saarni et al. describe the results of a pilot study of the Finnish therapy navigator, which is an attempt to support stepped psychiatric care at primary level.

We have aimed to reinforce the exposure of Finnish child and adolescent psychiatric research. Above I have referred to articles that focus on psychosocial interventions among children and adolescents, but I am pleased to introduce several further articles of the research on the mental health of children and adolescents. Gender discussions have been widely highlighted by various sectors of society lately, and they also add new research questions for psychiatry. This volume includes two topical studies, one concerning adolescents' body image stability over past years (Huusko et al.), and the other focusing on transgender identity and possible externalization problems in adolescence (Tenhola et al.). Our previous volume dealt with off-label use of antipsychotics among adults (Pentinlehto et al.), and now we have a study including related results among adolescents. Lecklin et al. report relatively common off-label use of antipsychotics among adolescents, and furthermore that antipsychotic drugs were prescribed more often to girls than to boys. Tampere University Hospital has been paying special attention to safe psychotropic medication practices in children, and they have established the Medication Unit in 2021. Kakko et al. have studied the quality of the monitoring in the unit, whose results give promising and valuable information for actions to improve patient safety.

The collaboration of psychiatric healthcare and social welfare sector is of utmost importance. As in other European countries, we have had an extremely sharp drop in the number of psychiatric hospital beds. At the same time the use of different kinds of residential care have increased. However, we know quite little about the effects of this change, and what kinds of collaboration between psychiatric and social expertise would be fruitful. Both the articles of Jahangiri et al. and Tolonen et al. shed new light on these important issues. Substance use disorders have been somewhere in limbo between the social welfare sector and healthcare. New proposed legislation describes them more clearly as health disorders, which should be treated primarily within the healthcare system, but more actions are needed. The review of Levola underlines the issue that although there are evidence-based treatments for substance use disorders they still are not in use as needed.

During the process of Finnish national health and social services reform, the position of psychiatry in that field has not been clear. Although psychiatry has tight connections with several society sectors including the social welfare sector, I want to highlight its status as a part of medicine. A specific practical example of that is consultation-liaison psychiatry. In the important perspective of Pesonen et al., the authors emphasize that continuous cooperation between psychiatry and medical services should be guaranteed in the current reform.

The current political situation in the world is frightening, and there is a terrifying void between political views. The tradition of lively and multidimensional discussion is under threat. Unfortunately, there has been juxtaposition inside the psychiatric field, too. To encourage open and analytical discussion between different paradigms inside psychiatry we publish a peer-reviewed protocol article on the study of the open dialogue approach to be applied in the Finnish healthcare system. We hope that this promotes open-minded but analytical and neutral attitudes to gain and add reliable information about various and promising interventions that also include a person and recovery oriented scope in the research.

Tuula Kieseppä
Editor-in-Chief, Psychiatria Fennica

INVITED EDITORIAL

SAMI PIRKOLA

AT THE CROSSROADS – DO WE REALLY WANT TO SERVE MENTAL HEALTH?

Finnish mental health services face an historic transitional phase when the current social and healthcare reform finally takes place. As the organization and funding of public health and social care services are practically being recentralized, there are a variety of options: promises and pitfalls for mental health services and their clients. In addition to the social and healthcare reform per se, other drivers for emerging changes are the new National Mental Health Strategy 2020-2030 (1), several governmental and legislative changes, including a centralizing regulation in 2018 (2), and the recommendations for psychosocial treatment by the Council for Choices in Health Care in Finland in 2018 (3). In addition, the criteria for entering elective treatment were updated in 2019 (4), presenting a new model for collaboration between primary care and psychiatric services.

These legislative and administrative measures include the outlines for organizing psychiatric and mental healthcare for the years to come. The need for reforms is inevitable, due to economic reasons and also to increasing demands from the public, regarding both emergent and elective mental health services for the people. In conclusion, there are both needs and demands, and regulatory drivers for better access to mental health services. In addition, we are facing signs and signals of increased occupational disability and concerns of societal disparity and inequality. These themes were to a notable extent discussed in the process of launching the new mental health strategy in Finland (1).

The well-established stepped care model, presented by Thornicroft and Tansella (5), has suggested optimal mental health service settings for societies with different levels of resources. Those with a low level of resources should rely on primary care services with support from the available mental health psychiatric experts and professionals. In the case of mid-level resources, a separate secondary level of psychiatric services is a recommended option. The highest resourced societies benefit from a system of primary, secondary and tertiary level services, where the tertiary level refers to centralized, highly specialized services, like units for eating disorders or neuropsychiatric problems.

In Finland this stepped care model has involved the primary care services in municipal health and social care, and the secondary care often organized by hospital districts, run by joint municipal boards. Furthermore, the tertiary level services are often organized by university hospital districts. The organizational settings and management of these steps has had notable regional variation, but in general the model has included complex economic incentives and regulatory steering that has often acted against optimal provision of services. Due to services, or their levels, being provided in separate organizations, there are barriers and thresholds in access to care. Referrals, delays and waiting lists are common in practice, and they do not serve for better, individualized psychiatric care. It seems that the promises of optimal effectiveness of the stepped care model have been weakened for reasons not necessarily related to the model itself. In the first place, the model with separate steps and organizations may have been useful for the purposes of control, but the role of services and expectations of the public have changed, decreasing the meaningfulness of the original roles and gatekeeping. Furthermore, the costs of the current organization and management of the mental health services are increasing to unbearable levels, if we stick to the current, multi-organizational model (6).

It can be argued that, with the increasing mental health awareness of the people, demands for a widening spectrum of mental health support for problems that are not medical disorders cannot be given to psychiatry. However, at the time of this current reform we may try to sort out this increased burden of challenges by a better integration of our expertise, and by a truly patient- or client-centred approach. By simultaneously performing early psychosocial support, education and management, we may also be able to detect and intervene in processes that would require more intensive psychiatric management, and gain a cost-effective benefit because of this earlier intervention.

To tackle the problems caused by the current system with several steering mechanisms (legislation, multiple funding sources, steering by information), a new patient- or client-centred approach has been proposed by the criteria for entering elective treatment and the mental health strategy (1,4). It arises from the Collaborative Care Model (7), created for treating patients with multiple somatic and mental health problems in primary care. This new way of organizing a wide variety of services for a patient should be convergent with the primary level, one-door ideology included in the health and social care reform now taking place.

The central idea is that a patient is not sent for expert evaluations or consultations elsewhere, but these services are organized for them on site, by a primary care level case manager. In terms of mental health services, consultations with a psychiatric nurse or psychologist are available at the primary care centres, in addition to IT-based services, like video consultations and guided diagnostic or therapeutic algorithm interventions.

This collaborative setting also provides mutual learning, shared design practices, and so-called working hand in hand. In terms of organization, the model involves integration of services, in this case primary care and psychiatric expertise. This kind of integrated model for collaboration has been implemented and evaluated in Kerava health centre district on the outskirts of the Helsinki metropolitan area. Initial reports of its benefits have been most promising.

This is currently the context in which we should strongly take care and prioritize the increasing mental health needs and demands regarding the evolving health and social care service system. A question we should ask is: Will the mental health services and needs be prioritized (8) due to their high importance, or are they still considered as a resource to be ignored when other needs emerge?

Many of the questions or ideas presented here can be answered during the ongoing reform, and good support for positive actions have been collected for the National Mental Health Strategy. It is now a question of clear vision and goodwill to turn this towards a better future.

Author

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INVITED EDITORIAL

JOUKO LÖNNQVIST

CHALLENGES FOR PSYCHIATRY IN FINLAND – A PERSONAL VIEW

ABSTRACT

From the beginning of the year 2023, twenty-one wellbeing service counties will be responsible for organizing mental health services in Finland. This means a major societal and social change. The change will give new opportunities to foster the development of the whole service system. However, a structural change may also lead to disturbances in processes of the system. There is real need for a whole system approach to skilfully guide the development of mental health services at patient-professional level, service level, local area level, region level and country level. Service design and development should be rooted in evidence. The quality of scientific evidence on current models of psychiatric care is at best moderate. We have a lack of robust evidence base for many system interventions. In addition, the main approach in the planning and evaluation of service delivery is more provider than user oriented. Person-centred care involves both the acknowledgement of the individual's right to self-direction with respect to the goals of care, and the protection of this right in ongoing service delivery. This approach promotes the recovery of a meaningful life in the community of the person's choice rather than solely minimizing symptoms and impairment. It underlines each individual's own unique life goals and aspirations. Treatment emphasizes the person's own capacities, strengths and interests, and also the use of community settings and support. Person-centred care may offer several benefits over the usual care. Collaborative care is an effective approach to improving outcomes for common mental disorders, mainly depressive and anxiety disorders in primary care. It aims to promote mutual support between primary care and mental health providers and the delivery of more coordinated, integrated, and evidence-based treatments and prevention. Additional gain of psychotherapy and pharmacotherapy in the treatment of mental disorders in adults is only from small to moderate according to the most recent and largest meta-analysis. Continual critical evaluation of current psychiatric practice and mental health services is needed. New evidence-based and effective modes of action from promotion to prevention and treatment are most welcome. Improving evidence-based and effective prevention and treatment strategies for mental disorders can be regarded as a major challenge for 21st century psychiatry.

KEY WORDS: CHALLENGES OF PSYCHIATRY, EVIDENCE-BASED PSYCHIATRY, PERSON-CENTRED CARE, EFFECTIVE PREVENTION

CONSTITUTIONAL SERVICE PROMISE

Finland is a developed western democracy having implicit constitutional service promise to every citizen: psychiatric services are available if and when needed. The constitution of Finland (1999) guarantees the inviolability of human dignity and the freedom and rights of the individual and it promotes justice in society. Basic rights and liberties include also the right to social security (chapter 2, section 19). The public authorities shall guarantee for everyone, as provided in more detail by an Act, adequate social, health and medical services and promote the health of the population. Moreover, the public authorities shall support families and others responsible for providing for children so that they have the ability to ensure the wellbeing and personal development of the children.

NEW BEGINNING 2023

From the beginning of the year 2023, twenty-one wellbeing service counties will be responsible for organizing mental health services as a part of their statutory obligation to respond in an appropriate manner to the responsibility of publicly-funded healthcare and social welfare. They can produce mental health services alone as a single county or produce them by collaborating more or less with some other counties.

This is and will be a major societal and social change. The main challenge is to move flexibly from municipality-based and decentralized services to a more centralized system guided by Ministry of Social and Health, and controlled economically by Ministry of Finance.

DEVELOPMENT OF SERVICE STRUCTURE

The current service package offered by society is the result of multiphasic development over the course of the last two centuries. The change will give new opportunities to foster the development of the service system. However, a structural change may also lead to disturbances in treatment processes, cause additional costs and also finally affect negatively on the wellbeing of people.

Structures, processes and outcomes form together a complex interaction system. Every change of one subsystem is reflected in the whole service system. The net effects of the change have to be assessed not only at the national, regional, organizational or unit level, but also at the level of every single patient. The wanted development of the service system should not be a loose or separated target as such. The final target should be the successful treatment and personal recovery of all present and future patients.

ACCESS, STRUCTURE, PROCESS AND OUTCOME

A starting point of planning and delivering psychiatric treatment can be seen as an encounter, meeting and confrontation of two processes, where a patient´s developmental needs and wishes meet the structure and processes of a psychiatric service system. A well-functioning service structure offers easy access to treatment, basic resources and opportunities for professionally valid treatment processes. At the patient level, every single patient needs specific and personal treatment goals and a joint plan with the service system to attain the common goals effectively and to achieve personal recovery.

Both the patients and the treating organizations have their own needs, resources, goal settings and way of working, forcing both parties to find common goals and commitment for alliance and successful treatment outcome. Traditionally patients have been seen as targets and passive participants of treatment. Today, hopefully even more so in the future, patients should be active collaborators and agents of their own recovery process. Meaningful personal goals and high degree of responsibility in a patient´s own recovery process form a major additional support and investment for effective treatment and beneficial outcome.

The structures and processes of mental healthcare can´t follow the model of an industrial health factory producing effectively massive amounts of basic health products. Mental health experts are rather producing customised services collaborating in multiprofessional teams with patients and paying attention to patients´ specific needs. Mental health services may strictly follow their general guidelines, basic institutional procedures and policies. However, they also have to be able to adjust their actions to the specific needs of patients. Good treatment should always include both evidence-based and personalized clinical actions.

CHANGES AND CHALLENGES OF PSYCHIATRIC SERVICE SYSTEM

The current reform of mental healthcare is characterized by shift from hospital to community care. We are searching for a better integrated balance of care across hospital and community, and across health and social care. Nationally we have been trying to build a common and better integrated structure for the whole health and social care. Functionally the aim has been to have a better collaboration between various actors also in the field of mental health (collaborative care). The specific aim is to find good collaboration between primary care and specialized care (secondary and tertiary services).

The development in the field of mental health has basically been a part of a larger political and societal change. This very centralized change has been guided from above by leading politicians. Mental health professionals have participated in this reform from bottom up, more or less, or stayed totally aside. Common experience among professionals is that they are treated more as objects than agents in this system change. This increases uncertainty and the risk of turbulence among mental health personnel. People are moving more than ever and are seeking a better working environment for themselves.

Lack of mental health personnel, especially highly educated and experienced key experts, causes heavy competition for professionals, and is leading to centralization of mental health services and role changes among mental health workers.

Within and between psychiatric specialities, a turbulent situation causes competition over financial and human resources and may worsen boundary conflicts between service sectors and units. Instead of improvement of collaboration, current structural changes in the field of mental health may lead to disintegrative development during the transition period from old structure toward a better future.

A WHOLE SYSTEM APPROACH

In this situation many experts emphasize need for a whole system approach to thoroughly understand and skilfully guide the development of mental health services. A complex mental health system is delivering services at four different levels (Rosen et al. 2020, 2022): patient-professional level, service level, local area level, region and country level.

In developing mental health services, interventions on only one subsystem (e.g., improving access to acute treatment, increasing the number of hospital beds or targeted investments without evidence-based knowledge on effectiveness) do not finally guarantee wanted change or positive effects in a complex system. All parts of the system are interacting with each other and thus also influencing delivery and balance of services. Whole system evaluation is needed in order to correctly assess the final effects of any major intervention on service system.

A poorly planned and unwisely executed total integration of two or more professionally different service sectors (like mental healthcare and social care) does not usually improve service processes. On the contrary, forcing integration at all system levels may lead to unclear job descriptions, role and boundary diffusion between professionals and functions causing losses in productivity and increasing costs. Wisely executed implementation seeks gradually for appropriate and acceptable integration, taking into consideration the degree of commitment of the personnel.

Chronic imbalance inside the service system is influencing at all stages of treatment, from prevention and early intervention to acute and maintenance treatment, as dysfunctions; also affecting the wellbeing of every single patient. What would be needed to stabilize the service system in Finland is a shared strategic view from top to down and from bottom up, common goals and effective leadership at all boundaries of system. Mental health services should be evaluated at all aforementioned four system levels in order to appropriately understand and manage the functioning of the whole system.

EVIDENCE-BASED SERVICE

Service design and development should be rooted in evidence (Johnson et al. 2022). The quality of scientific evidence on current models for psychiatric care is at best moderate. We have a lack of robust evidence base for many interventions. In addition, the main approach in the planning and evaluation of service delivery has been more provider than user oriented. We still have more evidence on the efficacy of specific psychiatric treatment methods based on controlled trials than system interventions. Evidence-based knowledge on the real-life effectiveness of service models and specific psychiatric treatment methods is still very narrow.

Comparisons across services and regions are difficult for various reasons, not only for diverse therapeutic interventions or care models. We have divergent professional views, various modes of assessments, wide spectrum of patients, differing populations, varying modes of collaboration between community sectors and finally our own distinctive legal system. Reports from mental health services and special treatments are usually strongly context-dependent. They may be locally or regionally valid, but perhaps not functioning at all in another context. This reality underlines the importance of critical evaluation and open dialogue in the development of mental health services.

All findings from abroad and best experiences from other regions of our own country are always welcome (McGorry et al. 2022). At the same time, we have to learn to appreciate and utilize our own opportunities and accept the limits of our possibilities in Finland. A flexible and accessible care system is able to offer a variety of treatment options and meet patients´ needs and preferences using appropriate and widely available resources

RIGHT TO SELF-DIRECTION AND PERSON-CENTRED CARE

Treatment is always a very personal experience, not just an organizational or system event. Person-centred care involves both the acknowledgement of the individual's right to self-direction with respect to the goals of care, and the protection of this right in ongoing service delivery. It is offered as a totally new approach, which would replace the traditional mental health practice (WHO 2021).

The *WHO Guidance on community mental health services: Promoting person-centred and rights-based approaches* is a set of publications that provides information and support to all stakeholders who wish to develop or transform their mental health system and services to align with international human rights standards, including the UN Convention on the Rights of Persons with Disabilities.

Person-centred approach promotes the recovery of a meaningful life in the community of the person's choice. It is not aiming solely to minimize symptoms and impairment. It underlines each individual's own unique life goals and aspirations. In addition, it aims to define the person's own role and responsibility, the roles of the clinician and other staff, and also other persons' roles in achieving these goals. Treatment emphasizes the person's own capacities, strengths and interests and also the use of community settings and support. Person-centred care may offer several benefits over the usual care (Davidson & Tondora 2022).

Patients and families should work collaboratively with health providers establishing together a common care plan. Planning encourages patients to define their own meaningful goals. From positive planning experience they can also learn long-term self-management and relapse prevention. When family members desire an active role, they should be given the opportunity to express their preferences on treatment options and they should be advised on how to contribute to support the treatment.

Person–centred approach offers a special opportunity for Finland to raise the mental capital of the nation by appreciating the role of patients more as active partners than merely as objects of psychiatric treatment. It would also significantly add to the total capacity of Finnish psychiatry.

At the population level we have to carefully and continually follow and promote the development of positive mental health as the basic capital of the nation. At the person level, aiming towards good mental health should be the goal and the basic right of every individual.

SUPPORTING PRIMARY CARE

Collaborative care has been suggested as a useful approach to support mental health work in primary care, also in Finland. Collaborative care model (CoCM) has been regarded as an effective approach to improving outcomes for common mental disorders, mainly depressive and anxiety disorders. It aims to promote mutual support between primary care and mental health providers and the delivery of more coordinated, integrated and evidence-based treatments.

CoCM is a team-based approach (Bauer et al. 2019). Joint planning and collaborative discussions among team members promote the integration of knowledge and expertise of each profession. At the system level, CoCM can help to strengthen the coordination of services. At the patient level, CoCM supports the development of more comprehensive care plans and continuity of care.

Personalized care planning and shared decision making are evidence-based strategies which can be used for improving the involvement of patients and families in collaborative care. Both strategies enhance the effectiveness of collaborative care (Menear et al. 2022).

In some health systems collaborative care has become bureaucratic and disconnected from patients' priorities. In addition, it is not self-evident that organization model as such will promote collaboration and effective leadership. CoCM is just a tool, which can be learned to execute skilfully and flexibly.

EVALUATION OF MENTAL HEALTH TREATMENT

At a patient-clinician level current trends emphasize the importance of specific goals in psychiatric treatment instead of more general aims and visions. When the goals are specific, they are measurable and more easily achievable. When the goals are in addition reasonable and time-bound, then the smart goals do make collaboration and leadership in psychiatric teams much easier. Goal attainment should be measured and evaluated. Goal setting, action, effects and their evaluation form a continual process helping to optimize the use and redirection of available treatment resources.

Evaluation of the service structure focuses on inputs to a care system intended for promoting mental health of the patients: such as facilities, equipment, immaterial resources, budgets, information systems, quantity and quality of the personnel.

Process evaluation provides quantitative and qualitative information about how the outcome was achieved and what actually happened during the treatment. Process measures show how inputs are used and implemented. They do not directly inform about effectiveness of treatment. However, we have a tendency to interpret process factors as planned and wanted effects, especially if specific goals of treatment are not clearly defined. We often explain intermediate process factors as wanted final effects of treatment. In fact, process factors can often be intermediate factors or interim results leading to primary results. During the treatment process we may even forget the original goals of the treatment plan and emphasize secondary effects of treatment. “Travelling” may often be more important than the original target of the trip. As active participants of treatment we are insiders, participating evaluators, not independent or objective external evaluators.

Outcome evaluation aims to determine how well the treatment achieved its objectives by answering critically to at least the next five basic questions (Lönnqvist 1984):

1. what were the desired and accepted primary goals of the treatment (appropriateness),
2. how well the actual treatment did really cover the total need of the patient (adequacy),
3. to what degree were the treatment primary goals attained (effectiveness),
4. how much resources were needed for effectiveness (efficiency), and
5. what other effects as those intended, both positive and negative impacts, did the treatment have?

Use of evaluation should be a normal part of daily treatment of patients, team work and collaboration, leadership function and continual learning process. Participatory evaluation in psychiatry means that all team members are both evaluators and able themselves to receive constructive criticism in an atmosphere of openness. The psychiatrist as a team leader is responsible for patients´ treatment and clinical evaluation. Their task is also to make possible continual learning, development and innovation for every team member. The ultimate focus of evaluation is for the best for patients and the whole psychiatric service system.

EFFECTIVENESS OF PSYCHIATRIC TREATMENTS

Improving treatment strategies for mental disorders can be regarded as a central challenge for 21st century psychiatry. A systematic reassessment of recent evidence across multiple meta-analyses on the main treatments of eleven key mental disorders provided a limited additional gain for both psychotherapies and pharmacotherapies over placebo or treatment as usual (Leichsenring et al. 2022).

This remarkable study included evidence from 102 meta-analyses with 3,782 randomized controlled studies and 650,514 patients, covering depressive disorders, anxiety disorders, post-traumatic stress disorder, obsessive-compulsive disorder, somatoform disorders, eating disorders, attention-deficit/hyperactivity disorder, substance use disorders, insomnia, schizophrenia spectrum disorders and bipolar disorder.

There was an additional gain for psychotherapy and pharmacotherapy in the treatment of mental disorders in adults. However, an average SMD (standardized mean difference) was 0.35, which means effect sizes from small to moderate. A ceiling was reached with response rates about 50% or below. Indeed, only some patients do benefit from the available treatments in the controlled trials, some do not!

Nevertheless, it is useful to remind us in the field of psychiatry that, although there are some medicines for general medical conditions with higher effect sizes, psychotropic agents or psychotherapies are not generally less efficacious than other medications in healthcare.

For this situation a paradigm shift in treatment research has recently been suggested (Leichsenring et al. 2019). It would mean improving methodological quality and replicability, improving available treatments, personalized management, more specific targets and outcomes, considering the stage of disorder and response to previous treatments, switching or augmentation strategies, and finally developing totally new and more effective treatments. In addition, we need more focus on evidence-based prevention: what is prevented, need not to be treated!

EVIDENCE-BASED PREVENTION

Psychiatry has been traditionally interested in *tertiary prevention*, which helps patients with mental disorders stay well and aims to reduce people's symptoms, empower them to manage their own wellbeing and reduce the risk of relapse (*indicated prevention*).

Relapse prevention and maintenance treatment. A good clinical example of tertiary prevention is maintenance treatment with antipsychotics in schizophrenia. The evidence suggests that maintenance on antipsychotic drugs does not only prevent relapses and rehospitalizations. Patients also benefit in terms of quality of life, functioning and sustained remission. These positive effects must of course be weighed against the adverse effects of antipsychotics (Ceraso et al. 2022). Continuing antipsychotic treatment at standard doses or switching to a different antipsychotic are similarly effective prevention strategies, whereas reducing antipsychotic doses below standard doses means higher risk of relapse and should be limited to selected cases (Ostuzzi et al. 2022). Although decrease of dose is accompanied on average by a higher relapse risk, individual patients will often need higher or lower dose than a mean standard dose (Leucht et al. 2021).

Clinical guidelines recommend antidepressants as a preventive maintenance strategy in major depression after remission for patients at high risk of relapse. When a patient wishes to taper, a dilemma regarding tapering or continuing the use of antidepressants is real because of increased risk of relapse when tapering. Psychological interventions can be protective when used in combination with antidepressant medication. A recent meta-analysis found no evidence of a differential treatment effect between receiving a sequential psychological intervention while tapering antidepressant medication and continued use of antidepressant monotherapy (Breedvelt et al. 2021). This suggests that adding a psychological intervention to tapering does not increase the risk of relapse, and that it might even be an alternative for continued antidepressant medication use. Shared decision making and patient preference are crucial factors, giving more choice in final clinical decision making.

Secondary prevention focuses on supporting people who are more likely to develop mental health problems. Early detection and specialized early interventions have opened the door to the prevention or delay of the first episode of disorder among clinical high risk (CHR) persons.

Early intervention. Detection, prognosis and indicated interventions in individuals at clinical high risk for psychosis (CHR-P) are demanding key components of preventive psychiatry. A recent meta-analytic review confirmed advancements in the detection and prognosis of CHR-P individuals while suggesting that effective indicated interventions need to be identified (Fusar-Poli et al. 2020). Evidence suggests a need for specialized services to detect CHR-P individuals in primary and secondary care settings, to formulate a prognosis with validated psychometric instruments, and to offer needs-based and psychological interventions. However, no robust evidence yet exists to favour any indicated intervention over another for preventing psychosis or ameliorating any other outcome.

Children of psychiatric patients. Children with parents suffering from a psychiatric disorder are at higher risk for developing a mental disorder themselves. The efficacy of psychosocial interventions to prevent negative mental health outcomes in the offspring is clinically significant. Preventive interventions targeting the offspring show not only a significant reduction (almost 50%) of the incidence of mental disorders, but also a diminution of internalizing symptoms (Lannes et al. 2021).

Primary prevention focuses on stopping people from developing mental health problems and promoting good mental health for everyone in a community. Strategy to prevent poor mental health outcomes is usually targeting either the general population (*universal prevention*) or asymptomatic individuals with high risk of developing a mental disorder (*selective prevention*).

Universal and selective preventive interventions for young individuals are feasible and can improve poor mental health outcomes. Recent meta-analytic evidence (Salazar de Pablo et al. 2020) shows that universal and selective interventions among young people may improve (in descending order) interpersonal violence, general psychological distress, alcohol use, anxiety features, affective symptoms, other emotional and behavioural problems, consequences of alcohol use, post-traumatic stress disorder features, conduct problems, tobacco use, externalizing behaviours, attention-deficit/hyperactivity disorder features and cannabis use, but not eating-related problems, impaired functioning, internalizing behaviour or sleep-related problems.

A recent meta-analysis (Werner-Seidler et al. 2021) shows that school-delivered psychological prevention programmes have small effects immediately after intervention in reducing symptoms of depression (g = .21) and anxiety (g = 0.18). Targeted programmes for young people with risk factors or symptoms were associated with significantly greater effect sizes relative to universal programmes for depression. There was also some evidence that external providers conferred some benefit over school staff-delivered programmes. Knowledge about how these and other similar programmes could be sustainably and more efficiently delivered in schools to achieve urgently needed population-level preventive effects would be very important for the wellbeing of the whole nation.

Depression. Primary preventive interventions have the potential to modify the course of depression and they might be effective. For example, education of depressive symptoms during prenatal and perinatal period, psychosocial interventions for young persons with risk factors, and a combination of psychological and educational interventions in primary care have moderate credibility. In addition, clinicians may offer selective serotonin reuptake inhibitors (SSRIs) to individuals with a stroke to prevent depressive disorders with high credibility (Salazar de Pablo et al. 2021).

SUICIDE PREVENTION AS A CHALLENGE FOR PSYCHIATRY

Suicide mortality in Finland has had a declining trend since the year 1990. Absolute number suicides and suicide rate has decreased during the last thirty years more than fifty per cent. A realistic goal for the near future would be to reach the annual rate of one suicide per ten thousand persons a year. The challenge belongs to the whole society. However, psychiatry has special knowledge and professional responsibility to help the nation to meet this challenge.

The target of suicide prevention can be the whole population (*universal prevention*), those at the highest risk for suicide (*selected prevention*) or persons already identified as suicidal (*indicated prevention*). At the population level, all these approaches can be combined to a more comprehensive prevention strategy. At the patient-clinician level we ought to assess the suicidality of every patient and use various prevention approaches in an appropriate way following good clinical practice and the principles of personalized psychiatry. Some specific interventions have been shown to be effective in randomized controlled trials (Riblet et al. 2017). The most recent meta-analysis showed that suicide prevention interventions are effective, and they should be widely implemented (Hofstra et al. 2022). However, we still need much more knowledge about how multilevel interventions are functioning in real life of complex societies.

Social support is an unspecific method to support individuals by utilizing their natural social networks and relationships, especially families and community services. Social support has also been used as part of national suicide prevention strategies. Finland offers, as an integrated and well-functioning Nordic welfare country, a basic buffer against suicide to every citizen. This has been realized in major economic and social changes during the last thirty years. However, direct evidence of the effectiveness of specific social support interventions in suicide prevention are still missing. Recent meta-analysis showed that social support interventions, when targeted for those who were at elevated suicide risk, could significantly (RR = 0.48) reduce the risk of suicide (Hou et al. 2022).

Psychosocial interventions are often recommended in clinical guidelines for suicide prevention. However, the effectiveness is not definitively established. Despite longstanding efforts to develop specific treatments to reduce self-injurious thoughts and behaviours, the efficacy has not been remarkable. All interventions seem to produce only small effects, and no intervention appears to be significantly and consistently more efficient than others (Fox et al. 2020). Cognitive therapy has been suggested to be effective in preventing suicide behaviour in adults, and dialectical behaviour therapy (DBT) to some degree in adolescents. In addition, DBT may reduce suicide risk in adults with borderline personality disorder. Two recent meta-analyses suggest that there is only uncertain evidence regarding the effectiveness of psychosocial interventions in the prevention of suicidal behaviour (Witt et al. 2021; Yiu et al. 2021).

Effective drug treatment is a core element in clinical guidelines for the treatment of the most major mental disorders, especially for those disorders having high risk for suicide. Effective drug treatment supports the achievement of meaningful treatment goals and personal recovery, and could indirectly support suicide prevention. Lithium in bipolar disorder and clozapine in psychoses have an evidence-based and clinically significant protective effect (RR about 0.5) against suicidality and even suicide, at least in certain clinical contexts (Wilkinson et al. 2022). Whether these two drugs really have a specific and direct antisuicidal effect remains still unanswered.

Attempted suicide is the best clinical predictor for suicide, which offers a special opportunity for indicated prevention. This fact has also been utilized in Finnish national strategy by developing special programmes for the assessment and treatment of suicide attempts. Suicide rate varies widely after attempted suicides depending on psychiatric diagnosis, method used for attempt, and age and gender. Recent international meta-analysis calculated that the suicide rate after a nonfatal suicide attempt was 2.8% at 1 year, 5.6% at 5 years and 7.4% at 10 years (Demesmaeker et al. 2022).

Safety planning-type interventions, supportive follow-up phone calls and other messages have been increasingly used in clinical practice for patients at risk of suicide, also in Finland. The results of the first meta-analysis on effectiveness of safety planning supports its effectiveness (NNT = 16) and use in suicide prevention (Nuij et al. 2021).

Lethality of suicide methods largely determines the outcome of suicidal acts. According to a meta-analysis (Cai et al. 2022) the case fatality rate (%) of different methods varies greatly. The most lethal methods in descending order were firearms, hanging and drowning (90–80%), gas poisoning and jumping (about 50%), whereas the lethality of poisoning (8%) and cutting (4%) was significantly lower. Restricting availability of most lethal methods offers an effective method to decrease suicide mortality at the population level (firearms and poison control), but it also offers useful approaches in treating suicidal patients in psychiatric facilities.

Suicide of a parent may cause an increased suicide risk for the next generation. Recent meta-analysis of controlled population studies showed that parental suicide really is a strong risk factor (RR = 3) for suicide in offspring (Calderado et al. 2022). Suicide risk was significantly higher compared with offspring bereaved by other causes of death. This highlights the need for selected and indicated prevention among survivors, especially after suicide in psychiatric treatment.

Postvention is a process which aims to alleviate the effects of stress and aids in coping with a death by suicide. There is a lack of evaluation on the effectiveness and acceptability of suicide postvention services supporting those bereaved by suicide. Until now no evidence-based and effective postvention programmes have been presented. However, we have some positive effects from school-based postvention programmes. A recent meta-analysis suggests that postvention support may be effective if it offers access and belonging to others through peer support, group support, contact with those previously bereaved by suicide or through trained postvention support workers (Abbate et al. 2022).

IN CONCLUSION

The current structural change of the Finnish social and healthcare system may lead to transitional disturbances in the psychiatric service system. However, at the same time changes are offering new opportunities to foster improvement of the inner processes of the system. The professional challenge is to skilfully support the development of mental health services from bottom up at all levels of the service system, using critical evidence-based knowledge on effective treatments, modern international action models and relying on our own successful experiences in the field of mental health. New evidence-based and effective modes of action, from promotion of positive mental health and prevention of mental disorders to modern treatment strategies, are now most welcome in order for us to master the challenges waiting just ahead.

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A NATIONAL IMPLEMENTATION OF INTERPERSONAL COUNSELLING, ADOLESCENT VERSION (IPC-A) IN FINLAND

ABSTRACT

Depression is one of the most common psychiatric disorders among adolescents and young adults. Interpersonal counselling, adolescent version (IPC-A) is a short method to treat depression of adolescents in 3 to 8 sessions in primary healthcare. IPC-A has been selected in a participatory project for national implementation in Finland, starting 2020. By the end of 2022, the estimated need to treat 7000 depressed adolescents per year in primary care will be targeted by training about 1600 professionals in providing IPC-A. In preparation for implementation of this strategy, the Finnish Ministry of Social Affairs and Health funded a project in 2016-2017. The first step was selection of evidence-based interventions that would be suitable for national implementation in primary care. The government then funded a pilot study using IPC-A intervention in one city. The pilot had the goal of constructing a national implementation model for further testing within adolescent mental health services. As the results were encouraging, IPC-A was then chosen as the first intervention to test for nationwide implementation of short interventions in primary care. Five university clinics coordinated subsequent national training and local implementation. The Finnish Institute for Health and Welfare (THL) and Itla Children's Foundation provided implementation support for local project teams. While the training is still ongoing, the successes and limitations of the implementation process will be explored from the perspective of national coordination and support of implementation.

KEY WORDS: MENTAL HEALTH, INTERVENTION, SCHOOL, ADOLESCENT, INTERPERSONAL, IMPLEMENTATION, STRATEGY, EVIDENCE BASED

1. AN INCREASING NEED FOR TREATMENT AMONG YOUNG PEOPLE IN FINLAND

Being a period of intense biological, psychological and social changes, youth is a critical period for individual growth, as well as for learning and internalization of knowledge and skills that support and maintain mental health. Accordingly, compromised mental health at a young age can endanger transition towards adulthood. While mental disorders are common, prevalent in 20–25 per cent of young people (1), a psychiatric diagnosis increases the risk for social exclusion and low educational attainment by adulthood (2). In Finland, information on the actual need for treatment for mental health among young people is limited.

Most visits with mental health as the reported reason for the visit to healthcare take place in primary healthcare (*Table 1*). The school health and welfare services (SHWS) are free of charge in Finland. The focus of SHWS has been in promotion and prevention. Surveys have shown that professionals especially consider the number of psychologists at school to be insufficient (3). Information on waiting lists, from register and survey data from professionals, show that specialized services have been overwhelmed by an increasing number of adolescents referred for both diagnostic evaluation and treatment.

The medical records for public healthcare are digital in Finland. From digital medical records, it is possible to define visits that have been done for evaluation or treatment of mental health problems. This consists of information on diagnosis or reason for visit, and to some extent, an operational code for the content of visit. The information is collected in national registers that can be used to describe the number of adolescents who received mental health services in public healthcare. It is to be noted that this information is still an underestimate due to missing data and because it does not cover all visits to mental health services; most importantly, information from services provided in social services and private healthcare is missing. However, it provides some idea about the minimal proportion of adolescents in contact with healthcare due to mental health problems. A recent report describes the use of public healthcare services for mental health among young people in 2020 (4).

Table 1. Proportion of young people with at least one mental health-related visit to public healthcare services in 2020. Adapted from Forsell 2022 (4.)

Proportion of the age group with at least one mental health-related visit to public healthcare services in 2020	**7–12-y**	**13–17-y**	**18–22-y**
Primary care only	4.3 %	6.9 %	10.3 %
Specialized services only	3.2 %	4.7 %	4.1 %
Both primary care and specialized services	1.0 %	2.8 %	3.6 %
Total	8.5 %	14.4 %	18.0 %

The number of both adolescents and visits is larger in primary healthcare than in specialized psychiatric services (4). Accordingly, the quality of primary care mental health services is essential for the overall quality of mental health services. The total number of young people and the total number of visits for mental health have increased over several years now, in both primary care and specialized services, the increase being more prominent in primary care settings.

The median number of visits per client in primary care was 2 (4). Thus, typically, the number of visits was sufficient only for a short evaluation. Those adolescents who need treatment were referred to specialized care, where the waiting time may even be several months (5).

Several other sources of information show that the demand for youth psychosocial services has steadily increased. In Finland, the proportion of youths aged 16 to 24 years who receive rehabilitation psychotherapy, financially subsidized by the Social Insurance Institution, has increased 2.5-fold from 2012 to 2021 (http://sotkanet.fi info 3872). During the same period, psychiatric outpatient visits have increased 1.5-fold among those aged 13 to 17 years (http://sotkanet.fi info 2484). This is interpreted to result from an increased perceived need and also from a targeted lowered threshold to seek treatment.

Moreover, despite the declining trend of suicide rates of young people in Finland (Source: Causes of death, Statistics Finland), the suicide rates are still high internationally (6). Among the causes of death for young people aged 15 to 24, the share of suicides (n = 99) was over one third in 2021. While suicide has always an individual, multifactorial background, the quality of services should be a priority when aiming at decreasing suicide rates.

2. MENTAL HEALTH STRATEGY: AIMS FOR IMPROVING CARE

The Finnish Mental Health Strategy 2020-2030 (7) has a strong focus on young people. The strategy proposes a comprehensive approach to face the increased need for psychiatric services and insufficient resources with methods to provide timely and high-quality services for mental health.

The Mental Health Strategy 2020-2030 presents several initiatives for increasing positive mental health and mental health literacy of young people and people interacting with young people. Individual level, structural and political level promotion of mental health, as well as reduction of the risk for compromised mental health and substance abuse, are seen as an essential basis for the current and future mental health of young people.

The key problems identified in the Finnish mental health services for the young include a need for faster access to care without organizational thresholds and waiting lists, a need for efficient use of existing resources for high-quality care, and a need for professionals to provide psychosocial interventions in primary care (7). Reaching these aims would strengthen the ability to prevent chronic and more complex mental health problems, and provide specialized care for those who have a severe mental disorder.

Accordingly, a strong strategic emphasis, implemented as part of the ongoing Finnish national health and social services reform, is on provision of short evidence-based (EB), low-threshold interventions in primary care (7). The target was set to start with the most common clinical problems. For young people, these are depression and anxiety (8,9).

3. THE PROCESS OF SELECTING IPC-A FOR NATIONAL IMPLEMENTATION

During 2016-2017, the Helsinki University Hospital, THL and the City of Espoo conducted a pilot project with Klaus Ranta and Mauri Marttunen as the project leaders. The knowledge and report (10) from this pilot study served as the basis for preparation of a national implementation.

The project team included experts and professionals in youth mental health services, in both primary care and specialized care, and stakeholders. The methods included reviews of literature, group discussions and interviews. After selecting the most promising interventions based on the reviews, one intervention was to be tested in a pilot study, including collection of qualitative and quantitative data for feasibility and efficacy.

The project team evaluated certain predetermined factors to identify a suitable intervention for national implementation. The factors evaluated included: a) incidence of mental health disorders in adolescence, b) implementation context, i.e., the school as the operational environment for implementation, c) literature review of previous knowledge of clinical interventions for adolescents on suitability, efficacy and success in implementation, and d) experiences from prior Finnish projects and stakeholders in implementing other primary level mental health interventions for adolescents (10).

a. *Incidence* of mental health disorders in adolescence. Based on available epidemiological data and data on actual service use, anxiety and depressive disorders were the two most prevalent mental health disorders with the highest incidence in adolescents (8,9).

b. *Implementation context:* The school as the operational environment for implementation had an impact on selection of the intervention. Selection was further explored in an analysis of how the services work at primary care and in specialized services, what the principal tasks of primary care services are and what are the possibilities for collaboration. The school health and welfare service leaders and the project lead reviewed these factors in a series of discussions. The identified important factors included estimated and available time resources of staff with other tasks, profile of work, basic knowledge and skills in mental health work of the professional groups working in school health and welfare services, and length of intervention compared to time available. The results favoured implementing brief, individual-based interventions requiring no lengthy theoretical training.

c. *Literature review* of previous knowledge of clinical interventions for adolescents on suitability, efficacy and success in implementation. Evidence on effectiveness of clinical interventions favoured testing either cognitive behavioural therapy (CBT) or interpersonal psychotherapy (IPT) for adolescents. Only a limited number of brief CBT/IPT-based interventions suitable for the school context were available. The length of interventions was estimated to be optimally not more than 6-8 meetings.

d. *Experiences from prior Finnish projects of implementing other primary level mental health interventions for adolescents.*

During the preliminary phase and first phase of the development project 2016-2017, experiences from prior Finnish projects implementing mental health programmes were collected informally (KR, MM). Only few interventions had previously been implemented for adolescents in Finland; commonly failures appeared to be in the maintenance phase of knowledge and skills, preventing large-scale use.

Professional support and supervision were seen as important factors for maintenance of skills. This meant that the intervention to be selected was favoured if experts with experience of using CBT or IPT in a longer format were available. Experiences of prior implementation projects suggested that being able to support an intervention by professionals with experience in public health services would be especially important, providing supervisory knowledge about the setting and practical obstacles in the public sector, in addition to theoretical and practical tips for using the intervention at individual level.

In preparation for a need for supervisors in a larger implementation project, the longer version of interpersonal psychotherapy, IPT-A, had been implemented in specialized services at several university clinics in Finland in 2018 and 2019. These therapists were already clinically competent and familiar with the interpersonal model through IPT-A. Thus, they could be recruited to supervise the IPC-A trainees, and simultaneously be trained for the shorter IPC-A version of interpersonal therapy.

The identified reasons for unsuccessful implementation, based on the previous literature and informal inquiries, included discontinuity, lack of planned, sustained support and supervision for practical use, and unclear target groups for the intervention. Furthermore, evaluation of factors that would have an impact on success of the implementation process in a school environment had previously been limited.

The project team concluded that most factors favoured selecting IPC-A as a short intervention, suitable for the time available and the profile of professionals, and of potential help for a large proportion of adolescents presenting with depressive symptoms at school health services. There was a sufficient existing pool of therapists that could rapidly be trained to work as supervisors within public healthcare. The training was short and the overall time commitment for training and supervision was considered realistic for professionals. The critical risk was that only one person in Finland had an accreditation to train IPC-A. This was ameliorated by important support from international centres for IPC-A training.

The options for the pilot implementation model included: a) using public primary healthcare services and specialized services, with support for implementation, b) using private sector agents, or c) using third sector organizations. After consideration, it became clear that for generalizable results for a national implementation, the pilot should be done in a public health care setting.

This was deemed the most realistic for maintenance of knowledge after the project funding period.

4. IPC-A, EVIDENCE FOR FEASIBILITY AND EFFICACY

IPC-A is a brief, individual-based intervention (3–8 sessions) focusing on interpersonal relations as a factor of resilience in depressive symptoms. IPC-A is a shorter form of IPT for youths, developed by prof. Myrna Weissman and team (11). The evidence for efficacy of IPT has been well shown in several well-designed RCTs that were specifically designed for evidence in adolescents (for reviews, see (12–14)). IPC-A was developed to take into account age-specific needs and features. Previous trials of IPT for adults and older people have proposed that shortening of IPT does not necessarily decrease efficacy (15).

Suitability of IPC-A to a school setting was piloted in Finland in one city, Espoo (16). Espoo is a city of 295 000 inhabitants with an average high socio-economic status in the capital area of Finland. In the Finnish pilot study, the schools were cluster randomized.

A comparison group of active treatment (Brief Psychosocial Support, BPS) was chosen (16). To deliver BPS, the school health and welfare workers were instructed to assess, repeatedly monitor and target symptoms of depression, in addition to using their routine skills to support students coping with symptoms of depression, and to limit the BPS to six sessions over 6–12 weeks. BPS was delivered with the same frequency and session duration as IPC-A. Thus, BPS represented an enhanced, more intensive and more focused version of the routine counselling provided by professionals working in the Finnish SHWS (10,16).

The sample size remained modest (total 55 adolescents) but was sufficient for a pilot trial. Qualitative interviews (10,17,18,19) showed positive results for feasibility of IPC-A, which is consistent with international studies (11,20,21). Adolescents and counsellors in both groups were satisfied with the treatment, and 89% of the adolescents with IPC-A completed the treatments and follow-ups. A trend indicated greater baseline symptom severity among adolescents treated in the schools providing IPC-A. While no statistical significance was reached between treatments (16), the results for efficacy remained inconclusive.

Overall, because evidence from large RCTs specifically for young people is lacking, selection of IPC-A for a national, large-scale implementation was not in line with the strictly defined EB implementation guidelines. Therefore, while there was a common agreement on the immediate need to try a novel approach of short interventions in primary care, the large-scale national implementation of IPC-A before more evidence had been accumulated was criticized by some. Others stressed relevance of the other selection criteria and of the pilot in public primary healthcare in Finland, and saw the overall evidence for feasibility and knowledge about efficiency for short forms of IPT as sufficient.

Immediately after the pilot phase, in years 2018 and 2019, both IPT and IPC-A training was available in a less organized format than the current nationwide training. While experiences from the training were not systematically evaluated, we sought information from these professionals when starting the nationwide implementation process. More than 200 professionals had already been trained in the use of IPC-A in Finland by the end of 2020, initiated at local, personnel or organization level.

A major part of those who had organized training in 2016 to 2019 reported that the interventions were not in use. Two major reasons for that appeared. First, they reported that it was almost impossible to identify suitable adolescents for interventions, i.e., “pure” mild or moderate depression, without any anxiety, social or family issues, or substance use. This was clarified in new instructions allowing broader inclusion and stressing the option of integrating different forms of support. Second, no sufficient mentoring or other support for professionals was provided after the training, despite the fact that several had simultaneously been trained in IPT to provide supervision for IPC-A experts. Overall, this information provided further support for the need for sufficient local and national support for trainees and their supervisors. This would include coordination and follow-up of supervision. In addition to new training, the previously trained professionals were provided shorter booster trainings and the same mentoring as the new trainees.

5. ESTIMATING THE NEED FOR TRAINING

The number of the target population for treatment had to be first estimated based on incidence of depression. Optimally, incidence would describe the onset of new episodes fulfilling the inclusion criteria for the specific treatment. General population incidence studies are very rare, as they require a prospective design where a study sample representative of the general population is examined twice, 12 months apart.

We used the information from the Netherlands Mental Health Survey and Incidence Study (NEMESIS), which is a high-quality study. NEMESIS provides gender- and age-specific data on the incidence of common mental disorders (22). Moreover, prevalence findings from NEMESIS (23) are consistent with previous Finnish studies.

According to NEMESIS, the incidence of major depressive disorder in the age group 18-24 years is 0.84% in men and 3.11% in women, and the incidence of anxiety disorders is 1.62% in men and 5.42% in women (22). Based on these findings, we roughly estimated that the incidence of depressive disorders would be 2%. We used this estimate and the number of adolescents aged 13-18 years in Finland (n = 356 000) to calculate the number of adolescents aged 13-18 years who would potentially need an intervention to treat depression in primary care. This means that roughly 7000 adolescents would benefit from IPC intervention in primary care.

6. NATIONWIDE IMPLEMENTATION OF THE MENTAL HEALTH STRATEGY FOR YOUTH MENTAL HEALTH

The Finnish ministry for social affairs and health in 2020 initiated funding for the implementation of the social and health services reform, and a major part of the funding was dedicated to implementing the Mental Health Strategy, most importantly, the strategic goal of improving the quality of mental healthcare services. It was obligatory for each hospital district receiving the funding to start an implementation process of EB interventions to treat young people. Accordingly, THL would monitor the success and maintenance of the training, as well as the interventions.

The municipalities were free to choose professionals to be trained for IPC-A. The professionals to be trained were those who were locally estimated to be the most likely to reach adolescents with low threshold in their position, had own interest to attend training, and had sufficient basic knowledge and skills necessary to provide the interventions. No formal or nationwide criteria for selection were applied.

The subvention of 43 million euros from the ministry in 2020 covered the coordination of training and the support for implementation in five university clinics, and training of professionals in 21 future wellbeing services counties. They decided to train a total of 1600 professionals in IPC-A by the end of 2022. It turned out that support of implementation, including follow-up and communication, was resource intensive for the university clinics. This is why an additional funding of 10 million euros was provided in December 2021 for the five university clinics to compensate for building sustainable resources for collaboration.

The university clinics have hired project teams for local coordination and support of implementation. This has varied from 0.5 full-time (FT) personnel to 3FT personnel per university clinic. It has commonly been reported that the personnel for the project teams was underestimated in the applications for funding, while previous experience about importance of communication and tools and interaction at follow-up were lacking.

The realistic estimated costs of training for the employer were clarified during the implementation process. The costs should take into account the time and thus, salary needed for a trainee for two days of initial training, two additional half-days of training within a year, bi-weekly group mentoring for 12 months and other events for trained personnel, e.g., for learning evaluation methods or to support implementation. Furthermore, for the professional, getting prepared for sessions, analyzing and reporting sessions, and identifying suitable young people for interventions was expected to take extra time.

7. THE ROLE OF THE FINNISH INSTITUTE FOR HEALTH AND WELFARE

THL has provided input in networking the stakeholders and professionals, and coordinating the creation of guidelines for professionals, with the aim of confirming efficacy and safety of treatment. Follow-up of success in implementation and integration of the therapists into the primary care services is the main task of THL.

Temporary solutions for follow-up. While the digital medical files did not provide uniform components for follow-up, we encouraged the report of finding temporary solutions from all professionals who received the IPC-A training. It was also necessary to list the number of adolescents who were provided treatment, whether trainees started to use the intervention, the overall number of treated adolescents, as well as symptom profiles at intake and end of treatment. The data had to be collected as a separate survey, completed by therapists and summarized by university clinics. This information was then disseminated by inviting all districts to present their results at 6-month meetings. Simultaneously, a process of creating common structures for follow-up was coordinated at THL.

Number and equal access to interventions. THL has advanced use of national register data for follow-up of interventions. A specific IPC-A operational code for use in medical files was created in 2021. After implementation of the IPC-A operational code in medical files, it will be possible to monitor number of overall and per patient IPC-A sessions as well as geographic distribution of use.

Follow-up of trainees. A professional ID for professionals is in use in healthcare services in Finland. This enables evaluating individual level performance of trainees using the intervention after training. In the future, thanks to personal identification numbers of patients, it will become possible to combine information from different registers. This will enable identification of the number and some characteristics of adolescents receiving IPC-A, as well as their outcome: hospitalizations, use of psychotropic medication or rehabilitation psychotherapy, or need for child welfare services.

Psychometric measures. We stressed the importance of having one nationally accepted measure, Patient Health Questionnaire (PHQ-9) for depressive symptoms, to compare symptom level at intake and efficacy of treatment (24). Originally, the university clinics had selected three different scales, not comparable at intake or after treatment. We are working towards structured methods of integrating symptom measurement to local medical files and from there, into the national level register. This would confirm robust information to estimate equal and appropriate access to interventions, as well as real-life efficacy and cost-effectiveness of IPC-A and training.

Networking stakeholders and project teams. THL formed a network of project managers and people in response for the services. Initially, checklists were created for pathways to care, for integration to other services, and for inclusion and follow-up of patients. At 6-month meetings, stakeholders and project managers described the status of implementation, any problems encountered and successful practical solutions to those problems. One to two months before the meeting, THL sent a survey to collect information on the number of professionals trained in IPC-A as well as number of adolescents that received treatment. This information was collected as a survey from university clinics and from each hospital district. Furthermore, open field questions and invited presentations identified and confirmed dissemination of the best practical innovations for training and implementation and encouraged interaction to find practical solutions.

8. CURRENT STATUS OF IMPLEMENTATION

The data provided here is previously unpublished and based on the information collected through the university clinics. By the end of 2021, the number of professionals trained in IPC-A was 1013, which is 62% of the total aim/goal of 1600 professionals by the end of 2022. Overall, it seems that the target number for training will be reached. Regional differences in the number of therapists were large, varying from 374 trained therapists in Eastern Finland to

Table 2. Number of IPC-A professionals trained and treatments provided based on the report from the five university clinics

District of Finland	Number of IPC-A professionals trained (2020 to end of 2021)	Number of professionals to be trained in 2022	% trained of the overall goal by end of 2022	Number of adolescents treated (end of 2021)	Ratio between professionals trained and adolescents treated (by end of 2021)
Southern	189	185	50.5	352	1.86
Eastern	374	150	71.4	700	1.87
Northern	200	80	71.4	358	1.79
Central	200	150	57.1	213	1.07
Western	50	102	32.9	29	0.58

50 in Western Finland (*Table 2*). While the training was ongoing, more than 1600 adolescents had initiated IPC-A treatment by the end of 2021, which is 26% of the originally estimated need for treatment.

Government grants do not cover the costs of scientific evaluation of the implementation process, effectiveness or cost-effectiveness of IPC-A. However, THL and distinct project teams have collected feedback, mostly unstructured, from professionals of the project teams, supervisors, IPC-A professionals, adolescents and their families. The overall view is positive from all informants. They uniformly confirm that IPC-A fits well the school environment.

Based on the comments, there seem to be differences between professionals in how they describe the utility of the structured intervention and training for IPC-A. A psychologist might feel that their professional training had already provided them with tools to help adolescents, or that a major part of their time is allocated for psychological testing and preventive work. On the other hand, school social workers were more likely to report that their training was a very useful way to complement their professional training, and IPC-A provided a structured method to give effective support for the adolescents they met in their work. The optimal profile of professionals to be trained is worth considering in the future. For conclusions, follow-up of the ability of professionals to use IPC-A and maintain their skills in the school setting will be essential.

9. CONCLUSIONS AND FUTURE STEPS

With the experiences from more than 1000 professionals, working in rural and urban areas representing all of Finland, it seems that IPC-A is suitable for use in primary care. It is still unclear whether the training will be transferred into actual interventions in all areas. So far, the average number of adolescents treated does not reach the estimate of 4-5 treatments per year per professional. Given that the training is ongoing, a critical follow-up and support for using the skills is necessary.

In the future, resources for confirming the continuity of the implementation will be essential. Repeated and consistent communication about the aims of training will be necessary to maintain the knowledge and motivation. Interaction between different implementation teams about the model for the practical phases of treatment can facilitate rapid progress. Collection of information concerning trainees, the number of adolescents treated per trainee, as well as real-life efficacy of interventions is necessary. Given the magnitude of investment, evaluation of the factors affecting feasibility and cost-effectiveness of IPC-A in real-life settings across regions and in subgroups of youths would be important. Finally, knowledge about theory, facilitators and barriers to implementation is needed both from project teams as well as leaders to strengthen the likelihood of success in maintaining the skills and knowledge from training (25). Evaluation of feasibility should include participation of youths and professionals.

The ongoing programme will not be sufficient to provide equal access to EB interventions for all young people with wellbeing issues and prevalent mental health conditions. Accordingly, the implementation project of IPC-A would provide essential information in efforts to produce a general model suitable for Finland to provide mental health services in primary care. Over the years, the aim has to be to provide suitable EB methods to treat all groups of adolescents, e.g., the increasing proportion of youths with multicultural or minority background, or adolescents with multimorbid conditions and in need of social services.

The overall goal of the mental health strategy is to improve efficacy of mental health services by using EB interventions. Several international guidelines (Grade, SPR, Blueprints) list explicit criteria for EB interventions (25). Similar criteria are used in the Finnish treatment guidelines that are created and updated by Duodecim, the Finnish medical association. In creating the Finnish treatment guidelines, classification of methods with strong or moderate evidence for efficacy is performed by an expert panel based on a systematic review and updated once sufficient novel data is available. To confirm efficacy, it seems important to confirm reliability of EB interventions by using national frameworks and follow-up structures, especially when it comes to use of governmental funding.

Despite a uniform international definition, the concept of EB interventions has proven controversial among stakeholders in Finland. The fact that the selection of IPC-A was made on broader criteria, as described above, but is not a strictly defined EB intervention has caused confusion. Currently, the university clinics are selecting training for future interventions to target other problems such as anxiety. The representatives of university clinics seem to consider EB to refer to the knowledge base that can be summarized from efficient components of actual EB treatments. For practical reasons, they want to adapt a loose definition for the efficacy of future interventions, allowing modifications to the content and changes to accredited training. In their view, if the method to be developed has sufficient evidence for a background theory (such as CBT), and consists of components that commonly are included in the manuals of efficient interventions (such as exposure to anxiety provoking triggers), the intervention may be considered as being EB. This would allow development of "own" interventions, free from restrictions of accreditations, licences for use or other costs. This is clearly against international definitions of EB intervention.

For efficacy, the priority should be to use EB interventions where they exist. Where modifications are necessary due to some specific needs of the target group or context of use, the process should optimally be transparent and evaluated by a scientific process. This includes a peer review of protocol including literature for previous knowledge, reasons for edits and a manual for content. Additionally, the general characteristics of EB interventions apply, e.g., providing accredited training, describing content in a manual, confirming efficacy with psychometric measures at individual and group level, and aiming at final evidence for efficacy in RCTs.

It is relatively cheap to create interventions and provide short training. Critically evaluating efficacy and feasibility, maintaining fidelity to the method by providing supervision, providing booster training and supporting implementation is resource intensive. This knowledge has implications for funding. Conflicts of interest should be transparent. Accordingly, we would recommend creating explicit guidelines for selection of interventions, support of implementation and target number of patients to be treated per trainee, as it comes from use of public funding. A good example of guidelines for implementation of EB interventions is from Norway, the Ungsinn criteria (25,26).

Contributions

Outi Linnaranta, MD, PhD, started in June 2020 as a coordinator of the implementation of the Finnish Mental Health Strategy 2020-2030. As a chief physician at THL, she has contributed to planning the national support for implementation and evaluation of success in implementation (Sections 7 and 8). She has coordinated collection of information on the national implementation, written the original manuscript and interviewed other contributors.

Klaus Ranta, MD, PhD, was the principal investigator in the IPC pilot study and responsible for coordinating the original plan for national implementation. He made a major contribution to the selection of IPC-A and to planning the training programme (Sections 3 to 5). He was a member of the expert group for the preparation of the Mental Health Strategy (Section 2 and 6). Dr. Ranta worked at the Helsinki University Hospital as the Head of Adolescent psychiatry until December 2020. Currently, he works as a researcher at the University of Tampere.

Mauri Marttunen, MD, PhD, is a professor emeritus of adolescent psychiatry. The knowledge on epidemiology of adolescent mental health and services for adolescents in Finland is mainly collected under his leadership, and he has been a key person in training professionals as well as serving the ministry over decades. He was in leadership of the pilot study and contributed to the planning of the national implementation (Sections 3 to 5).

Terhi Aalto-Setälä, MD, PhD, and *Miia Ståhle*, MSocSc, work at THL and with Outi Linnaranta, they contributed to the national support for implementation in 2020-2023 (Sections 7 and 8).

Jaana Suvisaari, MD, PhD, is a research professor at THL. She conducted the estimation of incidence, and has written the corresponding section of the text (Section 5). She was a member of the expert group for the preparation of the Mental Health Strategy (Section 2).

Helena Vorma, MD, PhD, is a senior ministerial adviser in medical affairs/mental health at the Ministry of Social Affairs and Health. Over the years, she has made a major contribution as a medical advisor in building the legal basis and guidelines for organizing mental health services, as well as writing the National Mental Health Strategy and building structures for the funding of the National Mental Health Strategy (Sections 2 and 6).

All co-authors have accepted the final manuscript for publication.

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TREATING ADOLESCENT DEPRESSION IN MULTI-PROFESSIONAL SCHOOL HEALTH AND WELFARE SERVICES WITH IPC-A: IMPLEMENTATION RESULTS FROM A NATIONAL PILOT TRIAL

ABSTRACT

Background: Implementation of research-based interventions for adolescent depression to primary level services is important, given the need for treatment among depressive youth. Knowledge of factors facilitating or hindering implementation in multi-professional school health and welfare services (SHWS) is needed. Method: A national pilot project implemented IPC-A to SHWS in upper secondary schools of Espoo in 2016-2017. Fifty-five professionals (psychologists, social workers, nurses), 28 delivering IPC-A and 27 comparison intervention, were trained in the first year. Process and individual level implementation variables, and trainees' clinical IPC-A skills were examined with basic statistical methods and qualitative analyses. Results: Over half of adolescents were identified by nurse referral, 24% self-referred and 22% had been advised to seek support by teacher/friend. No additional cross-profession referrals were observed. Adolescents reported equal rates of interpersonal/family-related (49%) and emotional (51%) problems when specifying the reason for needing help. SHWS professionals reported multiple roadblocks in introducing the new intervention to the school context, including identifying adolescents with severity of symptoms targeted by the intervention, assessing depression and time constrains. Those providing comparison intervention without a specified model, supervision or support perceived it as difficult. As implementation facilitators, SHWS professionals relied on health checks, screenings and informing teachers and other professionals. Professionals trained in IPC-A delivered on average one IPC-A intervention per year, those delivering comparison interventions even less. IPC-A counsellors self-reported mastery of most IPC-A delivery skills in their first interventions. They experienced IPC-A as widely beneficial for adolescents and themselves as professionals. Supervisors' assessments of counsellors' competence indicated that delivery skills related to basic principles of IPC-A were relatively well mastered, but skills related to specific IPC-A techniques were inconsistent and poorly mastered. Conclusion: Implementation efforts should take into account issues related to identification and assessment of mental health disorders. Inconsistent mastery of IPC-A intervention skills by trainee counsellors suggests that a systematic approach to clinical training and supervision, and protected time for professionals to learn skills are of key importance.

KEY WORDS: INTERPERSONAL COUNSELLING, DEPRESSION, ADOLESCENTS, PSYCHOTHERAPY, IMPLEMENTATION, MENTAL HEALTH SERVICES

1. INTRODUCTION

Depression is a major mental health challenge for adolescents. It is prevalent, affecting 5 to 12 per cent of the adolescent population during a one-year period (1,2). Some recent data suggest depressive symptoms and disorders may even be increasing among adolescents (3,4). Incidence of depression is highest between 12 to 17 years of age, and median age of onset is around 15 years. From puberty onwards, a female preponderance is found (2,5). In clinical studies, adolescent depression is concurrently associated with academic and social impairment, increased risk for subsequent health and social impairment (1,6) and increased risk of suicidal behaviour (2,5,7). In Finland, a 12-month prevalence of major depressive disorder is around 5 per cent (8), comparable with international studies.

In recent years, advances in increasing adolescents' access to early mental health interventions have been made in some countries by launching new services specifically designed for this age group (9), in others by services operating as part of primary healthcare and conducting collaborative work with schools (10). Challenges faced in several countries include adolescents getting lost between child and adult services, service gaps and lack of primary level services (11).

There are examples of mental health services and programmes which have extended intervention delivery to schools. In Australia, the headspace service (12) has created links to schools to arrange help in a suicide crisis and to provide direct counselling for mild to moderate mental health problems among students. In Britain, the Link Programme has initiated systematic training of school-based professionals to increase interventions for highly prevalent mental health problems (13). In the dissemination and implementation of mental health interventions, arranging high-standard, competency-based training and clinical method supervision is considered crucial. However, at the same time adaptability and fit of an intervention to the service context cannot be overlooked. Thus, a principle of "flexibility within fidelity" is considered important in mental health practice implementation (14).

Implementation research indicates that implementation of evidence-based interventions to real-life services is a complex and long-term effort. Expert approximations suggest it takes on average seventeen years for an evidence-based medical practice to become sustainable in routine general healthcare service (15). Theoretically diverse, multi-discipline and multi-professional mental health services, such as those provided by schools (10), may represent even more challenging contexts than healthcare service systems.

In a meta-analysis, Williams and Beidas examined variables associated with the efficiency of implementation of evidence-based mental health interventions to community/primary level organizations. They divided variables into organization level factors and individual/therapist level factors (16). Of the organization-level factors, the organization's prioritization of evidence-based practice (EBP) and its flexibility/rigidity were found most consistently to be significant, less systematic evidence was found for effects of the organization culture (e.g., systematic approach to recovery orientation, organizational leadership), implementation climate, organizational resources available for implementation and organization climate. Of the individual level variables, professionals' knowledge of EBP and their attitudes and beliefs about EBP were most often identified as predicting effective implementation. Their effects were found to be greater than the effects of an individual's mental health skills and competence, motivation, intentions and self-efficacy. Large-scale implementation studies show that, even in coherently designed and structured mental health services, local organizational level factors account for 20–40% of the treatment outcomes (17).

Questions related to which professional groups should be trained, which training elements are needed and what kind and how frequently method supervision is needed are central to method implementation (18). Furthermore, method training and supervision require professionals' time. The challenge of finding time for method learning and practice is often faced by professionals working in school contexts (10). In addition to time invested into learning and delivery of an intervention, assessment, or learning of assessment, of mental health disorders may require professionals' time and acquisition of new skills.

A Finnish pilot project, in which a substantial part of school health and welfare service (SHWS) professionals, working in the upper secondary schools of the City of Espoo, were trained to deliver a brief psychosocial intervention, Interpersonal Counselling, adolescent version (IPC-A) for treatment of adolescents with mild or moderate depression, was conducted in 2016-17 (19,20). Some professional reports of the use of IPC-A in smaller Finnish primary level service units have been published since the pilot project, including the use of IPC-A primarily by social workers (21,22) and by nurses in student healthcare (23).

Surma-aho (21) interviewed nine SHWS social workers, trained in IPC-A, in three cities. Participants found the structure of the intervention, focusing on one interpersonal problem, the techniques of IPC-A and the method's overall focus on communication and interpersonal interaction on multiple levels to be strengths. However, the participants expressed concern as to whether their work orientation would transform into being too person-centred as a result of implementation of IPC-A to their organisation. Maukonen (22), conducted an email survey for professionals working at the primary level adolescent welfare unit in Jyväskylä. Respondents identified the structure of the intervention and focusing on one problem area as strengths of IPC-A. The counsellors stressed the importance of method supervision for effective delivery of the method, and for the counsellors personally. As challenges to the use of IPC-A, participants reported encountering adolescents whose depression symptoms were more severe than those targeted by IPC-A and needing longer treatment. They also reported challenges in setting the focus area, and of having sufficient time resources for delivering IPC-A.

Arppe (23) conducted a qualitative study interviewing a small number (n = 6) of student healthcare professionals trained in IPC-A and delivering it in their work. Participants experienced IPC-A as a suitable intervention method for working with adolescents with mild depressive symptoms clear and in non-complicated situations. They reported the method's structured approach bringing a needed structure to their mental health work; setting of interpersonal focus was also seen as beneficial. Reported challenges included availability of time resources, professional flexibility required by working with IPC-A and the need to ascertain management support.

In a broader view, scarce knowledge is available on variables related to implementation of mental health interventions to multi-professional SHWS in Finland. Such data are of key importance for effective planning of implementation support measures and resource allocation. They are also relevant to the present Finnish national initiative, stated in the National Finnish Mental Health Strategy 2020-2030 (24), to increase availability of short interventions such as IPC-A in primary level services, and also for dissemination and implementation of other structured interventions to the school context.

The aim of the present study was to gain knowledge on the factors related to the success of implementation when training professionals at Finnish schools to provide brief depression interventions for adolescents. We examined both organization-related and individual/professional-related implementation variables in the national pilot project of implementing IPC-A in the multi-professional SHWS of the City of Espoo in 2016 (19,20).

Of organization-related implementation variables, we examined adolescents' pathways to intervention in the schools, their reported reasons for seeking support and the rate of delivery of interventions by the SHWS professionals during a school year. Of the individual implementation variables, we examined the school professionals' experiences of identifying depression in adolescents, of providing interventions in the school, their experiences of IPC-A as a clinical method, and both self-assessment and supervisors' assessment of their competence in providing IPC-A during their first interventions.

2. METHOD

2.1. PARTICIPANTS: THE SCHOOL PROFESSIONALS

During the first year of the Finnish IPC-A pilot project (i.e., between August 2016 and June 2017), 57 SHWS professionals were initially involved. Of them, 29 were randomized to provide six-session, weekly IPC-A, and 28 to provide a comparison intervention, six-session brief psychosocial support (BPS), which represented an enhanced form of counselling, focused on depressive symptoms, using repeated, weekly assessment of symptoms and professionals' routine working methods, see Parhiala et al. (20). One SHWS professional from from each group discontinued early on, leaving 55 professionals. One of the trained professionals was involved in the research team, participated in supervision and delivered interventions; these interventions were not included in the effectiveness trial. However, self-assessment and supervisor assessment of the professional's skills are included in this study.

All SHWS professionals involved in the project were trained in identification of depression and its severity (half-day lecture), and use of depression assessment measures and monitoring of depressive symptoms (half-day workshop). Both of these were open to all SHWS professionals. The IPC-A-trained professionals attended a 3-day training, first containing 1-day didactic training by a Finnish expert method trainer, then a 2-day simultaneously translated clinical workshop by an international expert trainer, concentrating on delivering clinical components and techniques of IPC-A. The IPC-A manual (25) and training materials were used as reference materials in supervision sessions. First language small group exercises were facilitated by Finnish IPT-A therapists.

The professionals initiated 55 IPC-A/BPS interventions between August 2016 and June 2017. Of these interventions, 49 were completed. See Parhiala et al. (2020) for intake and exclusion criteria and clinical assessments (20).

Six modality-specific supervision groups were formed for professionals delivering IPC-A. In four groups supervision was provided by one supervisor, in two groups by two supervisors. Supervision was provided for them every second week for 2.5 hours in groups of 4-6 trainees. The decision to provide supervision either alone or in pairs was negotiated with supervisors as they wished. All supervisors had more than two years' experience of working in secondary psychiatric services, prior Finnish training for interpersonal psychotherapy for depressed adolescents (IPT-A) and more than one year's experience of providing IPT-A in secondary services. The supervisors participated in the three-day IPC-A training alongside the IPC-A counsellor trainees from SHWS.

The study was reviewed and approved by both the Medical Ethics Committee of Hospital District of Helsinki and Uusimaa (HUS) and the Ethics Committee of City of Espoo.

2.2. PROCEDURE

The implementation model. The framework used in the planning of the implementation model (19) used data from several sources: 1. scientific data from clinical trials, meta-analyses and expert recommendations for evidence-based treatment of adolescent depression (26,27); 2. prior Finnish experiences of working collaboratively between secondary level and primary level professionals to enhance mental health interventions (28); 3. international implementation models (17); and 4. prior Finnish experiences of development projects targeting interventions in primary level services (29). It stressed close collaboration with the lead of SHWS professional groups, support for all SHWS professionals in general mental health assessment and work, and for the IPC-A delivering professionals, supervision in the clinical delivery of the intervention.

During the first months of the project, a service provision analysis was done in collaboration with the middle management of SHWS, reviewing type and length of interventions which realistically could be implemented in the routine context of SHWS. As it was known from prior collaborations that systematic mental health assessments and interventions were uncommon in primary level services (28), it was considered necessary in the implementation model to use the expertise of professionals from secondary services in detection and assessment of depression, thus bringing needed, general mental health expertise (10). This support supplemented the IPC-A method training and clinical supervision.

2.3. ASSESSMENTS AND MEASURES

2.3.1 Variables assessed to examine implementation factors at organization/process level

The clinical trial data was used to examine adolescents' pathways to intervention, their perceived initial problems/reasons for seeking help and the delivery of interventions in SHWS. These data were collected systematically during a research interview. Data was collected from adolescents treated with IPC-A and the control depression intervention, BPS, in order to gain knowledge on organization level factors operating when the short, structured depression interventions were introduced into the school environment.

Pathways to intervention. Pathways to intervention were identified according to who initiated an appointment with a SHWS professional due to mental health reasons. Possible pathways were identified beforehand in pre-implementation project meetings. The pathway was defined according to who initiated the referral, covering the following initiators: 1. the adolescent him/herself (self-referrals), 2. teacher, 3. family member, 4. friend, 5. another SHWS professional. During data analysis the teacher, family member and friend were combined to arrive at reasonable group size.

Primary problems/reasons for seeking help from SHWS. Adolescents were asked about their primary reasons for initially seeking help/being advised to seek help. The verbatim responses were analysed by thematic content analysis. Reported reasons were categorized into four groups: 1. problems related to interpersonal relationships/friendships (e.g., bullying, conflicts or loneliness); 2. problems related to family (e.g., arguments with parents, divorce); 3. emotional problems (e.g., low motivation, stress related to school or other life areas, feelings of worthlessness); and 4. emotional problems associated with self-acknowledgement of impairment in functioning.

Reach: implementation outcome as number and rate of delivered treatments. The reach of implementation was examined by counting the number of professionals delivering the interventions (i.e., IPC-A, and BPS for reference), and number of interventions delivered by them across SHWS professional groups (school psychologist, school social worker, school nurse) within a school year.

2.3.2 Variables assessed to examine implementation factors at individual/professional level

Professionals' experiences of identifying adolescents and providing interventions in the school

An email survey was sent to all participating SHWS professionals in October 2016 asking: 1. How has finding adolescents in the intervention been for you since the research project started? 2. What has either helped or hindered you to find suitable adolescents for intervention? 3. What kind of feedback have you got from adolescents, or parents, who you have suggested for the intervention? 4. Have you other comments or suggestions relating to the research project? Thematic content analysis was used to analyse the data.

The responses were first read through several times. As most responses dealt with either treatment pathways, professional roles or identification of depression, responses to all questions were pooled and treated as one source. The responses to questions 1 and 4, which clearly referred to factors having either a helpful or hindering effect to identification of depressive adolescents, or to doing/arranging mental health work in school, were combined with answers to question 2 in the thematic content analysis. In the final coding, answers from this single pool were categorized into three groups: A. Descriptions related to prevailing/current identification, pathways to care or professional role division of mental health work in school; B. roadblocks to identification, intake in interventions or doing mental health work; C. helpful factors in identification, intake or mental health work.

IPC-A counsellors' self-assessment of their IPC-A competence

IPC-A counsellors' self-evaluations of possessing skills to deliver IPC-A were assessed with a shortened, dichotomized version of the IPC Competences List (30). It requires the respondent to state his/her ability of working with each described IPC skill/competence in the first person (e.g., "I am able to engage the adolescent in IPC"). The modified instrument covers 13 basic competences, 4 IPT technique use competences, and 3 overarching, specific IPT competences (see Parhiala et al. 2020) (20). For content of items, see also *Table 5*.

IPC-A counsellors filled in the modified form after each completed IPC-A session. Only questionnaires from counsellors' last sessions in completed interventions were included in the analysis. Such forms were available from 19 IPC-A counsellors, reflecting 25 completed IPC-A interventions. Although the dichotomized IPC competences list offers only two responses ("yes" or "no") placed on two separate vertical columns, 32% of counsellors responded to at least one queried skill by marking on the line between the "yes" and "no" columns. These responses were coded as representing the counsellor's uncertainty about her/his mastery of the skill in question. Due to the high number of answers with uncertainty, self-assessed mastery of IPC-A competences was coded to two classes representing either perceived mastery or perceived lack of mastery/uncertainty of mastery.

IPC-A counsellors' experiences of IPC-A as a clinical intervention - interview

A sub-sample of nine IPC-A counsellors were interviewed three months after treatment ended to assess their perception of adolescents' satisfaction with treatment and clinical change, and to also assess their perception of beneficial/non-beneficial aspects of IPC-A, and their learning. The interview was modified from Elliot Client Change Interview (31,32). Interviews were conducted by two University psychology students who were trained to conduct the interview and blind to the treatment condition. Four interviews were conducted face-to-face, five by telephone. See Parhiala et al. (20) for content of the themes, and key questions covered by the interview. Questions of the interview were otherwise identical to those presented to adolescents to assess the feasibility of IPC-A for adolescents, but were presented in the form to assess the professionals' view (e.g., "What changes, if any, have you noticed in the adolescent since counselling started?").

Supervisors' evaluations of IPC-A counsellors' method competences

Supervisors' evaluation of IPC-A counsellors' mastery of clinical IPC-A competences and ability/adherence to working with the clinical principles of IPC-A were evaluated by supervisors' rating scale version of the IPC Competences List (30). The original version of the IPC competences list is derived from IPT Audio Recording Rating Scale (33), and contains 34 competences. In the IPC-A pilot trial the original IPC competences list was reduced to 20 competences, consisting of 13 basic IPC skills, 4 skills in using IPC-A techniques, and 3 skills related to overarching, specific principles associated with working with IPC-A (e.g., ability to balance being focused and maintaining the therapeutic alliance). See Tables 4 and 6 for items.

Supervisors rated counsellors' mastery and adherence to each IPC-A competence/skill on a 5-point scale: 0 = skill was not used/was not relevant during this session(s), 1 = skill was not mastered at all, 2 = skill was mastered only to a small amount, 3 = skill was mastered relatively well, 4 = skill was mastered well. The recorded competences concerned the last sessions of completed treatments. If the supervisor rated that the skill was not used/not relevant during the last session, all previous sessions were examined for use of the skill. If use of the respective skill was missing throughout all sessions, the mastery of the skill was defined to be absent. The evaluation was based on the counsellor's report and discussion of interventions used during the session, and was thus not a direct review of recorded session content.

BPS counsellors' experiences of delivering depression intervention in the school

Altogether three target group meetings were arranged throughout the school year 2016-17 for the BPS group. Already at the start of the trial, the BPS group expressed a need for support, and only few comparison treatments were started during the first months of the trial. The number of participating professionals represented roughly 40 to 60% of the BPS group (i.e., 41%, 56%, and 48% of the whole group).

The function of these meetings was to support this group, and to resolve possible roadblocks to initiating interventions. Target group meetings followed an open agenda in which participants were given the opportunity to express themes related to intake of adolescents, the project and to doing mental health interventions in the school in general. Detailed written records of the meeting were kept, systematically coding each presented theme. The subjects brought up were treated by qualitative content analysis to identify key themes. The responses provided data on how SHWS professionals experienced providing mental health intervention in the school without specific, imported method training, using their professional skills. BPS was defined as a six-session, targeted comparison intervention for depressive youth, using the methods that they possessed on the basis of their prior professional training and experience, supplemented by instructed session-by-session monitoring of symptoms, with measures they had been trained in and targeting the meetings for depression.

2.4. STATISTICAL ANALYSIS

Numerical data on intervention providing professionals, interventions, initiators of referral, adolescents' primary reasons for seeking help, data from the structured survey for professionals and professionals' self-rated and supervisor-rated competency ratings, were treated with basic statistical methods. Categorical variables were analysed using frequency counts, percentages and Chi-Square tests in group comparisons between the intervention types. Variables on interval level were examined by calculating means, and by performing t-test analyses for comparison between groups, such as comparison of the mean number of completed IPC-A and BPS interventions in the professional groups delivering either IPC-A or BPS.

Qualitative analysis was used to categorize the verbatim responses from interviews of SHWS professionals. The data were coded by one author (P.P.) using the technique according to conventional content analysis as described by Hsieh & Shannon (34). The categorized data were then analyzed by examining frequency counts within each category and comparing frequencies of responses between the categories.

SPSS 28.0 statistical software was used in the analyses.

3. RESULTS

Among the 28 SHWS professionals trained in IPC-A, 9 were school psychologists, 11 school social workers and 8 school nurses, and numbers in the BPS group were 10, 14 and 3, respectively. During the school year 2016-2017, 33 IPC-A interventions and 22 BPS interventions were started, and of these, 29 IPC-A and 20 BPS interventions were completed.

Pathways to intervention

Pathways to intervention were largely similar among adolescents who received either IPC-A or BPS in their respective schools. Among all adolescents who were taken into interventions, the role of the school nurse was central for taking the initiative for arranging intervention in cases where the adolescent did not self-refer. Concerning adolescents in the IPC-A group, the school nurse initiated referrals in 58% of cases, the rest were divided evenly between self (21%) or friend/teacher (21%) referrals. A similar distribution was observed in the BPS group with no between-group (IPC-A vs. BPS) difference between the three referral types (Chi Square = 0.358, df = 2, ns.). No cross-referrals over professional groups were made in

IPC-A or BPS treatment arms, other than the school nurse acting as the referrer. (See *Table 1*).

Table 1. Pathways to intervention: initiators for arranging an appointment in SHWS

Initiator of appointment	Group		
	IPC-A (n=33)	BPS (n=22)	Combined (n=55)
The adolescent (self-referral)	7 (21.2%)	6 (27.3%)	13 (23.6%)
Parent/friend/teacher	7 (21.2%)	5 (22.7%)	12 (21.8%)
Another school health and welfare service professional*			
School psychologist	-	-	-
School social worker	-	-	-
School nurse	19 (57.6%)	11 (50%)	30 (54.5%)

*comparison between groups, Chi Square test, ns.

Adolescents' primary problem/reason for seeking help from SHWS services
Adolescents who continued to interventions reported their main problem, when seeking or being referred for help, related to either interpersonal/familial issues (problems in relationships or within the family) or emotional problems (stress, low mood). Presenting problems were evenly distributed between these two main classes (49% and 51% respectively). These primary problem types were also divided similarly in the IPC-A and BPS groups (Chi Square = 0.437, df = 1, ns.). A somewhat higher frequency of emotional problems associated with impairment was found in adolescents who were referred to IPC-A than to BPS (27% vs 14%), however, this difference was not statistically significant (Fisher's Exact test, p=0.20). (See *Table 2*).

Reach of implementation: number and rates of completed interventions
Roughly equal rates of completed interventions were observed across the SHWS professional groups. The 28 professionals trained in IPC-A delivered 29 completed IPC-A interventions over the school year 2016-2017, the mean number of completed interventions during the school year was thus 1.04. Of the trained IPC-A counsellors, three (11%) did not deliver an intervention during the school year, while 25 (89%) delivered at least one intervention and six counsellors (21%) delivered two or more interventions. Percentage rates of started and completed IPC-A interventions were similar across the professional groups. In comparison, the number of started and completed BPS interventions was fewer. The 27 professionals who were randomized to deliver BPS in their respective schools delivered 20 completed interventions, the mean number of completed BPS interventions per year being 0.74. There was a significant difference between the mean delivery rates of IPC-A and BPS (t-test, equal variances not assumed, t = 3.169, df = 35, p=0.02, two-tailed). In this analysis, range of delivered interventions among those delivering IPC-A was 0-3, and among those delivering BPS it was 0-2, distributions showing no marked outliers preventing the comparison of means. (See *Table 3*).

SHWS professionals' views on mental health work in school – email survey
Altogether 29 SHWS professionals (18 trained in IPC-A and 11 from BPS group) replied to the email questionnaire aimed to identify their perceptions of the detection of depressive adolescents, pathways to intervention, current working model between professionals and of doing mental health work in school.

Table 2. Primary problems/help-seeking reasons reported by depressive adolescents

Primary problem/reason	Group		
	IPC-A (n=33)	BPS (n=22)	Combined (n=55)
1. Problem in interpersonal relationships/friends (e.g., bullying, argument, loneliness)	10 (30.3%)	7 (31.8%)	17 (30.9%)
2. Problem in the family (e.g., divorce, conflict)	5 (15.2%)	5 (22.7%)	10 (18.2%)
3. Emotional problems/symptoms (stress about school, low motivation, worthlessness) emotional symptoms	9 (27.3%)	7 (31.7%)	16 (29.1%)
4. Emotional problems/symptoms associated with impairment in functioning	9 (27.3%)	3 (13.6%)	12 (21.8%)

Table 3. Production of interventions across professional groups

	All	Psychologist	Social worker	School nurse
IPC-A counsellors	28	9	11	8
Did intervention	25 (89.3%)	9	9	7
2 or more	6 (21.4%)	2	1	3
Interventions started	33	13	10	10
number of dropouts	4	1	2	1
BPS counsellors	27	10	14	3
Did intervention	20 (77.8%)	8	10	2
2 or more	4 (14.8%)		3	1
Interventions started	22	6	13	3
number of dropouts	2	1		1

Descriptions related to the current way mental health works. Fifteen (52%) professionals stressed the role of the school nurse/health screenings for identifying adolescents and referring them to intervention. Seven (24%) SHWS professionals replied that adolescents came to intervention by the same route as they had usually come to service in SHWS. These figures reflect the central role of school nurses in the treatment path as initiators.

Roadblocks. The following factors were named as roadblocks to detection of adolescents with a need for intervention, or to doing mental health work in general. Ten professionals (34%) described that the adolescents had either too severe or too mild symptoms to be taken into the intervention, four (14%) reported that assessing depression was difficult and three (10%) reported not having enough time to concentrate on detection/intervention.

Helpful factors/facilitators. The new screening system, containing the systematic depression measures being introduced, was mentioned most frequently, by four (14%) professionals, and increased information about the project was mentioned by three (10%).

Relatively few, nine answers in total, were received for question three on feedback. In the IPC-A group, four professionals had received positive responses from adolescents and parents when suggesting intervention, all these professionals described asking for participation as easy. In the BPS group, five answers were received. Of the three professionals who had suggested BPS as an intervention, one had not received an answer, one had got a positive response and the third a neutral response.

IPC-A counsellors' self-evaluation of their IPC-A skills

Due to the small number of counsellors and rate of interventions per counsellor in each professional group, only a very rough frequency comparison is possible. Examining the IPC-A interventions delivered by the trainee counsellors and mastery of individual IPC-A skills in these interventions, a relatively positive pattern is seen. Individual basic and overarching IPC-A skills were perceived to be mastered by counsellors in between 72% to 97% of interventions. The IPC-A technique skills were perceived being mastered unevenly by the trainee counsellors; the ability to use decision analysis was reported by them in 64% of interventions, and the ability to use role play in only 48% of the interventions.

Looking at the counsellors, roughly 40 to 50% of them perceived themselves as either lacking or being unsure of their mastery of at least one IPC-A skill; of the basic skills the proportion was 48%, of the specific technique skills 52%, of overarching skills 37%. This indicates a somewhat uneven mastery of skills. Observing self-perceived mastery between professional groups shows, very tentatively as the numbers are small, that of nurse counsellors, a higher proportion reported being unsure with respect to basic and overarching IPC-A skills, while all three groups expressed relatively similar levels of perceived mastery of IPC-A technique skills. (See *Table 4*).

Table 4. IPC-A counsellors' self-assessment of their IPC skills: percentage of perceived skills mastery in completed interventions, and proportion of professionals with perceived non-mastery of skills in basic IPC competence, IPC techniques and overarching IPC competence

	All counsellors	**Psychologists**	**Social workers**	**Nurses**
Experienced mastery of basic IPC skills	Per Intervention n = 25	n = 12	n = 8	n = 5
5. Ability to engage the client in IPC	23 (92%)	12 (100%)	7 (87%)	4 (80%)
6. Ability to reframe client's presenting problems as part of her/his depression	24 (96%)	12 (100%)	7 (87%)	5 (100%)
7. Ability to identify an interpersonal problem area providing the focus	21 (84%)	11 (92%)	7 (87%)	3 (60%)
8. Ability to maintain a focus on an IPC interpersonal problem area	21 (84%)	10 (83%)	7 (87%)	4 (80%)
9. Ability to identify and explore difficulties in communication	24 (96%)	12 (100%)	8 (100%)	4 (80%)
10. Ability to facilitate the expression and acceptance of a range of emotions	22 (88%)	11 (92%)	7 (87%)	4 (80%)
11. Ability to encourage interpersonal change in between sessions	21 (84%)	10 (83%)	8 (100%)	3 (60%)
12. Ability to engage the client in preparation for ending	23 (92%)	10 (83%)	8 (100%)	5 (100%)
13. Ability to use questionnaire measures to guide intervention	24 (96%)	12 (100%)	8 (100%)	4 (80%)
One or more basic IPC skill experienced lacking during delivered interventions	Per counsellor n = 19 9 (48%)	n = 8 3 (38%)	n = 6 2 (33%)	n = 5 4 (80%)
Experienced mastery of IPC techniques	Per intervention n = 25	n = 12	n = 8	n = 5
1. Ability to use clarification, summaries and questions	24 (97%)	12 (100%)	8 (100%)	4 (80%)
2. Ability to use communication analysis	22 (88%)	11 (92%)	8 (100%)	3 (60%)
3. Ability to use decision analysis	16 (64%)	6 (50%)	7 (87%)	3 (60%)
4. Ability to use role play	12 (48%	6 (50%)	3 (37%)	3 (60%)
One or more IPC technique skill experienced lacking during delivered interventions	Per counsellor n = 19 10 (52%)	n = 8 5 (63%)	n = 6 3 (50%)	n = 5 2 (40%)

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	All counsellors	Psychologists	Social workers	Nurses
Experienced mastery of overarching, specific IPC competence	Per Intervention n = 25	n = 12	n = 6	n = 5
1. Ability to adapt core IPC strategies to the client's individual needs	19 (76%)	10 (83%)	8 (100%)	1 (20%)
2. Ability to balance being focused and maintaining the therapeutic alliance	18 (72%)	7 (58%)	8 (100%)	3 (60%)
3. Ability to establish an appropriate balance between counsellor activity and non-directive exploration	24 (96%)	12 (100%)	8 (100%)	4 (80%)
One or more overarching IPC skill experienced lacking during delivered interventions	Per counsellor n = 19 7 (37%)	n = 8 3 (38%)	n = 6 0 (0%)	n = 8 4 (80%)

Interview: Counsellors' perception of clinical change and IPC-A as an intervention

As a whole, the interviewed IPC-A counsellors experienced IPC-A as widely beneficial for the adolescents and themselves as professionals. Of note is that the most frequently reported interpersonal change happened in relationships with parents, reported by five (56%) counsellors. Of the intervention's strengths, the most frequent observation was the generally positive experience of intervention and collaboration with adolescents, reported by five (56%) counsellors. Most frequently reported challenges/problems for IPC-A or its use were of time constraints and the difficulty of learning new working methods, both reported by three counsellors (33%). Most counsellors were able to set an interpersonal problem area as a focus according to IPT theory. Several different helpful aspects of IPC-A for the adolescents were reported. The most frequently reported benefits for themselves as a professional were learning new ways of working, reported by four (44%), and learning of focusing and setting of limits to counselling work, reported by three (33%) counsellors. (See *Table 5*).

Supervisors' assessments of counsellors' IPC-A skills

Of the 29 completed IPC-A interventions, supervisors' skills ratings from the last session were available from 27 (93%). Two additional interventions were included by similarly trained and supervised SHWS professionals. Of the supervisors' rated interventions, all basic IPC-A skills were mastered in four out of five interventions. No marked professional group differences were marked in basic IPC-A skills. Each of the three overarching skills were mastered in over 90% of the interventions. Both figures show good mastery in individual skills and generally across these skills.

In contrast, many of the IPC-A counsellors did not master the specific IPC-A techniques of communication analysis, decision analysis or role play. Particularly evident was the lack of mastery of role play. Mastery of this skill was observed in only 10-20% of interventions, also showing in the low rate of 10-20% of professionals who mastered this skill in all their interventions. This suggests that lack of skill mastery was not due to accumulation to one counsellor's interventions. Mastery of decision analysis was observed in 38% of interventions, and there was some inconsistent variation in mastery between the professional groups. Communication analysis was not mastered in 34% of the interventions. Evaluated from quite small numbers, mastery of this skill was more frequent among psychologists than among social workers in the sample. (See *Table 6*).

Table 5. Interview. IPC-A counsellors' perception of change and IPC-A as a working method

Items	Counsellor's response (total n = 9)
Changes observed in adolescents' interpersonal relationships during IPC-A	Contact with parents improved (n = 5) Contact with friends improved (n = 1) Recognizing and expressing own opinions (n = 1) Learn to set boundaries (n = 1) Trust in relationships and self-confidence improved (n = 1)
What was good about/ working well in IPC-A	Went well, collaboration was good (n = 5) Working was like described in the manual, easy (n = 2) Finding the focus area helped the intervention process (n = 2) Whole family got help (n = 1)
What was not working	Not enough time, too much work and different forms (n = 3) New working methods made it difficult (n = 3) Finding one interpersonal focus area (n = 1) Too mild depression symptoms (n = 1) Homework assignments (n = 1)
Setting of interpersonal focus area	Foci as defined by IPC theory: Interpersonal conflict (n = 3), Loneliness (n = 1), Role change (n = 1); Grief (n = 1) Other/more complicated foci described: Disappointment (n = 1), Social relationships generally (n = 2)
What was most helpful	The adolescent got to talk (n = 1) The adolescents' situation was described and understood (n = 1) Monitoring of mood and communication analysis (n = 1) Adolescent learnt from the process how to set own boundaries (n = 1) Adolescent learnt that she/he can make the change (n = 1) I learned methods how to facilitate expression of grief (n = 1) The intervention boosted self-esteem (n = 1) The adolescent learned concrete ways how to act in challenging situations (n = 1) Home assignments and role play (n = 1)
What have you learned	New working methods (n = 4) To set limit to intervention, aiming at focus (n = 3) Clinical work from supervision (n = 2) How to set clear aims, in collaborative fashion (n = 2) How to set a focus (n = 1) How the young mind works (n = 1) Evaluate my own work (n = 1) Learning of the process, that benefits do not just appear right away (n = 1)

Table 6. Supervisors' assessment of IPC-A counsellors' skills: percentages of skill mastery in interventions and across professional groups

	All counsellors	Psychologists	Social workers	Nurses
Mastery of basic IPC skills Percentage of interventions in which all basic skills were mastered (%)	22/29 (81%)	11/13 (85%)	5/8 (63%)	6/8 (75%)
Percentage of professionals mastering all basic skills in all their interventions (%)	14/21 (67%)	7/9 (62%)	3/6 (50%)	4/6 (60%)
Mastery of IPC techniques 1. Clarification, summaries, questions - percentage of interventions with mastery - percentage of professionals with mastery in all their interventions	28/29 (97%) 20/21 (95%)	13/13 (100%) 9/9 (100%)	8/8 (100%) 6/6 (100%)	7/8 (88%) 5/6 (80%)
2. Communication analysis - percentage of interventions with mastery - percentage of professionals with mastery in all their interventions	19/29 (66%) 13/21 (62%)	11/13 (85%) 7/9 (78%)	4/8 (50%) 2/6 (33%)	4/8 (50%) 4/6 (67%)
3. Decision analysis - percentage of interventions with mastery - percentage of professionals with mastery in all their interventions	11/29 (38%) 4/21(14%)	5/13 (38%) 2/9 (22%)	2/8 (25%) 1/6 (17%)	4/8 (50%) 4/6 (77%)
4. Role play - percentage of interventions with mastery - percentage of professionals with mastery in all their interventions	4/29 (14%) 3/21(14%)	2/13 (15%) 1/9 (11%)	1/8 (12%) 1/6 (17%)	1/8 (12%) 1/6 (17%)
Mastery of overarching IPC competence 1. Ability to adapt core IPC strategies to the client's individual needs - percentage of interventions with mastery - percentage of professionals with mastery in all their interventions	28/29 (97%) 20/21 (95%)	13/13 (100%) 9/9 (100%)	8/8 (100%) 6/6 (100%)	7/8 (88%) 5/6 (83%)
2. Ability to balance being focused and maintaining the therapeutic alliance - percentage of interventions with mastery - percentage of professionals with mastery in all their interventions	28/29 (97%) 20/21 (95%)	13/13 (100%) 9/9 (100%)	8/8 (100%) 8/6 (100%)	7/8 (88%) 5/6 (83%)
3. Ability to establish balance between activity and non-directive exploration - percentage of interventions with mastery - percentage of professionals with mastery in all their interventions	29/29 (100%) 21/21 (100%)	13/13 (100%) 9/9 (100%)	8/8 (100%) 6/6 (100%)	5/5 (100%) 6/6 (100%)

Comparison analysis: BPS counsellors' experiences of delivering depression intervention in the school

On the basis of qualitative, thematic content analysis, four broad themes emerged: 1. the perceived difference between professionals' routine, traditional SHWS work and doing a clinical intervention for depression was experienced consistently as a difficulty; 2. difficulties in identifying and assessment of depression, and taking up issues related to mood with the adolescent (e.g., using measures, talking about depression); 3. difficulty in delivering a mental health intervention without a method or supervision; 4. difficulty in understanding the relevance of meeting adolescents repeatedly, and repeatedly assessing and monitoring their mood.

4. DISCUSSION

The main results of this study are summarized as follows. On the organizational level, we found that in Finnish secondary schools, depressive adolescents presented with their main problem being an interpersonal/familial issue as often as an emotional problem. Adolescents' pathways to intervention seemed narrowly defined, cross-professional referrals were uncommon and delivery rates of structured interventions, such as IPC-A, were low. However, they were still lower for the brief psychosocial support intervention delivered without a structured method or methodological support. On the individual/professional level, school professionals reported difficulty in identifying adolescents with mild/moderate depression, and lack of time allocated to mental health work as roadblocks to intervention delivery. As facilitators they had to rely on future improvements in health checks and communication with teachers and school staff to identify depressive youth. As evaluated by the IPC-A delivering professionals themselves and their clinical supervisors, clinical competence assessed during first interventions seemed to have developed relatively well across the professional groups, however, some IPC-A-specific procedural skills remained relatively poorly mastered.

Looking at the organization level results more closely, we found that the SHWS professional groups operated rather independently of each other in their mental health work. School nurses acted as initiators of referrals to help adolescents with their mental health needs. The distinct professional roles and the modest level of delivered IPC-A interventions were both expected, on the basis of Finnish healthcare data and prior development projects aimed at advancing mental health work in primary level services (19,28,35). It was predicted that routine delivery of systematic mental health interventions would be relatively infrequent in the SHWS. Thus, the role of secondary services' mental health professionals was considered an important element in the implementation model, supporting not only IPC-A interventions, but also assessment of mental health and mental health work in general in the schools.

This finding is accordant with experiences and service development initiatives from several countries, reflecting the important role of public mental health providers as supportive partners for the professionals who are delivering school-based mental health work (13,36). Of note, the rate of delivery of BPS interventions was still lower than that observed for IPC-A, suggesting that factors intrinsic to the clinical method may not wholly, or even primarily, account for the low delivery levels for IPC-A.

Although the total number and the rate of delivered IPC-A interventions per professional were not high, figures were relatively even across the professional groups, supporting the notion of IPC-A as a potentially suitable and feasible intervention for use by several professional groups in primary level services (37). Furthermore, observed, equal rates of delivered IPC-A interventions across professional groups is accordant with the initial aim of the implementation project, and with the broader, national aim to widen access to early intervention (24,38). The significance of pre-implementation collaborative activities for a successful mental health intervention has been noted in school implementation programmes, for example, in enhancing organizational engagement (39). In this project, discussions and negotiations between the school professional lead and implementing organization before the launch of detection workshops and clinical intervention training.

The two most frequently presented roadblocks to identification and intervention delivery involved perceiving the intensity of an adolescent's symptoms as being not accordant with IPC-A (either too mild, too severe), and perceived difficulty in assessment of depression. Most frequent reported facilitators were reliance on nurse health checks, or on the new, comprehensive health screening tool being implemented for identification purposes. These findings may reflect effects of a relatively sectorized organization of mental health work. In a review of implementation of school-based mental health services, Richter and colleagues (40) identified drawbacks in internal collaboration between different administrative sectors and professional groups (i.e., social care providers, healthcare providers) as one main challenging factor for mental health intervention implementation.

Regarding mastery of IPC-A interventions, all professional groups were able to deliver IPC-A, and produced it at even, but low rates of roughly one intervention per school year. IPC-A counsellors were evaluated as having acquired most IPC-A delivery skills by the end of delivering their first interventions. However, they experienced lack of mastery in skills to certain specific IPC-A techniques, such as role play and decision analysis. The counsellors experienced IPC-A as broadly beneficial for both the adolescents and themselves as professionals. Also, supervisors' competence ratings indicated that more procedural IPC-A technique skills were not mastered/used in counsellors' first interventions. A large proportion of counsellors did not master role play or decision analysis, and 34% did not master communication analysis.

The clinical delivery of IPC-A as perceived by the trainee counsellors themselves showed relatively encouraging rates of the individual skills they perceived mastering in their interventions. The assessed interventions were the very first they delivered. As IPC was originally developed to be used in primary level services by various professional groups, the results can be interpreted to support the applicability of the method accordingly (37). However, the counsellors often reported specific IPC-A technique skills not mastered. Even though all skill areas were included and practised during the clinical training, the specific IPC-A technique skills such as role play and decision analysis may, being structured and procedural, differ from more traditional discussion-based counselling and supportive work in SHWS than other IPC skills, and require more time to learn.

Practical skill rehearsal during supervision, using role play and videos may represent an effective way to enhance skills acquisition. Unfortunately, such teaching methods couldn't be utilized in this study. Many supervisors, although clinically experienced, were providing their first supervisions (i.e., they were in the middle of their own learning process). Overall, the results stress the need for assigning sufficient time for practice of skills for both trainee counsellors and supervisors. It is likely that procedural, experiential skills training practices, as mentioned above, have rarely been part of these professionals' own background training, or even their psychotherapeutic training (41).

The supervisors' evaluations of the IPC-A counsellors' skills presented an approximately similar picture to that found from counsellors' self-evaluation of their skills. As the evaluated interventions were the first interventions by the counsellors, mastery of all skills couldn't be expected to be complete. Regarding training, a question arises of how to build and maintain method supervisors' competence across all relevant areas, including maintenance of their IPC-A counselling competence (which require their own, active clinical practice), adding general teaching skills and skills for teaching skills. Regarding method supervisors' training, setting and following specific learning objectives for method supervision, and training and practicing such supervisory skills are considered crucially important in psychotherapy training research (42).

As the Finnish mental health policy is moving towards promoting dissemination and implementation of psychosocial and psychotherapeutic treatments, there is a need to develop sustainable, competency-based training programmes for evidence-based psychotherapies for practitioners, method supervisors and trainers. A closely related need is to maintain such programmes by assigning and funding training organizations which possess relevant methodological, clinical and scientific competence in the planning of the programmes, to provide the training, to further develop the programmes and to conduct clinical epidemiological research. Training conducted in a way which allows the development of clinical competence will turn provide effective interventions, given that the time resources for learning and teaching are realistically planned.

This study has some notable limitations. The main limitation is that the number of participants in the subgroups are small. Thus, for example, group comparisons between professional groups should be considered tentative. In some survey data, participation rates were relatively low.

The strengths of this study include that we present multi-method, systematically collected data from a study conducted in real-life conditions of the public healthcare system, involving largely participants who were involved in their normal full-time occupation. This adds to the ecological validity of the study. We were able to recruit an active comparison group. Experiences of providers of the comparison intervention offer a unique angle to school healthcare.

CONCLUSION

Our results lend further support to the training and use of IPC-A as a potential clinical intervention for treating adolescent depression by professionals working in Finnish school health and welfare services and in primary level settings. However, the observed low rates of completed interventions in the schools raise the question of whether the observed organizational factors, such as school professionals' experienced difficulties in the detection of depression and clinical assessment, narrowly defined pathways to intervention and their multiple role assignments might cause barriers to the delivery of interventions. In spite of school professionals' perception of IPC-A largely as a beneficial method, development of specific intervention competence should be allowed time, and a realistically negotiated time resource should be available for the trainees to learn clinical skills in the context of clinical supervision.

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BRIEF, DEVELOPMENTALLY ORIENTED COGNITIVE THERAPY FOR ADOLESCENTS WITH SOCIAL ANXIETY DISORDER: A CASE SERIES FROM A PILOT EVALUATION

ABSTRACT

Background: Social anxiety disorder (SAD) is one of the key mental health disorders of adolescence. Due to the mental health challenge across the globe in this age group, a growing acknowledgement of the need to effectively identify and treat incipient SAD at an early stage has been presented in many countries. Aim: The aim of this study was to examine the accuracy of detection of SAD in schools, using a detection toolkit and a professional operating model in which school psychologists acted in a consultant/coordinator role. The second aim was to gain initial data on usefulness and feasibility of brief, developmentally oriented cognitive therapy (DOCT-SAD) for adolescents with SAD. Methods: Ten adolescents, identified from upper secondary schools with a mean age of 13.8 years, participated in DOCT-SAD. Accuracy rate of detection in the school was calculated as the proportion of adolescents who had interview-confirmed SAD and completed the treatment out of those altogether referred from schools. Usefulness of DOCT-SAD was assessed with pre- post-treatment changes in symptoms of SAD (SPIN), mood (PHQ-9) and in adolescents' wellbeing (YP-CORE), and by evaluating change in DSM-5 diagnostic status. Feasibility was evaluated by semi-structured interviews of adolescents and their parents. Results: Use of the SAD detection toolkit and the professional operating model yielded a 71% accuracy rate for school-based identification of adolescents who had SAD, and who eventually completed treatment. DOCT-SAD showed promise as treatment of SAD: adolescents' symptoms of SAD and depression decreased markedly pre-post effect sizes being 1.6 and 1.4 respectively, adolescents' wellbeing improved, and a 60% rate of diagnostic remission, comparable to established treatments, was found. Feasibility of DOCT-SAD appeared good or excellent for adolescents and parents. Discussion: As incidence of SAD is high in adolescence, methods for detection and treatment are needed. The 10-session DOCT-SAD shows promise for further development as a treatment for adolescent SAD. Conclusion: This case series found support for using a structured detection model, and for treatment of SAD using a brief cognitive therapy program among adolescents identified in the school.

KEY WORDS: SOCIAL ANXIETY DISORDER, ADOLESCENTS, COGNITIVE THERAPY, COGNITIVE BEHAVIOURAL THERAPY, DEVELOPMENTAL FACTORS, FEASIBILITY, STUDY, SCHOOL

1. INTRODUCTION

Social anxiety disorder (SAD) is an anxiety disorder characterized by marked fear and distress in one or multiple social situations. It typically runs a chronic course left untreated (1,2). The central fear in SAD is the fear of being negatively and critically evaluated by others (1). The fear of negative evaluation and its consequences causes intense anxiety, typically leading to either complete avoidance of feared social situations or significant change in individual's behaviour (i.e., dysfunctional safety behaviours) in these situations (3,4).

Research quite systematically indicates that SAD develops in adolescence, the peak period of onset is between 13 to 15 years of age (5-8). Thus, it is one of most frequent mental health challenges for this age group, affecting around 3-9% of adolescents (9). In Finland, the 12-month prevalence of SAD in adolescents is between 3 to 4% (10). SAD frequently leads to impairment in functioning in social relationships and in school, and is associated with an elevated risk of depression and educational underachievement in adulthood (11,12). Comorbidity is frequent among adolescents with SAD, most common comorbid disorders include anxiety and depressive disorders, present in 20 to 60% of youths with SAD (9,10,13-15).

Adolescents with social anxiety and SAD report significant decrease in academic and social functioning (15-17). The onset of SAD during adolescence is particularly detrimental, due to the importance of peer relationships, which is greater than in any other stage of life (18). Due to its linkage with several developmental changes of adolescence, it can be considered as one of the key mental health disorders of this age group (19). Calls for implementation of early, developmentally valid and effective service models and interventions for the most prevalent youth disorders have been presented in several countries (20).

Given the high incidence of SAD in adolescence, it is not surprising that a greater number of psychotherapeutic treatment models have been developed specifically for SAD than for other anxiety disorders in this age group (21). Both group and individual disorder-specific cognitive behavioural treatment models have been presented (22). Several controlled studies show the efficacy of disorder-specific cognitive behavioural therapy (CBT) compared with waiting list or attention control (23,73,79). To the best of our knowledge, there are few direct comparisons between disorder-specific and transdiagnostic CBT. Notably, Ingul (23) performed a comparison between individual cognitive therapy and group transdiagnostic CBT, finding individual cognitive therapy more effective. In addition, research shows that transdiagnostic treatments are not as efficient for SAD relative to other anxiety disorders (24). *Table 1* presents a summary of current psychotherapies showing effect for treatment of adolescent SAD.

Table 1. Psychotherapy trials for adolescent SAD

Study	N	Age	Intervention	Control	Sessions	Comparison	Measure	Effect size	Follow-up
Hayward[73] 2000	35	14–17 (15.8)	CBGT-A (G)	WL	16x90min	CBGT-A>WL	ADIS-C/P	- **	No difference 12 mos
Garcia-Lopez[74] 2002	59	15–17 (15.9)	CBGT-A (G)	WL	16x90 min / 14 wks	CBGT-A=WL	ADIS-C/P	0,94[a]	Gains maintained 12 mos
			SET-A (G)	WL	29x /17 wks	SET-A>WL	ADIS-C/P	1.46[a]	Gains maintained 12 mos
			IAFSG (G)	WL	12 x 90 min / 12 wks	IAFGS>WL	ADIS-C/P	1,3[a]	Gains maintained 12 mos
Baer[75] 2005	12	13–18 (15.5)	Mod. SET-C (G)	WL	12x / 3 mos	SET-C>WL	SPAI	0,85[a]	-
Masia-Warner[76] 2005	35	13–17 (14.8)	SASS (G)	WL	12 +12x / 12 wks	SASS>WL	ADIS-C/P	2,4[a]	Gains maintained 9 mos
Masia-Warner[77] 2007	36	14–16 (15.1)	SASS (G)	AC	12 + 12x / 3 mos	SASS>AC	ADIS-C/P)	1,9[a]	Gains maintained 6 mos
Herbert[78] 2009	73	12–17 (15.0)	G-CBT (G), I-CBT	PST	12x / 3 mos	G-CBT= I-CBT=PST	SPAI-C	-*	No difference 6 mos
Tillfors[79] 2011	19	15–21 (16,5)	Internet CBT	WL	9x/ 2 mos	Internet CBT>WL	LSAS-SR	1,28[a]	Gains maintained 12 mos
Ingul[23] 2014	57	13–16 (14,5)	CBTI, CBTG (G)	AC	12x50min, 10x90min	CBTI > CBTG, CBTI >AC, CBTG =AC	SPAI-C	2,07[b]	Gains maintained 12 mos
Masia-Warner[44] 2016	77	14–17 (15,4)	P-SASS (G)	AC	12x/3 mos	P-SASS>AC	ADIS-C/P	0,67[a]	Gains maintained 5 mos

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Study	N	Age	Intervention	Control	Sessions	Comparison	Measure	Effect size	Follow-up
			C-SASS (G)	AC	12x/3 mos	C-SASS>AC	ADIS-C/P	0,69[a]	Gains maintained 5 mos
			P-SASS (G)	C-SASS (G)	12x/3 mos	P-SASS=C-SASS	ADIS-C/P	-*	-*

Active treatments: The CBGT-A= Cognitive-Behavioural Group Therapy for Adolescents, SET-A= Social Effectiveness Therapy for Adolescents, IAFSG= Intervención en Adolescentes con Fobia Social Generalizada (The Therapy for Adolescents with Generalized Social Phobia), SET-C= Social Effectiveness Training for Children and Adolescents, SASS= The intervention, Skills for Academic and Social Success, G-CBT= Group Cognitive-Behaviour Therapy, I-CBT= Individual Cognitive Behaviour Therapy, CBTI= individual cognitive therapy using cognitive model by Clark and Wells, CBTG= group cognitive behavioural therapy, C-SASS= SASS delivered by school counsellors, P-SASS= SASS delivered by psychologists
Controls: WL= Waitlist, AC=Attention control, PST= Psychoeducational-Supportive Therapy
Primary outcome measures: SPAI-C= Social Phobia and Anxiety Inventory for Children, SPSQ-C= Social Phobia Screening Questionnaire, ADIS-C/P= Anxiety Disorder Interview Schedule, Child and Parent Version. LSAS-SR=Self-report version of the Liebowitz Social Anxiety Scale
a= between treatment and control group, b= CBTI condition within group (pre-post) effect size, G=Group, ES=Effect size, cohen's d: d = 0.2 small effect size, 0.5 medium effect size, 0.8= large effect size, *=no significant difference, **effect size not reported

Disorder-specific group treatments for SAD typically include components such as psychoeducation, cognitive restructuring, anxiety management, situational exposure, group practice and social skills training (SST) (25-27). Group treatments share elements included in CBT treatments for anxiety, but stress disorder-specific psychoeducation, and typically add practices enhancing interaction between participants as in-session exposures. Inclusion of SST in the programmes is based on research indicating that adolescents with SAD may lack social skills, such as making eye contact, not noting physical posture, or using atypical vocal tone or volume (28).

The individual disorder-specific SAD treatments for adolescents have mainly been based on the cognitive model of SAD (3), which emphasizes the role of negative beliefs and images which are activated as the individual enters a social situation, are active during the situations, and during the post-event processing of the situations. The model lists three key maintaining factors of SAD symptoms: excessive self-focused attention, use of internal information to predict how one appears to others and engagement in a broad range of in-situation safety behaviours. A treatment model based on the cognitive model (CT-SAD) differs in many aspects from CBT models, its key components being dropping of safety behaviours, direction of the attention outward and behavioural experiments (29). The CT-SAD has gained strong support for efficacy in adults (30). The cognitive model has also spurred research to test whether empirical findings behind the cognitive model, originally found in adult populations, are found in adolescents (4,12,31). In 2016, Leigh and Clark adapted the CT-SAD for adolescents (CT-SAD-A) and showed promising results of feasibility for the treatment in a pilot case series (32).

Although the available treatments for adolescent SAD already include developmental modifications, it has been suggested that a more systematic orientation to age-phase-specific developmental risk factors for psychopathology might enhance treatment efficacy (21). From the perspective of developmental psychopathology, interaction between development of social cognition, change in social investments, emotional salience of peer relationships and the increase of SAD symptoms may call for even more developmentally oriented treatments for adolescent SAD (19,33). The need to establish and maintain a positive self-image, and to avoid excessive emotional comparison to others and self-criticism, seems important in adolescence (34,35). Experienced self-deficiencies are central to SAD (36). Socially anxious adolescents' frequent experiences of themselves as weak or not normal may lead to construction of global, negative self-evaluations (37).

From the perspective of efficient use of public resources, clinical interventions should be implemented in a way to ensure their accurate targeting of the group in which the greatest gains are to be found (38). Accordingly, it is important to pair interventions with credible tools and practices for identification of the valid target group, to ensure a smooth and rapid route to intervention (39). From a clinical viewpoint, the feasibility of the treatment model for its target group and for the treatment providers needs to be ascertained (40). For adolescents, treatment characteristics such as brevity, suitable treatment tempo, consideration of motivation and using peer support may be important to consider (41).

In Finland, availability of brief psychotherapies for adolescents' anxiety disorders or SAD in primary level services or schools is low overall. There is an increasing strain on the secondary services (42). Given the high incidence and prevalence of SAD in adolescence, feasible and effective treatment models are needed. One open important question is how many applicable cognitive or cognitive behavioural SAD treatments, of 12-16 sessions or less, are available in adolescent clinical services (43) or in primary care services for them. There is some evidence supporting the use of individual and group adolescent SAD treatments in community mental health services (23) and for group treatments in schools (44).

To increase availability of treatment options for adolescent SAD, a brief cognitive therapy model, the Developmentally Oriented Cognitive Therapy for Social Anxiety Disorder in Adolescents (DOCT-SAD) was developed in Tampere University (45). DOCT-SAD is a 10-session, combined individual-group intervention (in Finnish: Tosi minä-treeni). It has been constructed of components included in effective individual and group treatments for SAD in adolescents (12,44). In addition, its methods integrate research findings on self-development, socio-cognitive development and on key transition processes in the adolescent period (46), and findings on the central role of negative self-experiences in SAD (36,47,48).

A service development project between Tampere University, University of Helsinki and City of Tampere was started in autumn 2021. A survey conducted in the school health and welfare services (SHWS) in Tampere indicated that a considerable number of adolescents in secondary upper schools, who were in contact with the SHWS, suffered from elevated symptoms of SAD. This was indicated by a score above the clinical cut-point on the Social Phobia Inventory (SPIN) (49). A research trial was launched to examine the feasibility and usefulness of DOCT-SAD as a treatment for SAD in adolescents. The first DOCT-SAD treatments, described in this study, were conducted in April-May 2022.

The specific aims of the current study were to:

1. Examine identification of SAD in the school health and welfare services, using a brief detection checklist and a professional operating model for enhancing detection and coordination.
2. Measure the usefulness of DOCT-SAD by examining pre- to post-treatment changes in symptoms of SAD and depression, in wellbeing, and changes in severity of SAD and diagnostic status.
3. Evaluate the feasibility, acceptability and perception of change experienced during DOCT-SAD by adolescents and their parents.

2. MATERIALS AND METHODS

2.1. PARTICIPANTS

Participants were students from five upper secondary schools in Tampere. At baseline assessment mean age of participants was 13.8 years (SD = 0.92). Nine (90%) were girls, one (10%) was a boy. Adolescents reported having suffered symptoms of social anxiety for a little over two years prior to treatment (mean 2.3 years, SD = 0.82). All participants had had previous contact with the school health and welfare services, either with school psychologist, nurse or social worker. Two participants reported having been previously treated or evaluated in child/adolescent psychiatric services. None of the participants had been previously treated for SAD. All participants were Caucasian, and 90% had Finnish as their native language. Of the participants, four (40%) had a comorbid depressive disorder and five (50%) had a comorbid anxiety disorder. Baseline characteristics are shown in *Table 2*.

Table 2. Baseline characteristics of the participants

Baseline characteristics	GROUPS 1 & 2 *N = 10*
Age (Mean [SD])	13.8 (0.92)
Gender	9 (90%) females
Pre-treatment scores (Mean [SD])	
SPIN	42.5 (10.96)
PHQ-9	10.1 (3.41)
YP-CORE	16.1 (3.81)
CSR	5.4 (1.08)
Comorbid disorders	
Dysthymia Depression NOS Any depressive disorder	2 2 4
Generalized anxiety disorder Anxiety disorder NOS Specific phobia Any anxiety disorder	2 1 2 5

2.2. PROCEDURE

This study reports first results from a pilot trial of DOCT-SAD for treatment of adolescents with SAD identified by school health and welfare services. The DOCT-SAD interventions were conducted at the teaching and research clinic at Department of Psychology, Tampere University. Participants were recruited from the upper secondary schools of City of Tampere. The two therapists were graduate major psychology students, who received roughly five days of theoretical and clinical training during winter 2021-2022, followed by combined weekly method training and clinical supervision during the intervention in spring 2022 by an experienced cognitive therapy trainer.

A procedure for detecting adolescents with SAD from the schools was agreed between the project leaders, researchers and key professionals from the SHWS. A detection toolkit for SAD, consisting of: 1. the SPIN questionnaire, 2. the treatment suitability evaluation checklist (TSEC), and 3. a short psychoeducation material targeted at differentiation between the core symptoms of anxiety and depression, was jointly prepared by the project group. The toolkit was sent electronically to all SHWS professionals.

The project group agreed on setting a professional operating model for detection, coordination and treatment referral in the schools. Five school psychologists were named as consultants for the detection of SAD (i.e., they were available for other SHWS professionals' queries regarding identification of SAD), and as coordinators in the referral process from the SHWS to the clinical treatment (i.e., they coordinated and monitored the flow of referrals in collaboration with the research group).

All SHWS professionals were given a short, 1-hour live/remote training on the detection toolkit for SAD, and the remote presentation was recorded for later access. The five consulting/coordinating school psychologists participated in the monthly project group meetings, and to the development of the toolkit, also acquiring advanced knowledge of the clinical assessment of SAD. They also took on the task of actively bringing up SAD screening and assessment issues with other SHWS professionals in SHWS meetings. Thus, the professional operating model strengthened the use of the detection toolkit.

The detection and screening process of the study consisted of three steps:

First stage: The SHWS professionals, briefly trained in the use of the detection toolkit, identified adolescents using the toolkit shared electronically with them. They were instructed to consult the five consultant/coordinator school psychologists in queries about identification, and to prepare a possible referral with them.

Second stage: For the adolescents that were deemed positive (i.e., fulfilling treatment suitability evaluation checklist criteria) in the school, following a discussion with consultant/coordinator psychologist, a contact to research group was taken. The researchers then conducted a mobile phone check with adolescent and her/his parent, in which the intake criteria were again reviewed. When criteria were met, or deemed very likely to be fulfilled, a clinical interview was arranged.

Third stage: The adolescents and their parent(s) were met for a full diagnostic interview at the university. The fulfilment of DSM-5 SAD criteria (1) was assessed, and presence of all comorbid anxiety and depressive disorders was assessed. For those who fulfilled criteria for primary DSM-5 SAD, this visit was also the first DOCT-SAD session. However, if the full criteria for primary SAD, or other intake criteria were not met, the adolescent did not proceed to treatment, the family received feedback and advice, and the following referred adolescent was evaluated.

The study was reviewed and approved by the Regional Ethics Committee of the Expert Responsibility area of Tampere University Hospital.

2.3. INTERVENTION: DOCT-SAD

The DOCT-SAD is composed of four individual sessions and six group sessions. The first two individual sessions include developmentally tailored and normalizing assessment with the adolescent, facilitating engagement, SAD and intervention psychoeducation, and a thorough individual and historical case formulation according to cognitive model. The parent attends the first session. The latter two individual sessions include working with traumatic memories using memory rescripting, and doing a behavioural experiment with a research assistant, unknown to the adolescent. The aim is to help the participants eliminate their safety behaviours and to engage in spontaneous interaction with others. These components follow the theoretical principles and practical approaches of the cognitive model of SAD and the CT-SAD-A treatment programme (3,50).

The six group sessions, in groups of five-six participants, involve adolescents to participate actively in exercises and behavioural experiments in group sessions to gain maximum benefit from the intervention. Attention training, experiential exercise to demonstrate the effects of self-focused attention and safety behaviours, adapted as group/pair training and behavioural experiments, are drawn from the CT-SAD-A model. Behavioural experiments are done in-session, with interaction between partners, and outside the office. They are planned individually according to individual conceptualization (3,50).

Throughout the programme, normalizing psychoeducation material is given on cognitive, affective and behavioural aspects of SAD according to CT-SAD-A, however, this is enhanced by a specific focus on adolescents' self-concept. The development of self-concept is presented, and related issues are reviewed (51,52). A specific regard is given to associations between adolescents' SAD symptoms and their experienced self, with their core fears being linked to perceived flaws and deficiencies related to their self-experience, as presented in the theoretical model of David Moscovitch, presented in 2009 (36). The key self- and other beliefs are included in cognitive conceptualizations of symptom formation, and construction of behavioural experiments is informed by the identified, negative self-related beliefs. As a continuum of self-development, the adolescents are encouraged to engage in practices where they abandon the hiding/shelter-seeking self (e.g., self-concealment) related to heightened, developmental dependency on peer opinion, represented by excessive tendency to safety behaviours, and progress to repeated peer group practices where they rehearse being their authentic, true self in various spontaneous interactions (36,51,52).

In the final stage after imagery work on traumatic memories, a brief practice on self-compassion is added, following prior psychoeducation on progressing from self-concealment, to being their authentic self, and last to being their authentic self who is supportive and compassionate towards their own difficulties and anxiety (46,47).

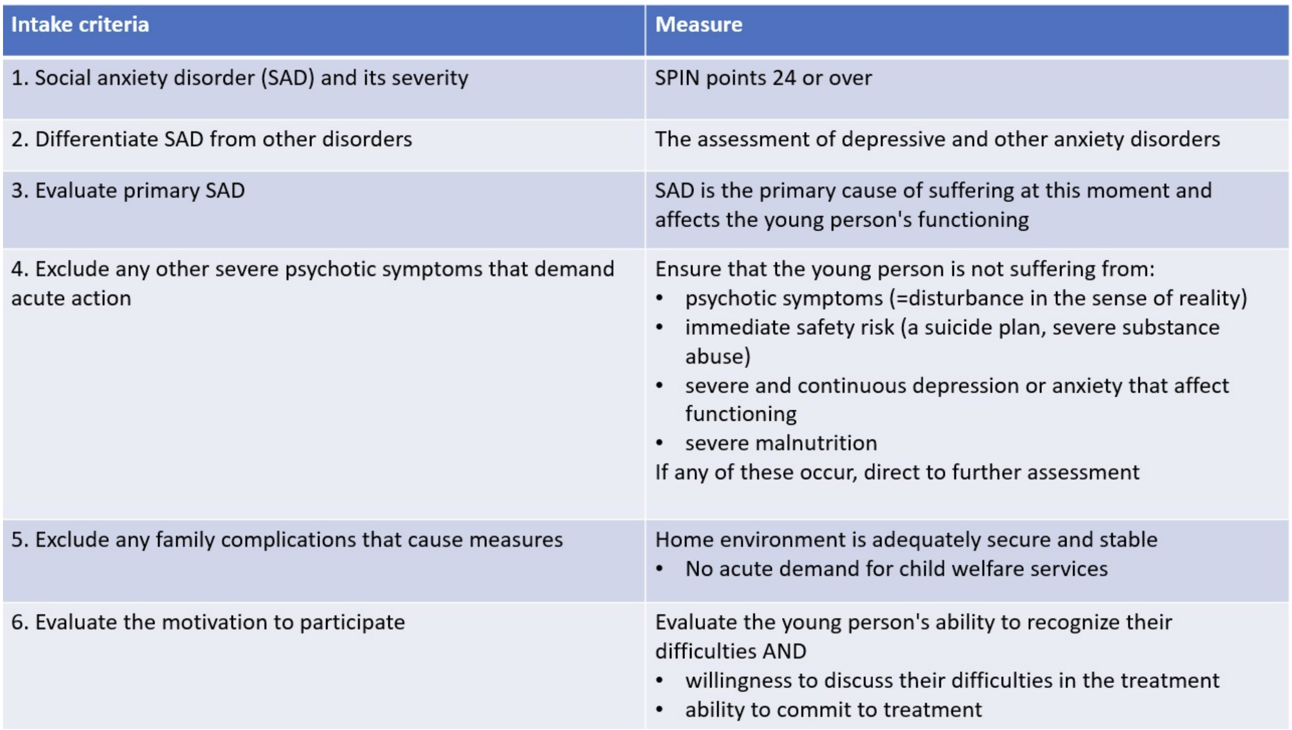
2.4. MEASURES

Detection toolkit for SAD in schools

The detection toolkit for SAD in schools was modelled on and further developed from previous instruments for detection of anxiety and depression, and for evaluation of treatment suitability among adolescents in schools or in primary level services (39,53). The toolkit comprises three parts: the SPIN questionnaire (49), the TSEC, and a short 1-page picture presentation material targeted at enhancing differentiation between core symptoms of anxiety and depression. The toolkit material was distributed to SHWS professionals electronically.

The instructions for SHWS professionals stated the use of the TSEC in the identification process. The first task on the checklist is to use the SPIN as a screen with the requirement of adolescent scoring above the cut-point (24 points or more). The checklist then presents five additional criteria related to the treatability of the problem to be evaluated: differentiating SAD from other disorders, evaluation of whether SAD is the primary problem/disorder, excluding severe mental health disorder requiring acute measures, excluding severe family or social condition endangering development and requiring acute measures and evaluating the motivation to participate in the treatment. The TSEC is presented in *Figure 1*.

Figure 1. The treatment suitability evaluation checklist



Intake criteria	Measure
1. Social anxiety disorder (SAD) and its severity	SPIN points 24 or over
2. Differentiate SAD from other disorders	The assessment of depressive and other anxiety disorders
3. Evaluate primary SAD	SAD is the primary cause of suffering at this moment and affects the young person's functioning
4. Exclude any other severe psychotic symptoms that demand acute action	Ensure that the young person is not suffering from: • psychotic symptoms (=disturbance in the sense of reality) • immediate safety risk (a suicide plan, severe substance abuse) • severe and continuous depression or anxiety that affect functioning • severe malnutrition If any of these occur, direct to further assessment
5. Exclude any family complications that cause measures	Home environment is adequately secure and stable • No acute demand for child welfare services
6. Evaluate the motivation to participate	Evaluate the young person's ability to recognize their difficulties AND • willingness to discuss their difficulties in the treatment • ability to commit to treatment

The simple psychoeducational picture illustrated the difference between the experience of anxiety (core experience fear or worry) and the experience of depression (core experience sadness/low mood, apathy, hopelessness) and was used to facilitate differentiation between different depressive and anxiety disorders.

Success of the school-based detection of SAD, and the combined evaluation of suitability for treatment, was studied by calculating an accuracy rate. It was calculated as the proportion of adolescents who were confirmed having primary SAD in the clinical interview, and who also completed the DOCT-SAD treatment, out of all adolescents who were referred from school to the treatment.

Outcome measures

Primary outcome measure: Social Phobia Inventory (SPIN)
The SPIN is a 17-item self-report measure of SAD symptoms with good test-retest reliability, internal consistency, and convergent and divergent validity to assess SAD. SPIN assesses three symptom areas of SAD as defined in the DSM-IV and DSM-5: avoidance behaviours, physical symptoms and social fears during previous two weeks (49). SPIN has been found a reliable and valid measure of SAD among Finnish adolescents; in this study we defined the symptomatic remission according to SPIN as under 24 points, which is the clinical cut-off based on earlier research (54).

Patient Health Questionnaire (PHQ-9)
PHQ-9 is a self-report measure that is widely used for major depressive disorder and has acceptable diagnostic properties (55). PHQ-9 demonstrates similar sensitivity and specificity in adolescent and in adult samples (56).

The Young Person's CORE (YP-CORE)
The self-report 10-item YP-CORE has been demonstrated to have good internal and test-retest reliability (57,58). This instrument has shown adequate psychometric properties as a measure of wellbeing among Finnish adolescents (59).

The diagnostic interview
The diagnostic evaluation was made during the clinical interview at first face-to-face visit. Both the adolescents and their parents were interviewed. Symptoms of SAD according to DSM-5 (1) were systematically evaluated by the researchers. Presence of other comorbid anxiety or mood disorders were also systematically evaluated. The DSM-5 diagnoses were assigned accordingly. A remote video

interview of adolescents and parents was conducted after the last session in the context of the feasibility interview of parents (see below). In two of ten cases both parents participated in the interview, in eight cases the mother participated.

Severity of SAD

The severity of participants' SAD was evaluated with the ADIS-5 clinician severity rating scale (CSR) (60), the DSM-5 version, which defines severity of symptoms by evaluation of the level of anxiety symptoms and the functional impairment associated with symptoms. The CSR uses a 0-8 scale: the score of 4 points indicates threshold for clinical SAD, 4-5 moderate level SAD, 6-7 severe SAD, and 8 very severe SAD.

The feasibility interview

The feasibility interview was informed by the Elliot Change Interview (61), used in a modified form in a previous Finnish intervention trial among secondary school adolescents (62). It was further developed for this study. As part of this interview adolescents were asked about:

1. their experienced wellbeing after the intervention. Adolescents rated their general wellbeing as a numerical value on a 0-10 scale. Thereafter they were asked to give a free, open verbal description in their own words of their wellbeing after the intervention. (Q1)
2. the impact of DOCT-SAD on their wellbeing. The adolescents were asked whether they perceived that the intervention had had an influence on their wellbeing, and the direction of the influence as either positive or negative. Thereafter they were asked to give a free, open verbal description in their own words of how they perceived the intervention had affected their wellbeing. (Q2)
3. their general experience of the intervention as a numerical value on a scale 0-10. (Q3)
4. their open-ended verbal account of the intervention, and their perception of the suitability of the treatment for them (Q4)
5. their experience of the referral process from school to treatment, including their general evaluation of the process on a scale of 0-10, perceived fluency of the process on a scale of 0-10, and their open responses as to whether something should have been done differently (yes/no, if yes, what?). (Q5)
6. their perception of the assessment process at school on a scale of 0-10. (Q6)
7. their perception of the trial assessment process at the University clinic on a scale of 0-10. (Q7)

Questions Q1-Q7 were also presented to adolescents' parents at post-intervention. They were instructed to answer based on their perception of the adolescent.

In addition, treatment completion rates and session attendance rates were calculated as indicators of feasibility of the treatment.

2.5. STATISTICAL ANALYSES

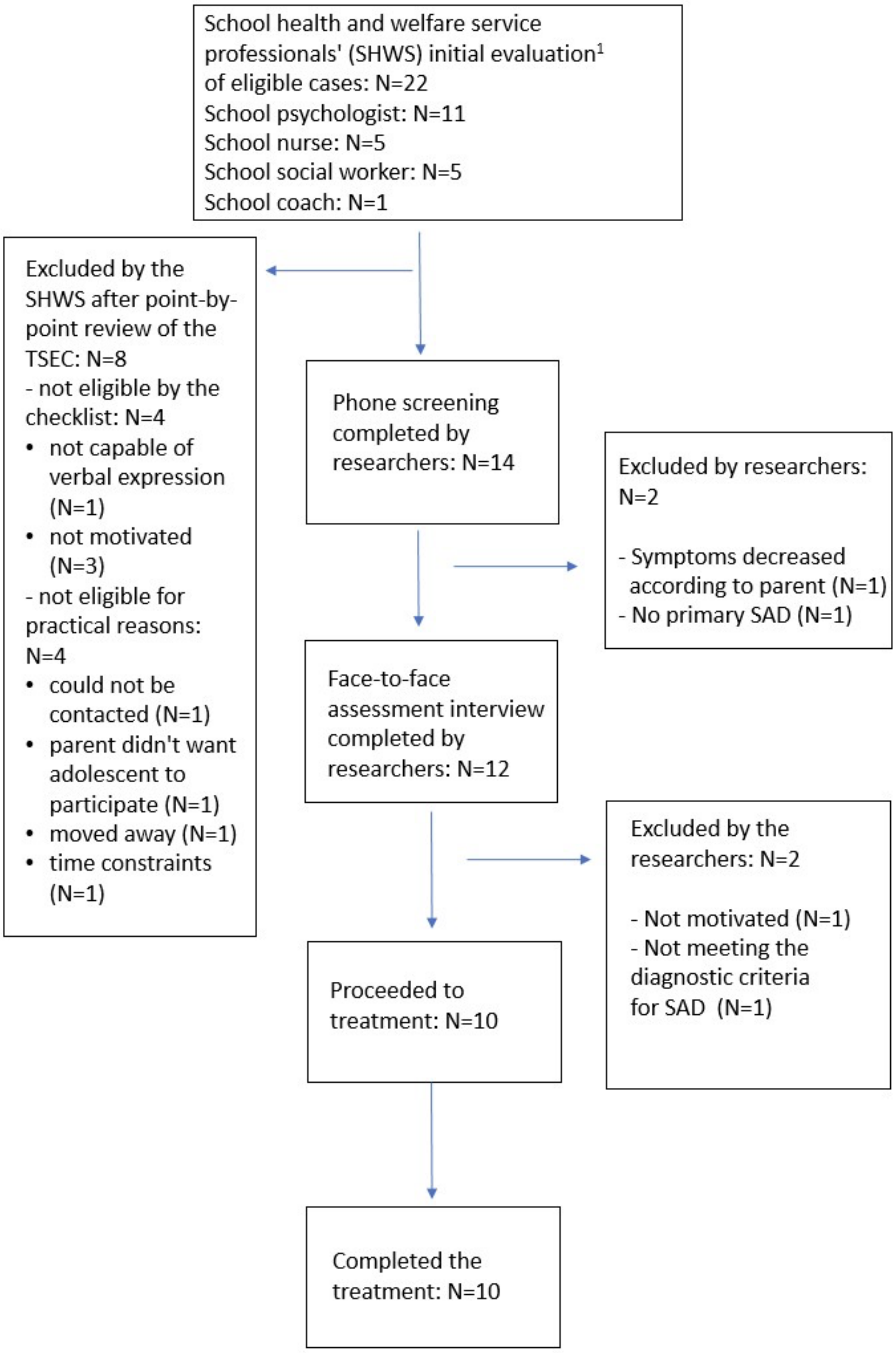
Data were analysed with IBM SPSS statistics version 28. The data were not normally distributed due to small sample size ($n = 10$), therefore the Wilcoxon signed rank test was used, which is the non-parametric alternative to paired samples t-test (63). Statistical methods included comparing means and calculating effect sizes (64). The feasibility questions were examined with basic descriptive analyses: frequencies, means and standard deviations. Responses to the open-ended questions that were given by at least three participants are presented.

3. RESULTS

3.1. DETECTION OF SAD AND SUITABILITY FOR TREATMENT IN THE SCHOOL

An accuracy rate for detection of SAD in the school was calculated as the proportion of adolescents who were confirmed as having primary SAD, and who also completed the treatment, out of all adolescents who were referred from school to the treatment. *Figure 2* presents the detection process step by step as a flow chart.

Figure 2. Detection of SAD in schools



[1] The SHWS professionals' general evaluation of adolescents suffering from social anxiety

The SHWS professionals initially evaluated that 22 adolescents might be eligible for treatment. Of these adolescents, eight (36%) were already excluded at the school; half after a point-by-point review of the treatment suitability evaluation checklist (*n* = 4) by SHWS professionals, and half because of practical obstacles for treatment (*n* = 4). This left 14 adolescents evaluated in the school being likely suitable for DOCT-SAD intervention, and they were referred to treatment.

In the researchers' mobile phone check, two adolescents were additionally excluded, representing 14% of referred adolescents. Twelve adolescents were invited to face-to-face research interview with their parents. In this interview, two adolescents, representing an additional 14% of the referred were excluded. Ten adolescents started, and each one completed the DOCT-SAD intervention. This resulted in accuracy rate of 71% (10/14) for detection of SAD in the school, using the detection toolkit and professional operating model in this project. Of the ten participants, six (60%) came from school psychologists, two (20%) from a school social worker and two (20%) from a school nurse.

3.2. SYMPTOM CHANGE IN PRIMARY OUTCOME MEASURES

SPIN.

We examined the pre- and post-test scores for the SPIN self-report measure as the primary outcome result. The pre- and post-test score change was –18.75 ($Z = -2.80$, $p = .005$, $d = 1.614$) (*Table 3*). At post-treatment, six out of ten (60%) adolescents reached remission according to SPIN.

PHQ-9.

PHQ-9 was used to detect depression symptoms in the participants. The pre- and post-test change was -4.3 ($Z = -2.558$, $p = .011$, $d = 1.395$).

YP-CORE.

Adolescents' general wellbeing was measured with the YP-CORE. The pre- and post-test change was –6.6 ($Z = -2.549$, $p = .011$, $d = 1.395$).

3.3. SEVERITY OF SOCIAL ANXIETY SYMPTOMS AND DIAGNOSTIC REMISSION

The CSR scores of the treated decreased from mean 5.4 to 3.1 ($Z = -2.68$, $p = .007$, $d = 1.497$). In the post-treatment diagnostic assessment, six out of ten (60%) adolescents with primary SAD at the start of the treatment were free of their DSM-5 SAD diagnosis. Of those in diagnostic remission, one participant (17%) had baseline anxiety disorder comorbidity, which was not found post-treatment, whereas of those not in clinical remission, all four had depression/anxiety comorbidity.

Table 3. Pre- and post-treatment change

	Pre-treatment Mean (SD)	**Post-treatment Mean (SD)**	**Pre-post change**	**P- value[1]**	**Effect size[2]**
SPIN	42.5 (10.96)	23.75 (9.28)	-18.75	0.005	1.614
PHQ-9	10.1 (3.41)	5.8 (3.52)	-4.3	0.011	1.395
YP-CORE	16.1 (3.81)	9.5 (6.1)	-6.6	0.011	1.395
CSR	5.4 (1.08)	3.1 (1.1)	-2.3	0.007	1.497

[1] Wilcoxon signed rank test

[2] Cohen's d

3.4. FEASIBILITY OF DOCT-SAD

The researchers conducted a post-treatment feasibility interview separately for the adolescents (*n* = 10), and for parents (*n* = 10+2) after the intervention.

Wellbeing after DOCT-SAD (Question 1)

The adolescents perceived their general wellbeing after DOCT-SAD as relatively good, mean of their ratings was 7.72 (*SD* = 1.15) on a scale of 0-10. The most frequent themes emerging from adolescents' verbal descriptions on their general wellbeing after the intervention could be classified into the following categories: 1. the treatment improved my wellbeing (*n* = 4), and 2. I became more open (*n* = 3).

Parents rated the general wellbeing of their child after the intervention according to their perception as good, mean of their ratings was 8.45 (*SD* = 1.22) on a scale of 0-10. Most frequent themes emerging from parents' verbal descriptions of their child were: 1. has become more open in communication overall/with parents (*n* = 9), 2. feels more joy (*n* = 6), 3. is more courageous (*n* = 5), 4. spends more with same-aged peers, recognises/communicates feelings more, is in a better mood/humour, takes more initiative in acting independently outside home, is more active in general (each, *n* = 3).

Impact of DOCT-SAD on wellbeing (Question 2)

Of adolescents, 9 out of 10 (90%) reported that the intervention had had a positive impact on their experienced wellbeing, one adolescent could not say whether it had a positive or negative impact. All ten parents (100%) perceived the DOCT-SAD as beneficial to their child's wellbeing.

The most frequent themes arising from the adolescents' open verbal descriptions of how the intervention had affected their wellbeing were: 1. I was able to become more open, treatment helped me to talk to other people (*n* = 5), and 2. it became easier to be in public spaces (*n* = 3).

The most frequent parents' descriptions of how they perceived the intervention had affected their child's wellbeing could be summarized into the following thematic categories: 1. the adolescent was being encouraged in the treatment (*n* = 4), 2. behavioural experiments and other practices were beneficial (*n* = 4), and 3. the adolescent acquired means to decrease avoidance (*n* = 3).

General perception of the DOCT-SAD as a treatment (Question 3)

Adolescents' general perception of the treatment was good, mean of their ratings was 8.1 (*SD* = 0.96) points on a scale of 0-10. Parents rated the treatment for their children excellent, mean of their ratings being 9.4 (*SD* = 1.45) points on a scale of 0-10.

Adolescents' and parents' experience of the treatment (Question 4)

The most frequent themes emerging from adolescents' open-ended descriptions of how they perceived the treatment and its suitability for themselves were: 1. the treatment was suitable for me overall (*n* = 4), 2. the treatment helped me to come out of my comfort zone (*n* = 4), and 3. coming to the sessions was important for me (*n* = 3).

The most frequent themes emerging from parents' descriptions of how they perceived the treatment and its suitability were: 1. the treatment was suitable overall (*n* = 5), 2. behavioural experiments and practices were suitable (*n* = 3), and 3. small group format was suitable (*n* = 3).

Referral process from the school (Question 5)

Adolescents' general perception of the referral process from the school to treatment was moderately good, mean of the ratings was 7.1 (*SD* = 2.6) on a scale of 0-10. Parents' general perception of the referral process was excellent, mean of their ratings was 9.8 (*SD* = 0.4) on a scale of 0-10. Adolescents perceived the fluency of the referral process as good, mean of the ratings was 7.9 (*SD* = 2.5) on a scale of 0-10. The parents rated the fluency of the referral process as excellent, mean of their ratings was 9.8 (*SD* = 0.4) on a scale of 0-10.

Eight out of ten (80%) adolescents suggested changes or improvements regarding the referral process. The most frequent comment made by the adolescents was that more information about the treatment could have been given (*n* = 4). All parents were pleased with the referral process, and none suggested changes.

Experiences of assessment in the school and at the university (Q6 and Q7)

Adolescents rated assessment of social anxiety and treatment suitability in the school as good, mean of the ratings was 7.92 (*SD* = 1.5) on a scale of 0-10. They also rated the clinical assessment at the university as good, mean of ratings was 8.44 (*SD* = 1.3) on a scale of 0-10. Parents rated assessment of social anxiety and related issues in the school as excellent, mean was 9.2 (*SD* = 0.8), and clinical assessment at the university was also rated as excellent 9.2 (*SD* = 0.6) both on a scale of 0-10.

The treatment's completion rate was 100%. Session attendance rate was 94%. Due to the ongoing COVID-19 pandemic, we offered a possibility for selected remote sessions when needed. Two participants attended remotely for one group session. In other cases of absence ($n = 6$), compensatory individual sessions were conducted, either remotely or at the university.

4. DISCUSSION

Results from this pilot case series show that using a detection toolkit and professional operating model, with school psychologists as consultants and coordinators in their respective schools, resulted in relatively accurate detection of SAD and treatment suitability in the school. Of adolescents who were referred to treatment, 71% had clinical SAD and completed the DOCT-SAD treatment. Regarding evaluation of clinical benefits of the DOCT-SAD, 60% of adolescents reached remission according to SPIN, also 60% were free of their primary SAD diagnosis post-treatment, implying it holds promise as a treatment model for adolescent SAD and merits further development and controlled studies with larger samples. The DOCT-SAD was feasible for adolescents and their parents as shown by high treatment completion and session attendance rates, and good ratings for the treatment.

School-based detection of SAD and suitability for the treatment.
Our findings showed a relatively encouraging rate of SAD detection and treatment suitability accuracy was obtained by using the SAD detection toolkit and the professional operating model in the school. Of the 14 referred adolescents, researchers' telephone check identified two who were not eligible, and finally ten (71%) of the referred received a clinical diagnosis of SAD, started the treatment, and completed it. This result is similar to that of Sweeney's (39) detection rate of SAD in schools. They screened pupils with self-report measures or alternatively using teachers and school counsellors as nominators for the treatment, which was followed by a phone screening. Similar to our screening protocol, the researchers conducted a two-step screening process; first, via telephone and second, face-to-face, in order to confirm the diagnosis for SAD and to hear the parents' perspective. In an earlier school-based study, six out of eleven (55%) adolescents referred to diagnostic interview by teachers, who had been given a 1-day workshop on social anxiety, met the diagnostic criteria for SAD (65).

As we assessed not only detection of SAD, but also suitability and treatment completion, it appears that relatively good accuracy rates can be reached with coordinated efforts in the SHWS, using brief detection tools, brief training for them and electronic distribution of materials.

Symptom reduction in primary outcome measures.
Symptoms of SAD decreased significantly, as also found in other similar studies (66). Average effect sizes for pre-post design regarding adolescent social anxiety symptoms has been around 0.86-0.99 (67,22). However, when analysed for type of treatment setting, effect sizes for school interventions ($g = 1.55$) seem to be higher than clinical treatments ($g = 0.67$) (22). The effect size in this study was comparable to that found by Scaini (22).

The 60% diagnostic remission rate seems comparable to disorder-specific CBT treatments for SAD (66) and seems better related to transdiagnostic treatments: 33% found by Hudson and colleagues (68), and 35% found by Evans and colleagues (24). In DOCT-SAD, all four adolescents who did not reach diagnostic remission had at least one comorbid anxiety or depressive disorder that persisted post-treatment. This finding, that comorbidity in SAD is associated with worse treatment outcome in adolescents, is in line with other studies (69,70).

Other outcome measures.
Interestingly, depressive symptoms also decreased, even though the treatment was specifically targeted to treat SAD. This observation has also been made by Rozen and Aderka (71) and Yang and colleagues (66) in their meta-analyses. This might be due to the behavioural activation that occurred in the treatment. Behavioural activation is often used to treat adolescents with depression (72). In addition, depressive symptoms can emerge from the increased isolation and withdrawal due to SAD and can reduce when the symptoms of SAD subside (71). In this study, one of the participants with pre-treatment depressive disorder no longer met the criteria for a depressive disorder post-treatment.

Feasibility.
Both the high completion rate (100%) and session attendance rate (94%) illustrate good feasibility and acceptability of the DOCT-SAD for adolescents. Parent ratings and verbal reports also indicate a good feasibility and acceptability for this treatment model. The feasibility results are comparable to results found in studies examining the feasibility of the related CT-SAD-A treatment model for adolescents (32,43). Whilst the session attendance rate was good, there were still some absences from singular sessions. Most of these

absences were due to illness, and we found that having flexible options for participating remotely increased the attendance rate.

Adolescents and their parents reported good to excellent wellbeing after the intervention, which was accordant with the pre- and post-treatment YP-CORE changes. The developmentally oriented DOCT-SAD treatment model was described by adolescents as suitable for them, and their parents also reported good suitability of the treatment. In their reports, adolescents mainly gave positive feedback on the methods used in the group and individual sessions, while the parents mainly noted frequent, positive behavioural changes in their children.

Our results need to be evaluated in the light of several limitations. First, results are based on a case series of ten adolescents. Without comparison to a control group, conclusions on the treatment's effectiveness cannot be made. It is possible that the symptom reduction would have occurred without the treatment. Second, participants were mainly female, limiting the generalizability of results to males. Third, the diagnostic assessments were not conducted by independent assessors. Last, this study did not include follow-up assessment.

This study reports results from a feasibility study of a developmentally oriented treatment for adolescent SAD. The treatment was thoroughly adapted for this age group and SAD as it presents among adolescents. The school detection toolkit and professional operating model was agreed with collaboration between the research group and SHWS representatives, which adds ecological validity and informs on factors which may be relevant when implementing treatments to a school context in the future. The symptom measures used were validated for use among adolescents. The use of a self-assessment measure of SAD as the primary outcome measure was based on the decision to stress the adolescent point of view. Diagnostic interviews were conducted using a validated method of assessing SAD symptom severity in this age group, and both adolescents and their parents were used as informants.

Conclusions.

This study indicates that both adolescent SAD and suitability for brief psychotherapy can be identified relatively well in schools. Results further indicate that DOCT-SAD holds promise as a treatment for adolescent SAD: it is feasible for adolescents and their parents, it associates with symptom reduction and diagnostic change and seems to be applicable in the context of Finnish services. Use of the detection toolkit required no lengthy training. The professional operating model for detection and referral led to a smooth referral to treatment, and could be examined in future studies as a model of coordinated mental health work in SHWS. DOCT-SAD, provided by graduate master's level students with a major in psychology without extensive clinical experience, suggests a model that might be well suited for training and used by professionals with a mental health background, but it remains to be seen in future studies how much training and how frequent clinical supervision would be needed in order to train other professional groups for its use.

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PETRA KOUVONEN, LOTTA HAMARI, SARA TANI

CORE ELEMENTS IN A MULTI-TIERED SYSTEM OF SUPPORT (MTSS) FOR CONDUCT PROBLEMS IN SCHOOLS AND EARLY CHILDHOOD EDUCATION AND CARE (ECEC) IN FINLAND – LITERATURE REVIEW AND CASE EXAMPLE

ABSTRACT

There is increasing concern across Finnish society over the growing number of children being referred to specialized psychiatric care, leading to calls to develop new ways to deal with such problems at the primary health service level and close to the children's growth environments such as schools. However, the signals from those working in different educational settings reveal that there are shortcomings in the ability of schools and Early Childhood Education and Care (ECEC) services to deal with behavioural problems in educational settings. In this article our aim is to identify the core elements found in the literature on a multi-tiered system of support (MTSS) for conduct problems in both school and ECEC environments, and how these core elements correspond to the attempt to create a multi-tiered system of support within a Finnish region. The data is based on a literature search and a written account and an interview of a case example. The literature search consists of articles about multi-tiered system of support (MTSS) within educational settings when dealing with conduct problems. The written account of case example was compared to MTSS literature and analysed collaboratively in an interview with a representative from the region. The literature search revealed 832 titles, and 14 articles were chosen based on predefined criteria. According to the literature consulted, there are three core elements that should be considered when implementing MTSS within educational settings. These three core elements were ways by which psychosocial support is selected and used, how the tasks and responsibilities of management and administrative support procedures are organized, and how the network support is used. The results from comparing the literature findings with the regional case example revealed that most gaps in relation to the literature were found in relation to leadership processes associated with implementation and monitoring procedures of psychosocial support, i.e., how the responsibilities of management and administrative support were organized. As it seems, MTSS is one potential solution for dealing with behavioural problems in schools structurally. In order for MTSS to be successful in educational settings, it requires strong systems for collecting data and skillful, adaptive and technical leadership. In Finland there are structures and networks already in place to take up MTSS, but as of today, there has been little or no attempt to implement the core elements of MTSS in educational settings.

KEY WORDS: MULTI-TIERED SYSTEM OF SUPPORT, MTSS, CONDUCT PROBLEMS, SCHOOL, EARLY CHILDHOOD EDUCATION AND CARE

INTRODUCTION

Conduct problems are often identified in the early childhood educational or school environment. The main problem raised is primarily how to deal with unclear or unhealthy emotional and interactive patterns in the classroom or school in the form of, e.g., instructional advice, socio-emotional support, or through classroom organization and management (1). According to Hallett et al. (2019), there is strong and well-documented evidence that behavioural competencies are closely linked to children's cognitive development, pre-academic skills and preparedness for school. It is due to this increased evidence that the close environment of children is in fact the key to building such competencies, and thus solving demands connected to unwanted behaviours in educational settings. This provokes us in this article to ask what and how conduct problems could be solved in a solid, flexible and structured way within school or ECEC environments. We first introduce what the concept of multi-tiered system of support (MTSS) offers to this demand, whereafter we will present some of the contextual prerequisites we find important to present as a basis for a future implementation of MTSS in Finland.

MULTI-TIERED SYSTEM OF SUPPORT (MTSS) AS A BASIS FOR SOCIO-EMOTIONAL SUPPORT IN EDUCATIONAL SETTINGS

Multi-tiered system of support (MTSS) is an umbrella concept for evidence-based (EB) practices that combine academic support and behavioural interventions (*Figure 1*). MTSS can be defined as: "an evidence-based model of education that employs data-based problem-solving techniques to integrate academic and behavioural instruction and intervention"(3). MTSS often combines different tiered approaches where, in a systematic way, academic progress or difficulties are used as a basis for seeking the right level of tailored educational and psychosocial support. The MTSS concept has been created as a multi-tiered system for all students, while a similar approach with a particular focus on children with behavioural or other challenges is termed Response to Intervention (RtI).

RtI and MTSS should not be viewed as the same approach. According to Jimerson et al. (2015), RtI has its roots in special education services, while MTSS is based on supporting general education. Even if both approaches include universal screening, providing tiered interventions, monitoring student progress and using a problem-solving framework, RtI underlines the importance of assessment more than MTSS. For this reason, we consider MTSS as having a more explicit focus on general education and thus a better fit to the Finnish educational system. In fact, before the above-mentioned authors turned to emphasizing the general educational base, in 2016 they wrote: "In 2006 we defined RtI as the systematic use of assessment data to enhance learning for all students. That was somewhat erroneous because we actually were defining MTSS, which is the term and concept that we now prefer and is now more appropriate to use"(5).

Thus, there is still much to learn from Rtl when it comes to using data as a base when combining the framework with a behavioural approach. In this dynamic, assessment progress monitoring can be understood, in part, as formative evaluation when teachers use the data to first determine whether they need to change their curriculum, materials or instructional procedures. In order to strengthen psychosocial support, a combined approach, including, e.g., Positive Behavioural Interventions and Supports (PBIS) or School-wide Positive Behavioural Interventions and Supports (SWPBIS), is often applied (6). School-wide Positive Behavioural Interventions and Supports (SWPBIS) is a framework for intervention practices and organizational systems that support the attainment of desired social and learning outcomes while establishing an inclusive social culture and intensive individual level behavioural support. The framework is the integration of four different elements: operationally defined and valued outcomes, behavioural and biomedical science, research-validated practices and systems change which, within that, includes all students in schools. SWPBIS is a three-tiered system with different intensities. Since the two approaches, Rtl and PBIS or SWPBIS, have overlapping elements and similar core elements, they are implemented together under the umbrella term of MTSS (7). As such, Rtl can be classified as a tiered approach that addresses all students within a school by providing different intensities of academic support for educational progress while the other approaches focus more on tiered support for social skills instruction and behaviour intensity.

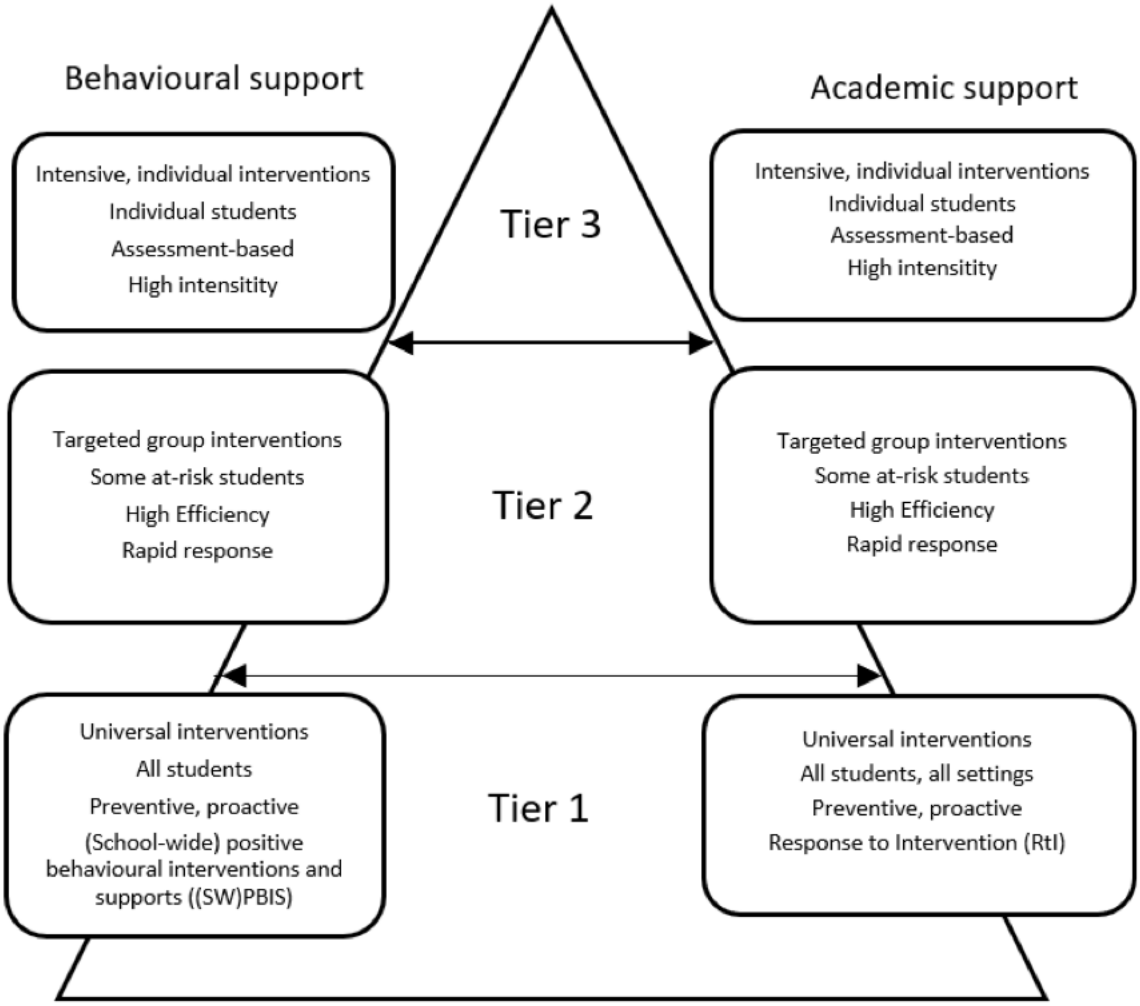


Figure 1. Framework for multi-tiered system of support (MTSS). Adapted from Sugai (7)

Within an educational setting, when dealing with conduct problems the core elements in a multi-tiered system of support can be approached in various ways. One such way is to divide the support into two, namely the core elements of MTSS regarding behavioural support and the core elements that support implementation of MTSS in educational settings. Since MTSS includes combining elements that support both academic and behavioural achievement in practice, we will discuss the two aims in parallel in this article. On the basis of our research questions, we find it most relevant to understand the prerequisites for how academic and behavioural achievements interact when implemented. From this perspective the important issues are how data-based problem-solving processes, team-based working and evidence-based practices work as mechanisms for effective implementation and support.

THE IMPLEMENTATION CONTEXT FOR SOCIO-EMOTIONAL SUPPORT IN EDUCATIONAL SETTINGS IN FINLAND

Wellbeing and safety as a basis for learning and development are emphasized in several steering documents such as the National Core Curriculum for Basic Education (2014), the National Core Curriculum for Pre-primary Education (2014) and the National Core Curriculum for Early Childhood Education and Care (2022) as well as in legal frameworks such as the Student Welfare Act (1287/2013).

Still, the increasing number of referrals, together with signals from those working in schools or in the ECEC environment, reveal that shortcomings remain in the ability of schools and ECEC services to deal with psychosocial problems, particularly in relation to the different levels of intensity needed at different stages. The most common reasons, in Finland, for referring children aged 5–11 years to psychiatric services generally relate to different kinds of conduct problems (8). In 2020, 9% of children aged 7–12 years had a visit to public healthcare services due to mental health reasons. Of these visits, almost half (44%) related to children who had received an ADHD diagnosis or one associated with other conduct problems (9).

The difficulties in tackling conduct and other socio-emotional problems in schools have been explained, e.g., by a lack of training for teachers on how to deal with psychosocial demands detected in a recent analysis of 11 teacher training curriculums in Finland. In relation to this material, researchers found that social training was in fact totally absent in 4 curriculums and poorly included in the other cases (10). Additionally, recent research on student healthcare also points to obstacles in the provision of MTSS for pupils in Finland (11). Problems identified by the researchers included, for example, a lack of clarity in terms of the division of labour and the unequal distribution of mental health services causing over-dependence on certain schools and its personnel. The researchers identified four alternative scenarios for the arrangement of mental health services in schools, which were: 1) services organized by someone outside the school with the responsibility for providing mental health check-ups and services, 2) a psychiatric nurse visiting the school, 3) professionals within the welfare services of the school, working as a team, 4) or independently. Although an analysis has been made by Putkuri et al. (2022) of the reform needs on different societal levels, none of the scenarios discussed the role of needs assessment and screening from the perspective of different professional backgrounds. This could be identifying the signs or indicators of behavioural problems in the classroom that raise concerns regarding behavioural patterns, and how they are connected to needs assessment and the interventions chosen in a social and healthcare context. From this background it seems that the question of what constitutes a well-functioning MTSS needs further attention in order for it to become better integrated into Finnish schools, in the work of educational and social and healthcare professionals.

In this article we focus on the provision of a combined approach in respect of academic and behavioural support, i.e., a multi-tiered system of support (MTSS), and suggest that this combined approach could support and enrich the integration of the three-tiered support notion in the current national curriculums for Basic Education, Pre-primary Education and Early Childhood Education and Care by adding psychosocial support.

Our research questions are as follows:

- What are the core elements of the multi-tiered system of support (MTSS) described in the literature?
- How do these core elements correspond to the attempt to create a multi-tiered system of support within a Finnish region?
- What kinds of hinderances/opportunities are visible from a regional perspective with regard to the introduction of multi-tiered system of support (MTSS) into current practices?

METHODS

First, we conducted a systematic literature search (LH) in order to identify the core components of MTSS. Secondly, these core components were then compared to a locally created Finnish version of MTSS implemented in a Finnish school and subsequently named here "the regional case".

SEARCH STRATEGY AND DATA SOURCES

A systematic literature search was conducted of CINAHL, ERIC, Academic Search Premier, Art Full Text (H.W. Wilson), APA PsycArticles, APA PsycInfo, SocINDEX with Full Text, Teacher Reference Center and Education Source via EBSCO (21.1.2022). Search words are seen in *Table 1*. We included review articles, theoretical articles and empirical articles published in English, Swedish or Finnish, with a time limit of 10 years. The search was restricted to scientific articles, dissertations and reports.

Table 1. Search strategy

Population/problem (combined with OR)		**Key concept (combined with OR)**		**Context (combined with OR)**
conduct problem	**AND**	multi-tiered support	**AND**	elementary school
conduct disorder*		multi tiered system of supports		elementary education
behavioral problem*		MTSS		primary school
behavioral difficult*		teacher competencies		primary education
behavioral disorder*		classroom management		early childhood education
adjustment disorders		behavior management		kindergarden
disruptive behavior		behaviour management		preschool
oppositional behavior		inservice training		
impulsive behavior		further education		
hyperactive behavior				
antisocial behavior				

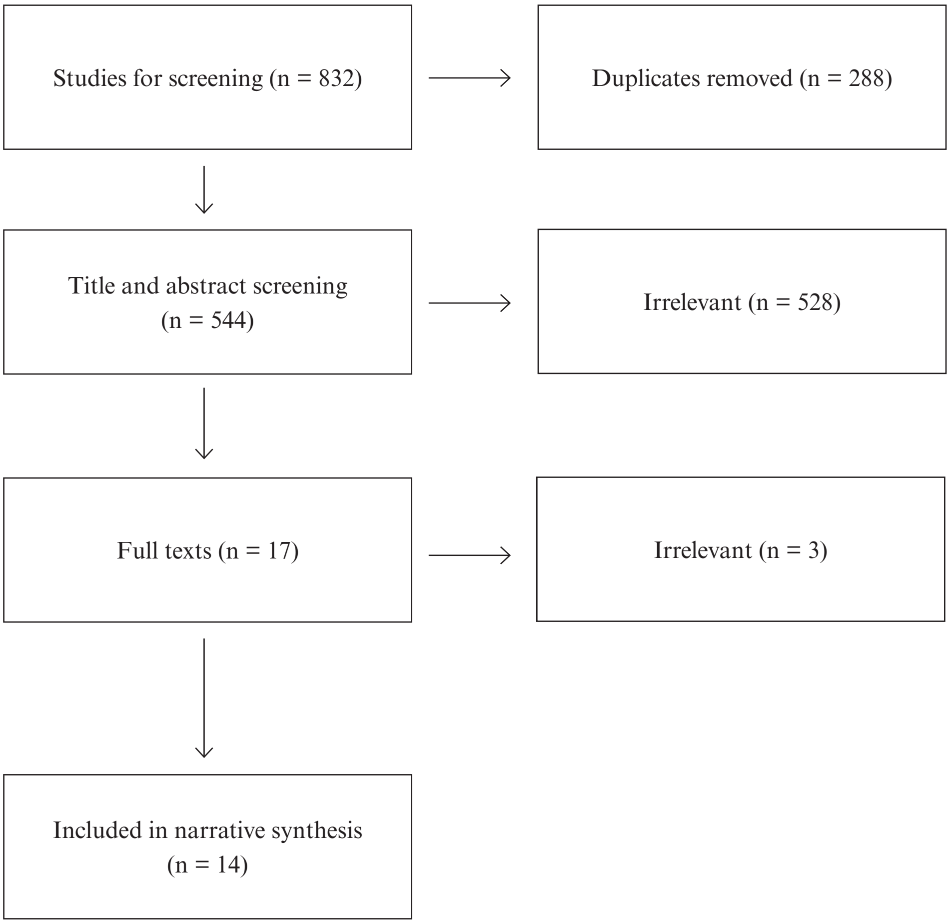
STUDY SELECTION

The study selection was performed based on the predefined inclusion criteria. First, the titles and abstracts were screened by one reviewer, and second, the full texts of the selected articles were reviewed by two independent reviewers. Disagreements between the two reviewers were solved by discussion and consensus.

Inclusion and exclusion criteria were developed using the PCC strategy (population, concept and context) (12). The population of interest were pupils with conduct problems, the key concept was multi-tiered support while the context was school and ECEC environments.

A total of 832 articles and reports were identified via the selected databases. After removing duplicates, 544 records were screened by title and abstract and 17 full texts were eventually screened. A total of 14 reports and articles were included in the final review (*Figure 2*). The results are reported as a narrative synthesis. Formal critical appraisal was not conducted.

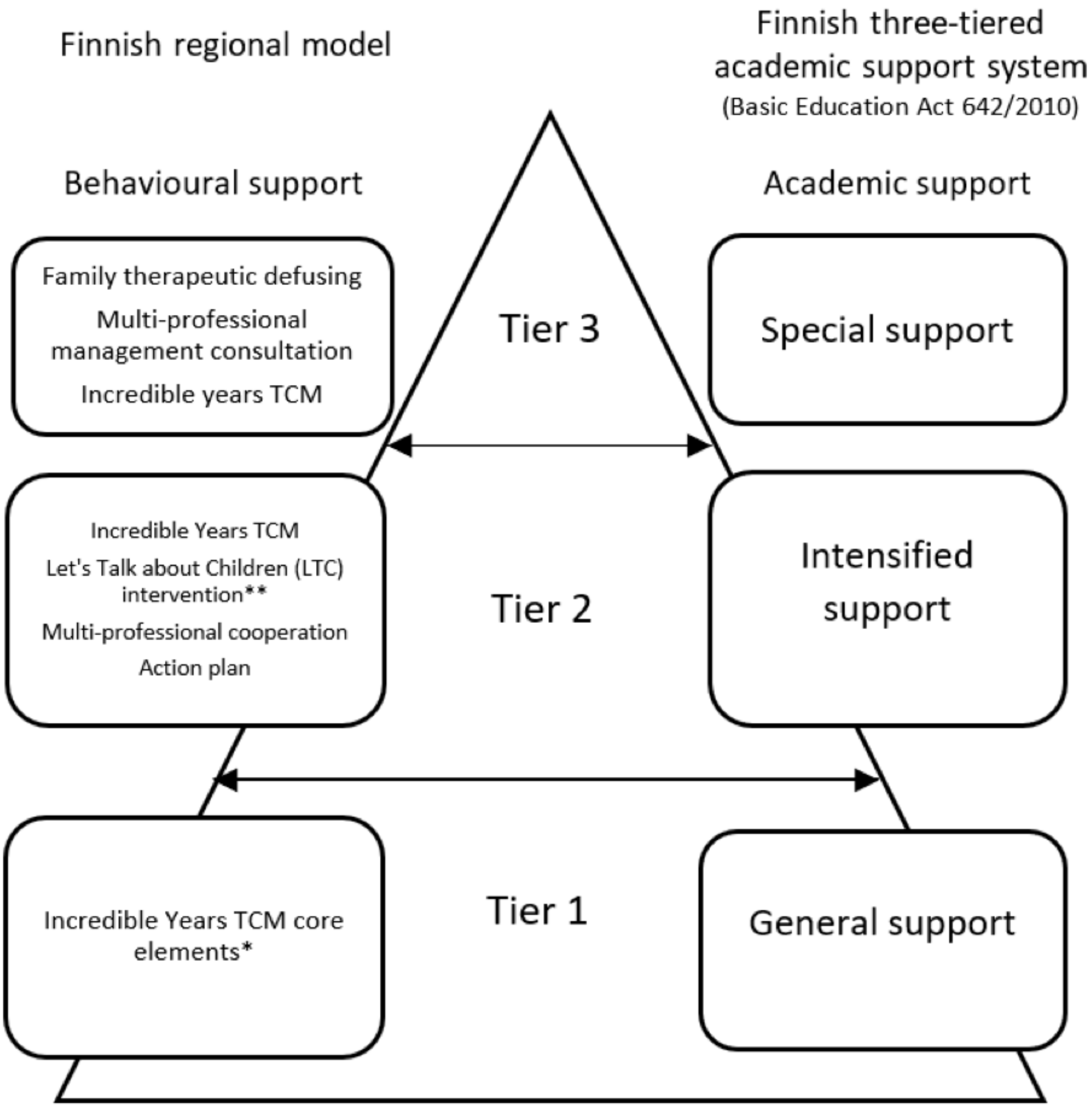
Figure 2 PRISMA Flow chart (13)



CASE STUDY TRIANGULATION

The core components of MTSS identified in the literature were compared to a regionally created Finnish version of MTSS implemented in a Finnish school named here as the “regional case”. First, a written account of the regional case was analysed (*Figure 3*) and compared to the core MTSS elements found in literature. Second, we asked a key informant responsible for creating a version of Finnish MTSS for a detailed written account of the model, which we then analysed by comparing it to core components in MTSS literature. We then asked for feedback on our interpretation from the key persons central to the process of creating the regional case model and responsible for its core elements. The iterative interview was conducted to gain better understanding of the practices in the region, and also to make sure that there was a mutual understanding between authors and the informant about the core elements that were or were not found in the written account. This research tactic of collecting and combining two or more sources of data is often used in case studies: the triangulation between data sources is used to gain a deeper understanding of the subject of the study, which in this case is the regional model of MTSS in Finland. The aim is to iteratively converge the data to understand the case better (14,15). The interview was conducted via remote meeting technology.

Figure 3. Finnish version of framework for multi-tiered system of support (MTSS).



Note: *Core elements of TCM (teacher classroom management) in this context are shared understanding within a group about expectations for behaviour, conditions that facilitate behavioural training, regular and positive feedback for desired behaviour

** Let's Talk about Children intervention supports children in their everyday life by bringing together professionals to overcome the fragmentation of services, thus preventing family problems. Different actors commit to a shared goal, namely finding the best ways to support the child. Read more here: https://kasvuntuki.fi/en/

THE REGIONAL CASE EXAMPLE

According to the written account, the case of "conduct problems", or more specifically "aggressive children and young people", was chosen in the region to be the focus when working on new flexible, structural ways of tackling emerging needs among children and young people in a multi-tiered way, including much of the core elements found in literature on MTSS. The group chosen had been identified by family centres and the educational field in the region which eventually led the region to act. In this process a regional multi-tiered system of support was set up and it is still in place.

The idea to create structures like MTSS emerged as a result of the common challenges faced in relation to a range of behavioural problems detected by professionals working in both the social, health and educational sectors. The regional model was built tier by tier as follows:

Tier 1

The first steps taken were to enforce the concrete tools and support teachers required. As a mutual theoretical framework, the theoretical basis of an EB programme Incredible Years Teacher Classroom Management (TCM) (16), was chosen and introduced. TCM was chosen since it was considered to provide a solid base for a shared understanding of the expectations in respect of behaviour and to provide the conditions that best facilitate behavioural training. Since it is a structured programme, it included support structures provided by an intermediary organization with responsibility for the management of the programme.

Tier 2

In terms of tier two, the most important issue is how the selection of those in need of more support is undertaken. In the literature, the role of multiple sources of information was underlined. In the regional case the following indicators were used:

- Behaviour of the child changes in relation to social networks, appearance, behavioural challenges
- Over 50 hours of absence from school
- Negative responses to parents from school (Wilma system, an electronic service for home-school interaction)
- Changes in the familial circumstances

At this point the teacher invites the following to a meeting: the student, the parent(s) or legal guardian and a representative from student healthcare. In the regional case the Let's Talk about Children (LTC) intervention (17) is used as a supplement to the legal frameworks that exist in Finland to organize such a meeting. The aim in utilizing LTC as a framework is to support children in their everyday life by bringing together professionals in one place to overcome the fragmentation of services and prevent family problems. The idea is that different actors commit to a shared goal, namely finding the best ways to support the child. An action plan for the child is written at this first gathering and followed up. Based on the progress monitoring, two outcomes are possible: either the intervention is enough, or some further support is required. In cases where the response to the intervention does not show the desired outcomes, the group might organize a broader LTC network meeting with professionals who can offer additional support in respect of the child's situation. Once again, an action plan is created that includes TCM practices and concrete goals in terms of everyday life, and defined roles for support are allocated to each member of the child's support system. The consultation group might also discuss the need for more intense academic support or in some cases a referral to special education, if necessary.

Tier 3

In the regional case a multi-professional management consultation was created as the following step. This happens if the response to the intervention is deemed insufficient even after intensified support is put in place on the basis of the intervention made at the tier 2 level. Additionally, the procedures are structured so as to prevent further problems at school or at home. This might take place in cases where:

- The wellbeing of the student is declining
- There are considerations over the learning abilities in relation to pupil's living circumstances or the ability of the neighbourhood school in question to provide an adequate level of response that meets the required demands
- All other previous steps are used but without success
- Collaboration with the parent(s)/guardian is escalating towards a crisis

Throughout this process TCM practices are used at an individual level to support behavioural training and regular and positive feedback for desired behaviour. At this stage the principal is also inviting in a family therapist with expertise in the field of reconciliation. The experts hear the parties concerned and aim to forge a plan to produce a solution, thus unlocking the situation. The aim here is to find ways out of the situation and support the student and best secure their wellbeing at school. The work is structured in such a way that moves from the inventory of the student's situation to the plan, and is done in a co-creative manner together with the school, educational sector leaders and family centre leaders who have been appointed to a multisectoral crisis group. The MTSS is put in place to ensure that nobody is left out and that unnecessary and overlapping work is avoided, most importantly ensuring that the support needed is put in practice before the situation escalates further.

RESULTS: LITERATURE REVIEW

RESULTS FROM LITERATURE REVIEW: CORE ELEMENTS IN MTSS

A total of 14 studies addressing the core elements of a multi-tiered support system model were included in the review. The included articles were published between 2014 and 2021. Study designs in the included articles were: review (n = 4) (18–21), experimental (n = 4) (22–25), mixed methods (n = 1) (26), case study (n = 3) (2,27,28), and report/discussion paper (n = 2) (29,30). The core elements of MTSS extracted from the articles are seen in the in the *Table 2*.

There are three core elements that should be taken into consideration when implementing MTSS within educational settings: 1) Selection and use of psychosocial support, 2) tasks and responsibilities of management and administrative support, and 3) network support (4).

In what follows, we discuss the literature under these three headings.

1. Selection and use of psychosocial support in MTSS

One of the main differences in MTSS compared to more traditional ways of responding to challenging behaviours is to increase the interaction between data on the psychosocial support needs gained from social and health screenings with data from the teachers and other adults in the student's life, where possible. As one of the core elements of MTSS, rich data played a big role in the literature that was reviewed. In order to collect rich data, it should be gathered from multiple sources to help define school needs and what kind of psychosocial support would be required within MTSS when problems appear, but also preferably preventatively already before that. It is also encouraged in the literature that the data gathering happens in multi-disciplinary screening teams to get presentable data (28). The potential sources for data are student data, teacher and other staff perceptions and parental views on behavioural patterns (2).

According to Verlenden et al. (2021), emerging signs in respect of problems of attendance, office discipline referrals or suspensions, are not irrelevant, but as the only measures they are reactive and highly dependent upon the individual teacher's skills and experience (31). An over-focus on such signs also risks the over-referral of certain children or young persons over others, e.g., those with certain characteristics or a focus only on the "loud or visible problems" leaving out those with less visible ways to interact with their environment (32). Regarding more traditional referrals to support, MTSS can be seen as more proactive since it often includes universal mental health surveys (UMHS) as a basis for identifying intervention need for socio-emotional conditions of the children (25). In UMHS, each school student is assessed via the use of a brief research-validated screener to measure possible health concerns (33).

The process of adapting and using rich data from multiple sources includes procedures such as planning, conducting screening and follow-ups, progress evaluation, measuring and supporting fidelity and fidelity within adaptation and training certified coaches as well as training other school staff about screening procedures. Professionals offering psychosocial support in the articles used included school psychologists, consultants, special education teachers and nurses. These professionals have the expertise to choose correct screening instruments, plan the collection of follow-up data and monitor the progress and outcomes (2,18,22–29). These professionals also need support for their work. An identified body whose task it is to ensure that implementing with fidelity takes place and who is in charge of following the implementation process is often overlooked when it comes to bringing EB support into work practices in schools (34). If a larger district or area is implementing MTSS this means, in practice, clear procedures are required for the district leadership, and that is addressed in the next chapter (19).

2. Tasks and responsibilities of management and administration support in MTSS

The core elements in respect of management supporting the implementation of MTSS in a school setting can be divided into adaptive leadership elements and technical leadership elements. Eagle et al. (2015) defined adaptive leadership as leadership related to strategic leadership in terms of creating a shared vision, the motivation to implement MTSS, enthusiasm and building consensus among staff and stakeholders. Technical leadership includes procedures that efficient implementation requires at the practical level (27).

The elements of adaptive leadership consist of assessing organizational readiness for implementation and social validity measures within the school, communicating between leadership teams, school level and district level leaders, and school staff to create a shared vision and implementation plan (19,21,27). Defining organizational readiness is, in this case in different levels of the school system, important during the early stages of the implementation process in order to reduce the implementation barriers for change (19,35). In later stages of MTSS implementation, the management and administrators should consider building a resource bank for implementation strategies with steps that are actionable and where responsibilities are defined (2,20,26,27).

The technical leadership elements identified by the literature review include allocating resources for efficient implementation, identifying funding sources and developing the core elements of MTSS. This also requires hiring knowledgeable and motivated staff members that share the school organization's vision (2,27). It is important that the school leaders work as part of the decision-making teams, because they have the authority to reallocate resources, reduce implementation barriers and seek funding sources (2,27,28).

Also, as technical leadership elements, the leadership teams should pave the way for rich data systems by building structures for data collection and feedback loops to support decision making. This can include programme development, teachers' professional development plans and indicators for progress evaluation such as academic, demographic, office discipline and screening data from universal screening (2,19,21,25,28). In regard to UMHS as a rich source for data, Splett et al.(2018) also note that it identifies more students than the regular screening methods: this means that the school management has to ensure that the school has systems and practices in place to provide support for those in need that are identified in the wider screening process.

The core elements in terms of administrative support in MTSS consist of organizing regular meetings, allocating time resources between the staff, communicating between the school staff, mental health professionals and families and building a resource bank for implementation strategies. Timing regular meetings supports the team-based working and knowledge sharing that are essential for MTSS to work within educational settings (20,27).

3. Networks in MTSS

The core elements of MTSS from the perspective of network support within an educational setting include the regional organization that has the administrative responsibility for EB methods used and supports cooperation between the social and healthcare sector and the school sector (2,27,30). Network support in MTSS also means facilitating cooperation with local higher educational institutions (2,28), multi-professional teamwork (19,27,28), bringing families into the process and making them part of the problem-solving process (18,26,29). It is pivotal to provide tools to assist in implementation (19), and to recognise obstacles in implementation (19). In addition, the literature showed that communication between different stakeholders and supporting the use of EB practice in an educational setting are key elements in MTSS (19,26).

It is crucial that each discipline has knowledge of the others' areas of expertise and professional roles (27), which in turn highlights the importance of communication between disciplines and organizations (19). Academic and behavioural MTSS actors, especially district leaders, should communicate and collaborate on a regular basis (19). Discussions on implementation, knowledge development, integrated policies and practices help to accomplish the aims of MTSS (19). A district coordinator may guide MTSS by bringing MTSS stakeholders together to support school teams (19). In schools, multi-professional teamwork and communication between disciplines could mean, for example, that a school psychologist brings critical content knowledge to the organization, and thus has an important role to play in providing professional development content to school staff (27). The level of commitment at individual, administrator and organizational levels is important since implementation requires time and resources in the long-term (19). Experience and knowledge in terms of implementation science and learning from the implementation process benefits professionals working across different phases of the MTSS process (27,28).

Table 2. Data extraction table

Study	Methods, sample (if applicable)	Results / key message	MTSS core elements	MTSS implementation
Collier-Meek 2019	Exploratory study, Ten teachers and their students (n = 177)	Class-wide academic engagement was positively associated with frequent references to schedules or routines and behaviour-specific praise and negatively associated with error corrections. These findings provide initial evidence that particular classroom management components may be more effective than others.	*Core Elements:* -Generally positive behavioural interventions and supports (PBIS) (did not consider mental health). -Data-based decision-making and monitoring. -At classroom level; class schedules and routines, behaviour-specific praise increased, and brief error corrections decreased academic engagement.	*Selection and use of Psychosocial support in MTSS:* Teachers may need ongoing support to implement classroom management consistently.
Eagle 2015	Case study (depicting the roles of school psychologists and principals in implementing MTSS within a consultation process)	(fictional)	*Core elements:* Response to Intervention (RtI), PBIS, data-based decision-making, curricular and instructional methodology, evidence-based interventions, systematic problem identification and problem-solving procedures, team-based activities, and monitoring levels of support at different levels.	*Selection and use of Psychosocial support in MTSS:* screening, evaluation, selecting an evidence-based intervention based on assessment and concerns, fidelity monitoring, training, and mentoring, continuous implementation support, monitoring progress and data-based decisions regarding increased support. *Tasks and responsibilities of management and administration:* allocation of resources for assessment and implementation, addressing system culture issues, evaluation of implementation barriers and organizational readiness, organizing regular meetings. *Networks:* Regional networks and support for implementation, creating structure for timetables, MTSS multi-disciplinary teamwork (possibility to consult).

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Study	Methods, sample (if applicable)	Results / key message	MTSS core elements	MTSS implementation
Fabiano 2019	Review	The evidence supports classroom contingency management strategies, with emerging evidence supporting training in organizational skills. Behavioural parent training is also a supported intervention, however relatively few attempts have been made to evaluate it when integrated into school environments. Compared to parenting interventions, there are fewer school-based studies of interventions for children with ADHD. The strength of the evidence for all interventions is weighted toward the elementary school level, with fewer studies supporting interventions at the pre-school and middle/high school levels.	*Core elements*: RtI, PBIS, a tiered problem-solving model: (1) best practices for finding students at risk of ADHD (screening); (2) the importance of conducting a functional assessment of the student's behaviours; (3) evidence-based interventions that can be used with all students (Tier 1), small groups/at low intensity (Tier 2), and at the individual level (Tier 3), and (4) methods to monitor the progress of these students to determine when treatment should be changed or terminated.	*Selection and use of Psychosocial support in MTSS:* First screening at the school level, then a more precise definition of the problem, adaptation, training, monitoring of progress. *Tasks and responsibilities of management and administration:* monitoring progress. *Networks:* Involving families, teachers and students in collecting data.
Freeman 2015	Review	District leadership and involvement is an important component for successful MTSS implementation. District leaders can support MTSS practices in regional schools by providing training and technical support, supporting infrastructure, data-based decision making, and feedback systems, and by creating a shared vision in implementing MTSS.	*Core elements:* School-wide positive behaviour support (SWPBS), RtI, screening, three tiers, evidence-based curricular and instructional practices for all students, data-based decision making, standardized problem-solving process in all levels, a team-based approach for leading, planning, and evaluating implementation efforts.	*Tasks and responsibilities of management and administration:* providing tools for monitoring progress, mapping readiness levels, mapping of internal and external factors affecting the process/implementation, resource allocation. *Networks:* A multi-professional team that communicates between school and regional level.

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Study	Methods, sample (if applicable)	Results / key message	MTSS core elements	MTSS implementation
Hagermoser Sanetti 2018	A randomized multiple treatment embedded within a multiple baseline across teacher participants, n = 3 teachers	Teachers used the intervention more often and with better quality, and students' disruptive behaviour decreased when implementation was supported by implementation planning. However, the results did not remain at follow-up points. Results suggest teachers need different levels of support, and less time- and resource-intensive implementation supports are sufficient for some teachers. Systematic implementation supports are important to ensure that interventions are implemented consistently.	Core elements: Teamwork, evidence-based method, information-based decision making, flexibly intensifying support. Did not consider mental health.	*Selection and use of Psychosocial support in MTSS:* Screening and progress evaluation, consultations, data-based decision making, weekly assessment of progress and fidelity. *Networks:* If teacher's intervention adherence was low, the consultant met with the teacher to complete implementation planning.
Hallett 2019	Descriptive case	Recommendations for scaling and sustainability: "Have a strong vision and a clear action plan", "Identify implementation drivers", "Tailor the content to the needs", "Develop recruitment strategies", "Create a training and coaching certification system", "Plan for intensive technical assistance", and "Engage in ongoing progress monitoring".	*Core elements:* Research-based, multi-level support model, team-based management, data collection. At classroom level: measuring intervention fidelity and determining training topics based on data. At the individual level: collecting data about children and their development – this data can be used in evaluating the need of more intensive support.	*Selection and use of Psychosocial support in MTSS:* Trained and certified counsellors and coaches, informing and involving parents, data-based decision making, fidelity measurement, evaluating social skills development, behaviour support at class and individual level, utilization of previous CM. *Tasks and responsibilities of management and administration:* Implementation support at different levels, enabling feedback, group discussions, sharing experiences, building group dynamics in teams, regular meetings, MTSS core element development plan, enabling resources and training. *Networks:* Creating multi-level network, communication between regional and local level + universities.

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Study	Methods, sample (if applicable)	Results / key message	MTSS core elements	MTSS implementation
Nye 2017	Mixed methods systematic review, multi-level meta-analysis (n = 14 studies included)	Teacher Classroom management (IY TCM) intervention was effective in reducing teacher negative classroom management strategies, and child conduct problems. IY TCM intervention was effective in increasing teacher positive classroom management strategies. None of the included studies reported data on teacher collaboration with parents.	*Core elements:* social support.	*Selection and use of Psychosocial support in MTSS:* Building a resource bank for implementation strategies, individual activity reflection, utilizing previous CM and implementation knowledge, building a support network, enabling feedback, group discussions and reflections, sharing experiences with the group, building group dynamics.
Reyes 2019	Experimental, a multiple baseline across participants design, n = 3 general education classrooms at two public elementary schools (three students at risk of emotional or behavioural disorder (EBD), and their teachers).	The interventions implemented by the teacher increased the desired behaviour for all three subjects. Problem behaviour decreased and the use of substitute behaviour patterns increased with the intervention.	*Core elements:* Team-based activity, evidence-based method, and follow-up. Team consisted of a teacher, a school psychologist and a special education teacher.	*Selection and use of Psychosocial support in MTSS:* Continuous data collection, measurement of fidelity, feedback, and possibility for additional training if needed. Consideration of the need for adapting the intervention. Goal setting for the intervention and implementation monitoring.
Sanches-Ferreira 2021	Review (n = 27 studies included).	Interventions that were designed on the basis of the function of behaviour, reduced problem behaviours in general classrooms.	*Core elements:* -Social and behavioural aspects taken into account, including mental health (Social, emotional, and behavioural difficulties, SEBD). -A teacher or team that utilize screening tools and observation to pinpoint problems. -A team that observes and screens to identify problem behaviour.	*Selection and use of Psychosocial support in MTSS:* -Possibility to use information and communication technologies that allow teachers and students to track and assess progress in the targeted behaviours of the intervention. -intervention adaptation based on the needs in the class. - ensuring treatment integrity using detailed protocols (checklists). -teachers' positive attitudes towards the intervention supported the implementation.

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Study	Methods, sample (if applicable)	Results / key message	MTSS core elements	MTSS implementation
Splett 2018	Secondary analysis of an RCT (n = 3 744 students, and n = 190 teachers)	Most students were not identified with behavioural risk or in need of mental health interventions by the school or the screener (n = 2 688, 71.8%). Of those students identified by either method (n = 1 056, 28.2%), most were identified by the screener only (n = 679, 18.1%), followed by those identified by both the school and the screener (n = 239, 6.4%), and, finally, those identified by the school only (n = 138, 3.7%). Universal screening reaches all students in need of support more widely instead of one teacher doing the screening. The screening may burden school employees if used correctly.	*Core elements:* universal screening, evidence-based methods, prevention, progress monitoring, data-based decision making, and team-based implementation. The school should enable support for MTSS teams to maintain fidelity.	Measuring fidelity.
Verlenden 2021	Two case reports	Effective screening supports MTSS and requires implementation skills and planning.	*Core elements:* universal screening, team-based working -it is critical that schools establish sustainable programmes of mental health service delivery that are inclusive of prevention programming, early intervention, targeted service delivery and progress monitoring, and are guided by evidence-informed strategies.	*Selection and use of Psychosocial support in MTSS:* Multi-disciplinary team for screening, selection of screening method in collaboration with higher education institutions, identification, and training of key persons in screening, informing parents, organizing support, evaluating the final results, balancing between adaptation and fidelity. *Tasks and responsibilities of management and administration* The principal can participate in the multi-professional team so that the team has support.

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Study	Methods, sample (if applicable)	Results / key message	MTSS core elements	MTSS implementation
Weingarten 2020	Report/ recommendations (recommendations for educators to support family–school partnerships within the context of MTSS).	Recommendations: 1. Build awareness of MTSS and its relationship to special education. 2. Ensure that communication is multidirectional. 3. Share and interpret data with families. 4. Partner with families in the problem-solving process.	*Core elements:* Data-based decision making, universal screening, cooperative problem solving, building teams, and using evidence-based interventions. A small number of students with severe learning and behavioural problems receive intensive and individualized support from, for example, special education teachers.	*Networks:* -Involvement of parents. -informing families about MTSS. -data interpretation and problem solving together with the family.
Weist 2018	Report/Discussion paper	Efforts are needed to improve system structures to support effective practice; for research to guide efficient and effective application of new practices; and for policy enhancements needed for large-scale dissemination, scaling up, and sustaining these practices.	*Core elements:* -screening procedures (early identification). -Tier 1 supports making schools more predictable, consistent, positive, and safe learning environments. -Tier 2 supports improving the structure, instruction, reward, and feedback for students who need a modest level of increased assistance. -Tier 3 supports allows individualized and evidence-based assessment and intervention across social, emotional, behavioural, and academic domains.	
Woodbridge 2014	Mixed	First step intervention participants had significantly higher pro-social skills and significantly less problem behaviours compared to the control group (at post-test).	*Core elements:* Evidence-based interventions, considering both academic and behavioural methods/ interventions, data-driven decision making and problem identification.	*Tasks and responsibilities of management and administration* -Programme adaptation to organization's existing culture and structure. -The administration must enable the resources to use the evidence-based interventions. -ensuring regional support and school readiness to implement the intended interventions. - annual training and technical assistance in implementation. -feedback for teachers. *Networks:* -Communication through newsletters, videos and presentations. -involving parents.

RESULTS: CASE EXAMPLE TRIANGULATION

The iterative interview with the regional representative revealed that the written account of the model corresponds in many ways to the MTSS procedures for tackling behavioural challenges in educational settings found in the literature. The model is based on a step-by-step approach, including a common EB informed base and attempts of monitoring, structured follow-up plans and multi-professional decision making, with the aim of responding in ways that not only call for change in the individual child but also in the ways adult society interacts with the child.

The results revealed most progress was made in the section of networks. The construction of the regional model of MTSS has taken place within a regional learning network encouraging co-creation and collective learning. Within this pilot, networks within the school environment and multi-professional teams have been created.

Improvements in psychosocial support, including procedures for monitoring and data-driven decision making were also found in the regional case of MTSS. The regional MTSS model includes evidence-informed procedures for assessment and interventions. While the Let's Talk about Children service model is used when children's meaningful support networks are assessed, schools apply teacher classroom management (TCM), which is an evidence-based method within the Incredible Years family of interventions.

Most gaps in relation to the core elements identified in the literature search were found in relation to leadership processes associated with implementation and monitoring procedures. Perhaps the most striking difference to the core elements found is related to the identification of support needs. Firstly, the identification process does apply multiple indicators (such as attendance, behavioural changes, behavioural responses and reports) in terms of monitoring the needs requirement. However, no valid instruments were systematically mentioned for follow-up regionally. Although an individual plan for children is available, the indicators and the documentation regarding when and on what basis reconsiderations in the tiered support led to the next step of support in the MTSS triangle for the child or young person in focus were absent. As long as the indicators and the division of labour in collecting the information that leads to considering or reconsidering an intervention is under process, it remains unclear as to how the assessments of academic achievement and changes in performance relate to the measures taken, e.g., choosing a further intervention. Nevertheless, it should be stated here that all the achievements, as well as the omissions mentioned, ultimately relate to the fact that no written procedures currently exist in respect of MTSS which link the educational and social and health indicators. This then places the onus on the region to resolve these issues itself.

DISCUSSION

In this article we sought to identify the core elements that could help identify the necessary tools for the Finnish school and ECEC environments, where behavioural challenges have hitherto proven difficult to tackle. While it is clear that the educational field would benefit by including psychosocial skills work in teacher training and subsequently in their everyday practice (10), issues nevertheless remain in the way in which educational staff are currently involved in the steps taken when multi-tiered systems of support are carried out in student healthcare (11).

In the literature search, core elements were identified in respect of ways by which psychosocial support is selected and used, how the tasks and responsibilities of management and administrative support procedures are organized and how the network support is used. The results from comparing the literature findings with the regional case example revealed that gaps in relation to the literature were found in relation to leadership processes. In the case of psychosocial support, the procedures for selection and use were under construction in the region and still limited at the the time, although the need for clear and structured procedures in order to provide the right level of support was continually underlined in the literature (28). Positive Behavioural Interventions and Supports (PBIS), or School-wide Positive Behavioural Interventions and Supports (SWPBIS), were in the literature we assessed, often applied together with the so-called RtI approach (7). While it was claimed that the first provides a common base for practices that support a functional and supportive working environment for children, young persons and their teachers, the latter was explained as introducing monitoring when multiple data were used. The RtI, with its roots in the special education framework, seemed to be used to consider whether the support level chosen in a specific case was in line with the needs of the student. As a limitation to the literature review part of this paper, it must be noted that the quality of the articles was not assessed, and the results should therefore be interpreted with caution.

In the regional case, several of the core elements found in the literature associated with efforts of sharing and monitoring of multiple data, even if the model was still under construction in this regard. The greatest level of similarity was found in the need to establish or use existing networks in order to share information. Most gaps in relation to the core elements identified in the literature search were found in relation to leadership processes associated with implementation and monitoring procedures. The case example differed from the examples of MTSS in the literature with regard to the type of psychosocial support included in the model. In the regional case, Positive Behavioural Interventions and Supports (PBIS), or School-Wide Positive Behavioural Interventions and Supports (SWPBIS), were not used as a common base. Instead, the core elements of Teacher Classroom Management (TCM), supporting expectations for behaviour and promoting conditions that facilitate behavioural support, was used as a common base, while monitoring applied elements from the intervention Let's Talk about Children (LTC). According to the data gathered from the regional case, the use of EB interventions contributed to the solving of this problem since they provided training, tools and procedures for follow-up that could, potentially, contribute to producing a better result, using the regional organization with responsibility for the administration of EB methods as emphasized in the literature (9,19,32). Research networks were also mentioned in relation to the work undertaken within the learning network and with reference to the data collected by the organization responsible for the management of the method. The regional model still suffered from problems in relation to how data collection, documentation and decisions made on the basis of the data were organized with the local and organizational base, such that obstacles to implementation(18) and communication between different stakeholders would have been more effectively addressed with this information available (18,22).

The acknowledged lack of know-how and tools for monitoring calls for more systematic support for EB interventions in use within MTSS at the national level. Such support should involve data, not only from the social and health sector, but also from the educational sector and if possible, from students themselves. It is also of the utmost importance that organizational leadership, such as school principals or ECEC group leaders gain support in order to ensure that EB interventions are used properly. As it seems, legislation is already in place regarding the coordination and follow-up of psychosocial EB interventions in use in Finland (36). From the perspective of the results above, it is important that the support provided for EB interventions, that are chosen in the regions, is used by the consultative personnel for schools and ECEC units and by teachers in their everyday work practices, as well as in relation to teacher training and in the work of school principals and ECEC leaders. Currently, however, this is unfortunately not the case nationally (10).

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MAKING IMPLEMENTATION PROGRAMMES BETTER. MIXED METHODS CASE STUDY OF AN IMPLEMENTATION PROCESS FOR TWO EVIDENCE-BASED BRIEF PSYCHOTHERAPIES

ABSTRACT

The Ostrobothnia Depression Programme (ODP) was launched to implement two evidence-based treatments (EBTs), behavioural activation and motivational interviewing, and to study their effectiveness. We performed a mixed methods evaluation to extract organization- and programme-related knowledge crucial in sustaining and scaling up the desired programme outcomes. A cross-sectional mixed methods survey was conducted with the programme addressees 4-5 months after the end of the ODP. The realization of case consultation groups was analysed further by interviewing those responsible for them and referring to attendance lists. The results showed that the ODP succeeded in initiating the desired change in clinical practice. Case consultations and training videos intended as reinforcers were underutilized. Weaknesses in the implementation plan and conducting the implementation programme and effectiveness study simultaneously hampered achieving progress and jeopardized the maintenance of the implementation outcomes in the long term. The complete training intervention in the intended EBTs should comprise both workshops and non-optional case consultations. Means to decentralize the clinical support in everyday work should be elaborated in collaboration with the participating teams. It is recommended coaching team leaders to deploy evidence-based managerial practices for facilitation.

KEY WORDS: BEHAVIOURAL ACTIVATION; EVIDENCE-BASED TREATMENT; EVIDENCE-BASED PRACTICE; IMPLEMENTATION PROGRAMME; MENTAL HEALTHCARE; MIXED METHODS; MOTIVATIONAL INTERVIEWING; PROGRAMME EVALUATION

INTRODUCTION

Ability to transfer an evidence-based treatment (EBT) into routine patient care is fundamental to the success of an EBT implementation programme. Deploying means that ensure the long-term survival of the intended EBT is crucial right from the inception of programme design (1,2). The process for routinizing an EBT entails accomplishing the desired change in the treatment practices at organizational level, acquiring adequate skills in delivering the EBT at the individual level as well as sustaining and scaling up the implementation outcomes after the active programme phase at the level of both the organization and individual professionals (3,4).

Normalization Process Theory (NPT) introduces three different sub-processes to achieve and establish successful implementation programme outcomes and to establish the new way of working as the norm: implementation, embedding and integration (1,5). In the context of psychiatric care, the sub-process of implementation typically includes the initial training in an EBT; embedding at least case consultations and other clinical support practices; and the third sub-process, integration, includes all managerial processes and organizational structures that enable the staff to maintain delivery of the EBT in their organizations. Programmes with a comprehensive implementation programme plan deploying evidence-based elements from all these three sub-processes have been shown to have a significant impact on the long-term survival of intended EBTs (1,4,6–9).

The attitudes and actions of management are considered the most decisive factors in promoting innovations in healthcare service organizations, thus paying special attention to them is crucial for the success of implementation programmes (10–14). For individual professionals, the readiness to adopt an innovation is influenced by the attitudes and actions of peers (12–15). Furthermore, multiple identified factors relating to the organization, individuals and the programme itself affect professionals' attitudes toward the innovation and their ultimate actions in adopting it (6,7,12,16–19). One more significant factor affecting implementation programme addressees' long-term adherence to the intended EBT is observability, seeing that some desired change has materialized as a result of applying the EBT (20,21).

In EBT implementation programmes for psychotherapy interventions, 'high-quality or evidence-based training intervention' implies the application of diverse training modalities, such as expert-led lectures accompanied by interactive and supervised simulations as well as self-study materials (4,6,22). Case consultations subsequent to brief workshops are a prerequisite for acquiring and sustaining adequate skills in the introduced EBTs (4,9). Case consultations individually or in groups have proven equally efficacious, group mode being more cost-effective (23). The contents of both training and case consultations have varied across studies with regard to the extent and mode of delivery.

THE ODP

The regional Ostrobothnia Depression Programme (ODP) (24,25) in Finland comprised an implementation programme for behavioural activation (BA) and motivational interviewing (MI), both evidence-based brief psychotherapy interventions (26,27), and a concurrent effectiveness study of them. The programme addressees were community therapists (registered nurses, practical nurses, licenced psychologists) providing secondary care in public psychiatric services. The programme was launched to combat congested patient flow in secondary psychiatric services. The congestion was a consequence of increase in depressive patients, many of them having non-psychotic comorbidities, referred to specialized care. The community therapists in Finland have traditionally been free to choose the treatment practices (orientation and duration) they provide their patients, resulting in heterogeneous practices. This was also considered to aggravate the congestion. The BA was targeted at the treatment of mood disorders and the MI for augmentation if comorbid substance abuse was also present (i.e., dual-diagnosed patients). The effectiveness-implementation hybrid design (28) entailed the programme addressees to take a stand on both arms of the ODP. They were free choosing to take part with the implementation of the intended EBTs only, go along both arms or to stay outside the programme. The management of the psychiatric department selected the intended EBTs as they appraised them being appropriate for the purpose. According to earlier evidence, they anticipated increasing the provision of evidence-based brief psychotherapy interventions would contribute to making the patient flow more fluent (29,30). The design and implementation practices relied on the launchers' expertise in administration, clinical work and in serving as trainers of healthcare professionals. No explicit theoretical model or framework for implementation was used.

Our mid-term evaluation on the ODP (31) suggested that focusing the evaluation on frontline staff only and their perceptions of the EBTs introduced would be too narrow a perspective to explain any summative outcomes observed at the eventual final evaluation point. This led us to broaden our scope on the therapists' perceptions of the executive practices in running the programme and related organizational aspects. We have reported the final longitudinal summative evaluation of the ODP elsewhere (24). This showed that one third of the therapists could be regarded as active adopters a few months after the end of active programme phase. Furthermore, a substantial part of them applied BA and MI in their everyday work less than could have been expected given their usual clientele. These limited outcomes thereby underscored the importance of pursuing a richer picture on the implementation outcomes obtained and understanding of how and why outcomes of these kind were reached.

STUDY AIMS

With the present mixed methods case study we aimed to access in-depth information on the ODP implementation outcomes as well as on the programme executive and related organizational or managerial factors explaining the outcomes arrived at. We discuss how the knowledge obtained could be made use of in future implementation programmes to achieve more extensive dissemination of any intended psychosocial EBTs at the organizational level and sustaining their delivery.

METHODS

CONTEXT

South Ostrobothnia Hospital District in Finland provides public specialized healthcare services to a population of 200,000. At the time of the ODP, the Adult Psychiatry Department comprised twelve outpatient units and five inpatient wards. The ODP was carried out to improve the treatment of depression with possible comorbidities at six units, of which five were outpatient clinics and one an 18-bed acute ward. The largest unit had two separate teams, and the rest one team each. The total number of therapists regularly employed in the units involved in ODP was 72 and they comprised the target group of the programme. Enrolment in the training as well as responding to the surveys was voluntary for them. Due to staff turnover, 84 therapists were stepwise trained in the ODP.

The implementation plan of the ODP included workshops with both active and passive training modalities, case consultations in groups, written and videotaped self-study material and regular visits by research nurses to the units involved. A more detailed description of the ODP has been reported elsewhere (24). The study protocol of the effectiveness study has been described in detail in the appropriate register (32).

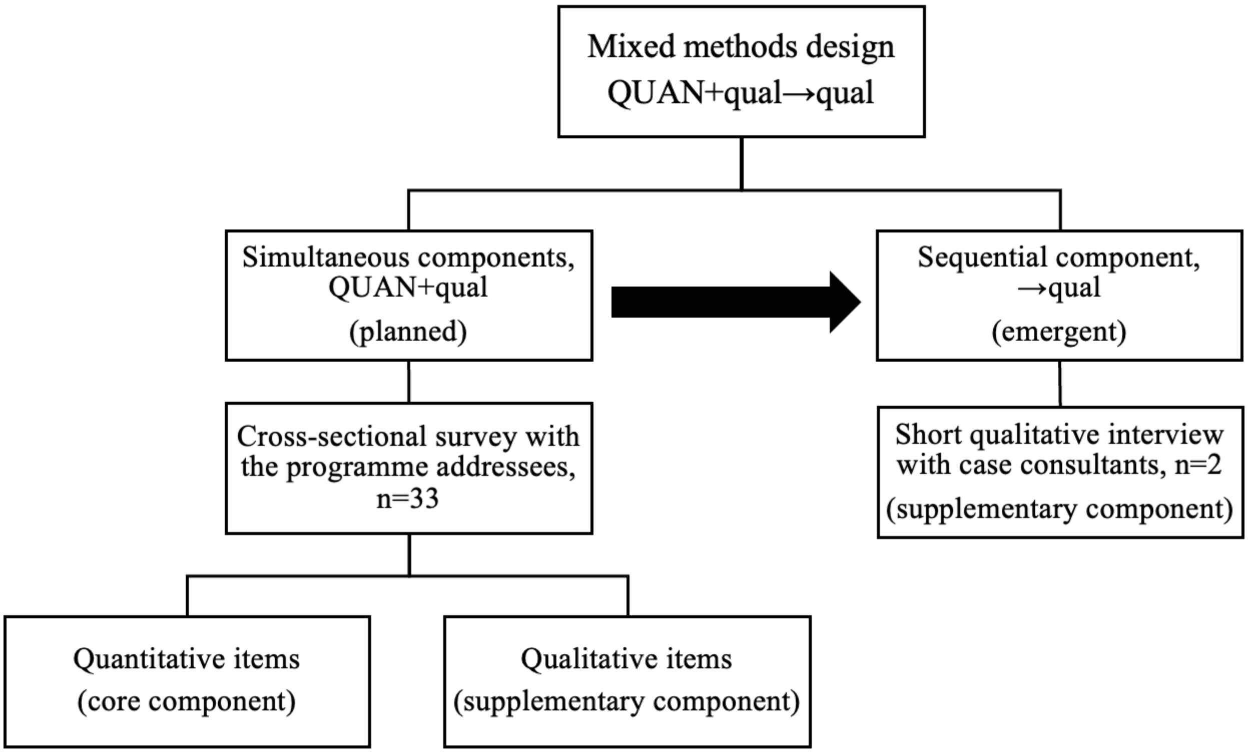
SETTING AND SAMPLE

The present study had a combined simultaneous and sequential mixed methods design (QUAN + qual → qual; *Figure 1*) (33). Quantitative data as the main element, determining the magnitude and direction of the results, while the simultaneously and subsequently collected qualitative data were intended to help in explaining the quantitative results.

A purposeful sampling strategy 'complete target population' was used to form the study sample (34). The sample contained two elements (*Figure 1*): a) it comprised the 33 ODP-trained therapists still employed by the target units and also willing to respond to the survey, and b) the two programme executives responsible for the case consultations. All members of the sample gave their verbal informed consent to participate, for more details see the section "Ethics approval and consent to participate". The study sample of 33 therapists amounted to 46% of the original target group.

All authors but the second (JK) of this article were employed in the ODP managing organization. They and all participants knew each other prior to the study and the participants were likewise aware of the authors' interests in terms of the study.

Figure 1
Mixed methods design



DATA COLLECTION

The first author of this article (LHL) was the principal researcher and gathered the data in March 2014, 4-5 months after the completion of the ODP. A survey of the therapists was administered in each unit during their regular weekly meeting. While initially surveying the survey responses, there emerged a need to enrich the data with interviews with the case consultants. LHL thus built up and conducted a brief semi-structured interview by telephone separately with the two programme executives responsible for the case consultations. Moreover, information on the number of participants in the case consultation groups per session was collected from the list of participants. All the data on the case consultations were integrated during the analysis. Otherwise, the data integration occurred while interpreting and discussing the results.

Instruments

The instruments were specifically designed for the present study. The original instruments were administered in Finnish, the therapists' native language. In reporting the present study, we have adhered to the criteria of Good Reporting of a Mixed Methods Study (GRAMMS) (35).

Quantitative data

Three different types of quantitative measures were used in the survey questionnaire. These comprised the Visual Analogue Scale (VAS), school grade rating (SGR) and multiple choice. The VAS, with a continuum of 0-100 points, is widely used for measuring different individual attitudes or perceptions (36). On the SGR scale 10 equals excellent, 9 very good, 8 good, 7 satisfactory, 6 moderate, 5 adequate and 4 fail. *Table 1* illustrates the use of VAS or SGR with each factor. *Table 2* introduces the item of multiple choice on six possible factors enabling or inhibiting the participants in their efforts to implement new practices. The numbers of participants in case consultation groups were calculated from the attendance lists.

Table 1. Factor and respective quantitative measuring scale

Factor	Measure
Therapist’s perception of progress in each six main clinical goals	VAS
Therapist’s overall appraisal of whether the ODP had a positive impact on the quality of their work (Impact-SGR)	SGR
Therapist’s overall perception of the level of change in clinical practices that the ODP brought at team level (Change-index)	VAS
Therapist’s appraisal of the ODP training intervention	SGR
Had the therapist watched the training videos available in the employer’s website? ⟶ if “yes”	yes - no SGR
Had the therapist participated in the case consultation groups ⟶ if “yes”	yes - no SGR

Abbreviations: VAS = Visual Analogue Scale; SGR = school grade rating; ODP = Ostrobothnia Depression Programme

Table 2. The item examining some organization-related enablers or inhibitors regarding an implementation programme

Some team- or organization-related factors that may enable or inhibit progress in clinical work. We ask you to select all items mentioned in the table which have enhanced or inhibited progress in the treatment of depression during the Ostrobothnia Depression Programme	
Enablers	
1	Support from the administrative management
2	Support from the team leader
3	Support from peers
4	Time spent practising with the team [the programme]
5	Opportunities to spend time practising independently [the programme]
6	Opportunity to acquire new skills
7	Some other reason 1, what ________________________
8	Some other reason 2, what ________________________
Inhibitors	
1	Lack of support from the administrative management
2	Lack of support from the team leader
3	Lack of support from peers
4	Lack of time to practice with the team [the programme]
5	Insufficient opportunities to spend time practising independently [the programme]
6	Lack of opportunities to acquire new skills
7	Some other reason 1, what ________________________
8	Some other reason 2, what ________________________

Note. A blank option was regarded as a neutral experience

Besides extensive dissemination of the intended EBTs among the programme addressees, six clinical dimensions derived from the core characteristics of BA and MI were determined as the main clinical goals: a) comprehensive initial examination routinized with depressive patients, b) clear goals set at the beginning of therapy, c) treatment is terminated when the goals have been satisfactorily achieved or other conditions necessitate the termination, d) substance abuse evaluated early in treatment, e) use of brief psychotherapies enhanced, f) complicated problems detected earlier in treatment leading to more comprehensive needs-based treatment. Operationalization of these items is presented in *Table 3*.

The operationalization of the programme addressees' observations on the progress achieved with the ODP and applying the intended EBTs in their everyday work (observability) is presented in *Table 4*. This item was labelled as Change index. The operationalization of the programme addressees' experience about the quality of the collective support received from their leaders and peers as well as a variety of team-related phenomena and individual issues, such as competing interests or programmes and the time resource available to embrace the intended EBTs are presented in Tables 2 and 4. Including items exploring these aspects above was based not only on their evidence-based nature but also on the fact that the programme executives faced related challenges while running the ODP.

Table 3. Data regarding responses to items on progress on the six clinical dimensions in applying Behavioural activation and Motivational interviewing

Item^b	Mean	SD
To what extent did the practices progress on the following clinical dimensions during the Ostrobothnia Depression Programme?		
a. Comprehensive initial examination routinized with depressive patients	58	24
b. Clear goals are set at the beginning of therapy	64	9
c. Treatment terminated until the goals have been satisfactorily achieved, or the conditions do not allow the treatment to continue	58	22
d. Substance abuse is evaluated early in treatment	71	22
e. Use of brief psychotherapies enhanced	59	21
f. Complicated problems are detected earlier in treatment leading to more comprehensive needs-based treatment	61	19

^{b}n = 33 for all items in Visual Analogue Scale with extremities 0 = "not at all" and 100 = "as well as possible". The means were graded as <50 = failure, 50 = moderate and >50 success

Table 4. Data regarding perceived support from the team leaders, Change index and some possible obstacles

Item	Mean	SD
To what extent you perceived the team leader supported your participation in the Ostrobothnia Depression Programme?	60	29
The ODP has led to changes in the clinical practice followed by our team (Change index)	41	24
To what extent have the following possibly hampered the execution of the Ostrobothnia Depression Programme in your team?		
a. Other simultaneous developmental tasks or projects	60	29
b. Personal exhaustion due to a variety of projects	40	30
c. Other current team-related internal issue	44	33
d. Other current organizational issue external to own team	51	33

Note: n = 33 for all items in Visual Analogue Scale with extremities 0 = "not at all" or "hampered very seriously" and 100 = "as well as possible" or "did not hamper at all". The means were graded as <50 = failure or serious, 50 = moderate and >50 success or easy

QUALITATIVE DATA

Two open-ended items were used in the questionnaire and a focused brief semi-structured interview with two programme executives was conducted.

The first survey question elicited therapists' general perceptions of the goals of the ODP and read: "Name the three most important goals that you perceive the ODP was intended for." A twofold open-ended question - 'Censure and Praise' - was used to collect negative and positive feedback on the ODP: a) "Name two major issues which should have been done in some other way during the ODP", and b) "Name two major issues which succeeded particularly well in executing the ODP".

The trainer-consultant and research nurse responsible for the case consultation groups were interviewed retrospectively using a semi-structured protocol (see Additional File 2) to add to the information on participation activity in the case consultations. The interviews were conducted by telephone and separately, they lasted about twenty minutes each. The questions were focused and formulated to elicit information that would be easily articulated and easy to take notes on.

DATA ANALYSES

Analysis of quantitative variables

Frequencies were calculated for the classified variables. Means and standard deviations (SD) were calculated for VASs and SGRs. Cronbach's alpha was calculated to test the reliability of the six-item set for the main clinical goals.

Spearman's correlations were calculated between the following means: Impact-SGR, perceived support from team leaders, the Change index and each four possible obstacles. Two hierarchical linear regression models were used to predict the Impact-SGR. The first model included support from team leaders and four possible obstacles as explanatory variables. The second model included the explanatory variables of the first model and the Change index.

Activity rates were calculated for watching videos and attending case consultations.

Qualitative analysis

Responses to both open-ended questions - the therapists' perceptions of the three most important goals of the ODP and the Censure and Praise - were both analysed using qualitative content analysis (37). Manifest expressions were objects of interest. The item Censure and Praise was further analysed by a typological method to form the respective model cases (38). The analysis methods are described in more detail in Additional File 1.

Mixed methods analysis of the realization of the case consultation groups

A report on the short semi-structured interviews with those responsible for the case consultations was written immediately after the interview on the basis of the notes taken and elaborated after receipt of exact information on attendance rates by session. The interview protocol and the report on the realization of the case consultation groups (English translation) are presented in Additional File 2. The first author of this article (LHL) extracted possible explanatory factors pertaining to attendance at the case consultations from both that report and the therapists' responses to Censure and Praise. Two different techniques were used to ensure the credibility of the data on the case consultations and the results extracted: triangulation and subjecting the data report to member checking (39). Triangulation refers to the use of two or more different techniques or data sources to explore the same object (39).

RESULTS

QUANTITATIVE DATA

The therapists' perceptions of progress achieved (mean±SD) in the main clinical goals, each measured by VAS, varied between 58±24 and 71±20 (*Table 3*). Addressing substance abuse early in treatment obtained the highest scores, followed by enhancement of goal setting at the beginning of the therapy. The reliability of this six-item set was 0.8 (Cronbach's alpha).

The therapists appraised the positive impact of the ODP on their own work with a mean SGR of 6.8 (SD 1.1). Their perceptions of the degree of the Change index, support from team leaders and four possible obstacles to being engaged in the ODP are presented in *Table 4*. Of these obstacles, "Personal exhaustion due to a variety of projects" manifested with the lowest scores of 40±30 (mean±SD) and the "Other current team-related internal issue" came after with scores of 44±33, meaning that those issues did indeed hamper the execution of the ODP.

The training programme obtained a mean SGR of 7.5 (SD 1.3, n = 33). The training videos obtained a mean SGR of 7.9 (SD 0.6, n = 21), and the case consultations groups of 7.9 (SD 0.8, n = 18). Twelve (36%) of the responding therapists had not watched the videos and 15 (45%) had not attended the case consultation groups.

In the linear regression models explaining the Impact-SGR, support from team leaders was a significant explanatory variable in the first model and Change index in the second model (the support from team leaders lost its significance in the second model) (*Table 5*).

The question on factors that may enhance or inhibit progress (*Figure 2*), "opportunity to acquire new skills" was markedly stressed as enhancing and two items indicating support from peers and managers also were stressed slightly positively. By contrast, the experiences of time resources available for practising alone and together with the team both suggested a deficit, which inhibited progress.

Table 5. Coefficients of linear regression mediator model predicting the therapists' appraisal of Ostrobothnia Depression Programme (ODP) with a school grade rating

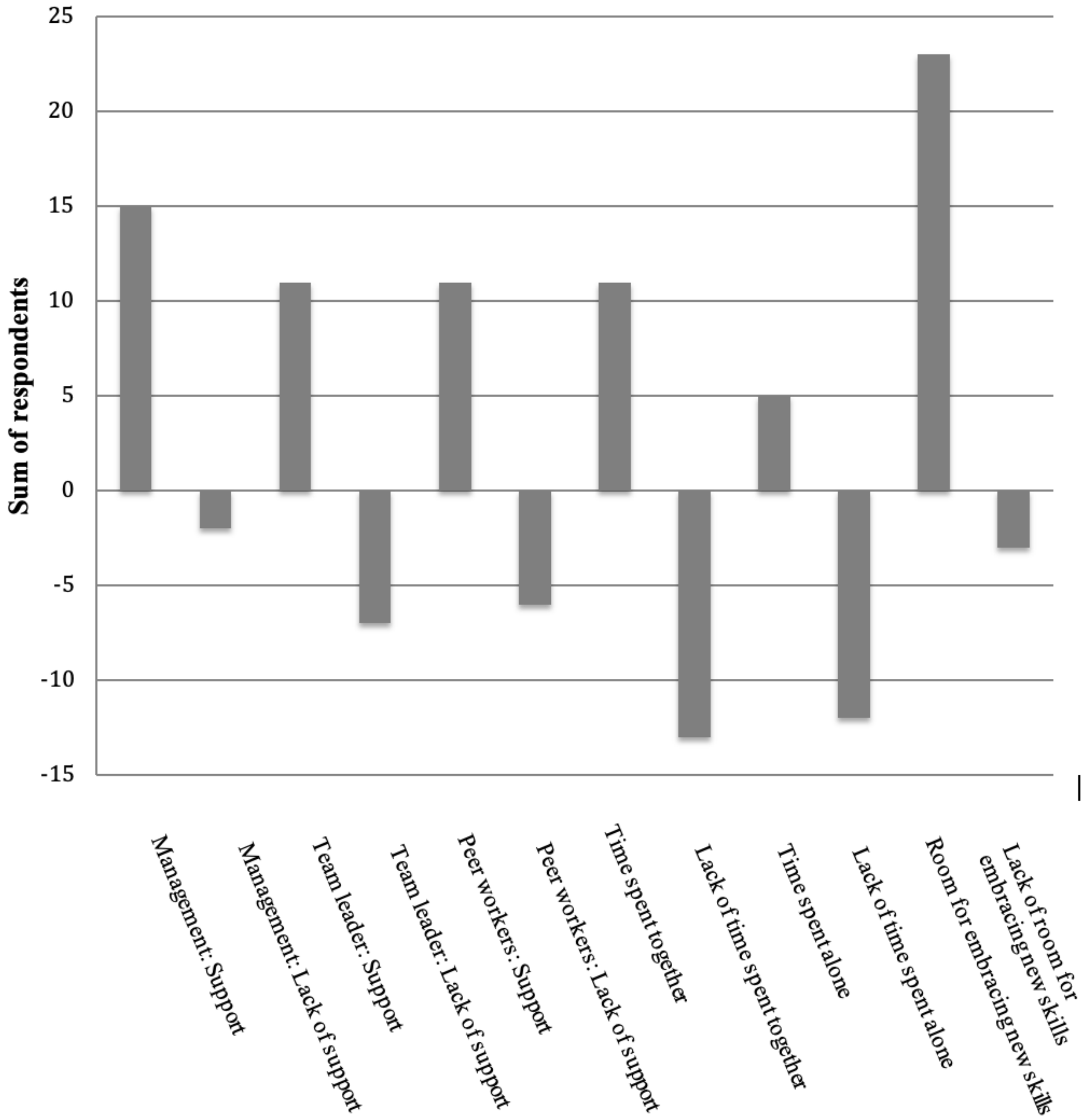
		Unstandardized Coefficients		Standardized Coefficients	
Model		B	Std. Error	Beta	Sig.
1[a]	Support from the team leader[b]	0.014	0.006	0.362	0.039
2[a]	Support from the team leader[b]	0.008	0.006	0.220	0.181
	The ODP has led to change in clinical practice followed by the teams (Change index)[c]	0.020	0.007	0.442	0.010

[a] Adjusted R Squares were 0.103 and 0.259 for models 1 and 2 respectively

[b] The quality of programme facilitation the programme addressees perceive receiving from their team leaders

[c] The extent of change in local clinical practice the programme addressees perceive the ODP has brought about

Figure 2. The sum of responses where the therapists perceived whether each specific team-related factor enabled (positive direction on the y-axis) or inhibited (negative direction on the y-axis) progress in the treatment of depression during the Ostrobothnia Depression Programme



QUALITATIVE DATA

The open-ended question exploring the therapists' perceptions of the three most important goals of the ODP obtained 92 responses. The question itself provided the main category: 'therapists' perceptions of the most important goals of the ODP'. Subcategory formation was data driven but also reflected the ODP launchers' ambitions about domains of possible programme achievements. This yielded the four following subcategories and the responses distributed between them as follows: Perspective of own work, e.g., new tools, n = 25; Perspective of patient, e.g., better treatment, n = 25; Perspective of team, e.g., common practices, n = 21; and Perspective of research e.g., comparing EBT and treatment as usual, n = 21. The analysis process and the formation of the coding frame are presented in more detail in Additional File 1.

In the qualitative content analysis of the open-ended questions for feedback, the item itself provided the two main categories: Censure (C) and Praise (P). These responses were analysed jointly and this yielded three data-driven subcategories: feedback on training and clinical support, feedback on the treatment model implemented and feedback on the simultaneously conducted implementation programme and clinical research. A few responses could not be classified, and were therefore labelled as non-categorized feedback. Each response was allocated to an appropriate subcategory. The data were further analysed by the typological method, which resulted in model cases of C and P types for each of the three subcategories. A concise summary of these is presented below. The process of the analysis and the model cases are presented in more detail in Additional File 1.

Feedback on training and clinical support comprises satisfaction and dissatisfaction with equal emphasis. The C type would have wished for decentralized clinical support, more comprehensive training and more thorough onboarding of newcomers.

Feedback on the treatment model implemented was decidedly positive, demonstrating the feasibility of the treatment model. Moreover, the integrated treatment model was reported to facilitate addressing the dual diagnosed patients' needs during the treatment. The opposite experience, but with less emphasis, highlighted the inflexibility of the treatment model.

Feedback on the simultaneously conducted implementation programme and effectiveness study was mostly critical regarding the concurrent timing, practice of administering the research and unfair accumulation of workload related to the patients enrolled in the clinical research.

MIXED METHODS ANALYSIS OF THE CASE CONSULTATIONS

Attendance at the case consultation groups was at its highest during the first year and then declined slightly until it fell considerably during the last year, due to reasons related to both the organization and to individuals. The following possible explanatory factors were identified: variation in geographical distances, differences in attitude towards the ODP between the units, a change in the profile of the clientele during the programme and the fact that some therapists became discouraged over time. Two units were located very close to the venue and the rest about an hour away by car, thus reaching the case consultations was quite time-consuming for clearly more than half of the therapists. Of the two closest units, one achieved the highest attendance rate and the other the lowest rate. In the most active unit, the team leaders actively allocated time to enable the therapists to attend. By contrast, in the most inactive unit, the ODP had been subject to considerable scepticism from the very beginning. The analysis of the attendance activity to the case consultations is presented in more detail in Additional File 2.

DISCUSSION

We performed a comprehensive analysis of the ODP participating therapists' perceptions of the success with the main clinical goals of applying the two EBTs, BA and MI, as well as programme executive and related organizational or managerial issues likely to enable or inhibit their implementation. The present results complement our earlier summative evaluation (24). The main results of our study were twofold. First, moderate improvement was achieved in clinical goals pertaining to applying the implemented EBTs, with improvement of the integrative treatment of dual-diagnosed patients as a spearhead. Second, the results spotlighted the importance of the availability and accessibility of clinical support as well as the allocation of time resources to embrace new and complex treatment practices. Support from the leadership and the influence of peers both played a significant role in achieving progress. Conversely, lack of decentralized clinical support and shortage of time for practising were two factors, which, according to the therapists, had impeded progress. Also, the open feedback revealed a need for more thorough training for some of the therapists and better onboarding of newcomers. Our findings are in line with those of earlier research (10,15,33–36).

In psychiatric care, the adoption of EBTs tends to disseminate among the target group less during an active programme phase than the programme launchers might expect (14,17,37,38). Furthermore, without appropriate maintenance strategies their use tends to decline over time. Hence, deploying specific strategies for integrating new EBTs into an organization's routine structures and processes is a prerequisite for sustaining implementation outcomes and scaling them up after the active programme phase. (1,2,39). Unfortunately, a total lack of such strategies was found in our earlier published evaluation of the ODP implementation plan (24), which will jeopardize the sustainability of the achieved outcomes.

Our present results show that the case consultations and the training videos were both underutilized. Nearly half of the responding therapists had not attended the case consultation groups and about a third had not made use of the training videos. To our knowledge, there is a lack of studies addressing activity in utilizing such training videos in the context of implementation programmes. However, providing self-study material to facilitate practising has been included among the best practices contributing to the implementation of innovations (40).

The above raises some fundamental questions: How to address the justified call for more comprehensive training and clinical support as well as time resources for acquiring the necessary skills in the target EBT? In addition, what could be the appropriate and feasible integration strategies to ensure the long-term survival of EBT implementation programme outcomes? In fact, these questions cannot be answered separately; they rather form an interconnected network of strategies and actions. We will next articulate some possible views on these critical questions drawing on our present results and earlier research in order to improve the effectiveness of future programmes.

ROLE OF CASE CONSULTATIONS

Case consultations have been shown to be essential in implementing a psychotherapeutic EBT in terms of dissemination and sustained adoption (9,14,35). They make it possible to enhance attendees' knowledge of the EBT introduced and strengthen their skills in applying it in their everyday work. Organizing the case consultations more accessibly may be one option to satisfy the need for the more robust clinical support the therapists called for in the ODP.

An implementation project at the Veterans Health Administration (VHA) in the USA achieved a rate of 77% in adopting prolonged exposure therapy, an EBT for the treatment of post-traumatic stress disorder (14,35). Attending the case consultations after the four-day workshop was mandatory, which it was not in our ODP. Furthermore, the case consultations were carried out by telephone twice a week both in groups and individually, and they were supported by audio recordings of the therapy sessions. A minimum of two cases treated with a good level of competency was required before the issue of a certificate of having completed training. In another study, a cognitive behavioural therapy (CBT) application was implemented among community therapists by means of a one-day workshop followed by optional weekly case consultations for three months (4). The two-year follow-up showed that the time the therapists spent in the consultations during the active programme phase correlated positively with the sustained use of the CBT application (9).

In the ODP we identified factors enabling and inhibiting attendance at the case consultations. The positive attitude of team leaders together with their active allocation of time enabled more frequent attendance at the case consultations. Instead, the considerable time needed to travel to the venue for most of the therapists and, in one unit, a sceptical attitude toward the programme were two obvious factors undermining attendance.

The evidence reported above supports merging workshops and case consultations into one entity or training programme. The case consultations should not be optional for therapists enrolled on the programme. However, attending the case consultations should be made convenient and easy. The example of the programme at the VHA encourages deploying remote access, e.g., feasible web applications are available today. Also, positive means of noting an individual trainee's progress in skills would be fruitful. At the VHA, this was sought by the requirement to have completed treatment of two cases with a good level of competency before being issued with a certificate of completed training.

TEAM LEVEL CLINICAL SUPPORT AND TIME ALLOCATION

In the ODP, the therapists called for the clinical support to be decentralized. We regard this as a request to enhance local or team level strategies to promote delivery of the target EBTs. In addition, in the therapists' experience, lack of time hampered the acquisition of the new skills during everyday work, which is corroborated in other studies (35,36). Programmes come and go, organizations continue. Thus, clinical support practices should be incorporated into the organizations' routine structures (1). Team leaders are a formal and central influential stakeholder group to collaborate with as early as in the pre-programme phase in order to achieve progress on this issue. Their actions are crucial to the fulfilment of organizational strategies, fostering a positive implementation climate and sustaining implementation outcomes at the team level (10,11). However, it is not self-evident that team leaders, who usually serve as both clinicians and leaders, are aware of all the means available to contribute to an implementation process.

Our results pinpoint two possible evidence-based means available to the team leaders in addressing the need for more robust local clinical support in implementing an EBT: empowering programme champions and allocation of time resources needed to make good use of the programme facilities. In our case, a programme champion refers to a therapist who would be among the first to take over a new EBT and so be able to provide peer support to colleagues in embracing the EBT (33,41). Some of these early adopters may be keen to acquire more thorough training to be nominated as formal peer facilitators (40), which we recommend taking into account in future implementation plans right from the outset. The team leaders could foster local support practices by sponsoring the rise of socially acknowledged peer facilitators and guiding their teams to prioritize the use of the intended EBT (41). Managerial actions of this kind have been proven to promote the dissemination of the EBTs introduced and sustain their delivery(13,15,35,42). Allocating time for studying the self-study material jointly with the team, e.g., watching the training videos, could be an easily harnessed strategy for team leaders to foster implementation. This also gives them opportunities to render the climate more favourable towards the EBT introduced. Beidas et al. (43) have described an advanced means of concerted behavioural rehearsal should some teams become more inspired by investing greater effort in learning together.

MANAGERIAL PRACTICES AND BUILDING ORGANIZATIONAL STRUCTURES AS INTEGRATION STRATEGIES

The NPT concept 'integration strategies' refers to all deliberately deployed processes intended to support the personnel in maintaining the adoption of the intended EBTs in their organization (1). Lack of integration strategies emerged in the longitudinal summative evaluation of the ODP (24). The stability of leadership and the leadership style have been shown to be the main issues having a significant impact on the long-term survival of programme outcomes (11,38,44). Aarons et al. (44) stated that frontline transformational leadership predicted sustaining of implementation outcomes while passive-avoidant leadership predicted failure to sustain. In the case of ODP, some of the therapists reported that their team leaders supported the EBTs' implementation. However, we lack details on this support. Peterson et al. (11) defined more precisely the relevant tasks the leaders should deploy to ensure the long-term vitality of the outcomes: field mentoring, group supervision, training outcome monitoring and fidelity reviews. It would be highly desirable that the original programme plan should involve strategies that coach the leaders to establish those tasks. Proctor et al. (49) have reported a training intervention in implementation practices for leaders, which could provide evidence-based tools being deployed in healthcare organizations and thus enhance the quality of EBT implementation programmes. This would partly address the challenge of implementing evidence-based implementation strategies (50).

Field mentoring and group supervision refer to practices that involve the team leaders spending time with their teams in regular meetings discussing successes and concerns in applying the intended EBT and facilitating its delivery (45). These enable the leaders to be aware of the vitality of the EBT and the level of competence in it among their teams. Awareness of this information is a prerequisite for being able to plan appropriate actions to further promote the implementation. These actions include not only addressing the need for complementary training after the active phase of a programme, but also the need for stable mechanisms that make it possible to guide newcomers to get training in the basic skills of the EBT (45). Our results revealed a deficit in building permanent structures for addressing the continued need for training in the EBTs introduced. As a part of an EBT implementation programme, it should be ascertained that there are available permanent organizational structures and policies that enable the long-term maintenance of the EBT. If these are lacking, they should be built up.

LIMITATIONS

The modest response activity constitutes the major limitation to the study. No information was collected from the decliners and therefore their attitudes towards the ODP remain unknown. Bias of this kind was difficult to avoid in a real-world setting when anonymity was preserved, and there was no explicit protocol for enrolling participants in the implementation study. In addition, lack of a separate engagement strategy for the team leaders may also have affected the response activity. However, the good quality of the responses obtained to the open-ended questions permits speculation on the likely experiences of the non-responders. A second limitation was the use of the measures developed for this particular study, which impedes the generalizability of the present results and also comparison with earlier studies. A similar challenge has also been common in earlier implementation studies (16,46,47). The interviews with those who served as case consultants were neither audio recorded nor transcribed, which deviates from the conventional way of analysing a qualitative research interview and thus undermines the quality of the respective part of the data. On the other hand, the use of triangulation and member checking enhanced the credibility of this part of the data. However, we decided not to audio record and transcribe the interviews as the information of interest was clearly verbally articulated, the questions were short and specific and both interviews of short duration.

CONCLUSIONS

Based on our results we highlight three important aspects in terms of an EBT implementation programme: 1) the role of team leaders, 2) the structure of the training intervention in the EBT and providing low threshold clinical support as well as 3) stable organizational structures that ensure the long-term maintenance of the EBTs implemented. The team leaders should be engaged with the implementation programme at an early stage to ensure its successful execution and long-term survival of its outcomes. This includes coaching the leaders to deploy evidence-based managerial practices, connected to, e.g., ‘transformational leadership’, to promote the EBT implementation actively among their teams. We suggest combining workshops and case consultations as an integrated training package. Completion of training would entail accomplishing both components. Consultative support should also be available during the everyday work. Access to consultations should be made as easy as possible from the staff’s point of view. This need could be addressed, for example, by training and nominating local peer facilitators. To ensure the sustained delivery of the EBT despite staff turnover the organization should establish stable structures enabling newcomers to be trained in the EBT even after its initial implementation programme. The implications we presented above fall into NPT categories embedding and integration, which have a decisive role in terms of the reproduction and longevity of EBT implementation programme outcomes.

ABBREVIATIONS

BA:	Behavioural activation
CBT:	Cognitive behavioural therapy
C and P types:	Censure and praise model cases or types
EBT:	Evidence-based treatment
GRAMMS:	Good Reporting of a Mixed Methods Study
MI:	Motivational interviewing
NPT:	Normalization Process Theory
ODP:	Ostrobothnia Depression Programme
SD:	Standard deviation
SGR:	School grade rating
USA:	United States of America
VAS:	Visual Analogue Scale
VHA:	Veterans Health Administration

DECLARATIONS

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The ODP-related implementation research was not medical research nor did it carry any experimental initiatives or interventions. Its participants were all staff members. The survey was conducted anonymously. When the ODP-enrolled therapists were asked to respond to the survey they were verbally informed that the answers would be analysed and the results published, and that responding would serve as consent both to participate and to publication. Further, they were informed that responding was voluntary, and responding or not would not affect their status in any way. The ODP was managed and supported by the local administrative staff. According to the Finnish research regulations, the ODP-related implementation research was exempt from ethical review (Finnish National Board of Research Integrity, TENK publications 3/2019). Hence the present study was not subjected to ethical review.

CONSENT TO PUBLICATION

See the previous section.

AVAILABILITY OF DATA AND MATERIALS

The original datasets (in Finnish) generated and analysed during the present study are available from the corresponding author on request. Only the results presented in the article have been translated into English. The previous version of this manuscript has been published earlier as a preprint in Research Square (54).

DISCLOSURE STATEMENT

Authors LHL, AL and OK were employed in the target organization during the study. In addition, AL and OK were in charge of designing and running the programme under study. JK has no conflicts of interest to disclose.

FUNDING

We gratefully acknowledge the study sponsors for partial financial support: the South Ostrobothnia Hospital District Research Fund, the Finnish Psychiatric Association, the Gust. Rud. Idman Fund/Finnish Medical Foundation Duodecim and the South Ostrobothnia Fund/Finnish Cultural Foundation. The study sponsors had no role in the study design, collection, analysis, or interpretation of the data or made any other contribution.

AUTHORS' CONTRIBUTIONS

LHL and OK prepared the present study's conception and design. LHL performed material preparation and data collection. All authors contributed to the analysis and interpretation of the results. LHL wrote the first draft of the manuscript and all authors commented on previous versions of it. All authors have read and approved the manuscript.

Supplementary Material

Supplementary data are available at [Psychiatria Fennica online]

Acknowledgements

We thank all participants involved in the ODP and research nurses Susanna Ahola and Marja Koivumäki for their valuable contributions to this study, as well as Virginia Mattila for reviewing the language of the manuscript.

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THE FINNISH THERAPY NAVIGATOR – DIGITAL SUPPORT SYSTEM FOR INTRODUCING STEPPED CARE IN FINLAND

ABSTRACT

Introduction: The need to improve quick access to effective psychological treatments is urgent. Success requires effective tools for identifying what kind of therapies an individual is likely to benefit from and managing a comprehensive therapy offering that matches an individual's needs. First-line therapies initiative (Terapiat etulinjaan–toimintamalli) is a national initiative started 2020 in Finland. It aims to help Finnish regions in building locally sustainable stepped care systems and providing the support services needed. One key service of First-line therapies initiative is the Finnish therapy navigator (FTN). The FTN is a digital tool to help assess individual needs for psychosocial treatments and to build a regionally sustainable stepped care treatment offering, as part of the national reform of social and health services. This paper describes the development, content, implementation and feasibility of the FTN. Materials and Methods: The system was piloted in six regions in Finland between October 2021 and May 2022, with a catchment area of around 600 000. The feasibility data was collected from professionals (n = 48) using the system at 1 and 4 months after implementation, and from the anonymous FTN responses (n = 2630). Results: Professionals estimated the FTN had a positive impact on their work, quality of assessment and notes, and patient experience at 1 month after starting to use the FTN. Satisfaction scores improved further at 4 months, and 93% of users wanted to keep FTN as a permanent tool. The mean time patients used to fill the FTN was 24 minutes; 75% of clinical interviews lasted under 30 minutes. The FTN provides important data on treatment seekers. In our sample 57% of respondents scored between 10-19 points on PHQ-9 and 59% between 5-14 on GAD-7, suggesting mild-to-moderate depressive and anxiety symptoms. 28% reported no previous psychosocial treatments and 33% previous treatments shorter than 6 months. Thus, it seems that a significant proportion of treatment seekers in Finland could benefit from readily available, short-term, evidence-based psychosocial treatments that the First-line therapies initiative supports. Conclusions: FTN is a feasible tool for first assessment of mental health issues in primary care. Implemented and localized using the manualized co-creation process results in very high user satisfaction and acceptability of the system. The FTN provides important real-time data on mental health treatment seekers to support service development and planning. The First-line therapies model that includes introducing FTN in combination with regionally adapted care pathway development, education in short evidence-based psychological interventions and increase in use of digital support systems appears a feasible way to build regionally sustainable stepped systems.

KEY WORDS: MENTAL HEALTH CARE, FIRST-LINE THERAPIES INITIATIVE, DIGITAL ASSESMENT, STRATIFIED CARE, PSYCHOSOCIAL INTERVENTION

1. INTRODUCTION

A solid body of evidence supports the cost-effectiveness of psychotherapeutic interventions for mental disorders (1–3). Nevertheless, organizing a comprehensive psychotherapeutic service that can implement evidence-based treatment methods and realize measurable benefits in real-life is complicated (4–6). One key component of success is the ability to coordinate evaluation and treatment initiation so that patients are directed to the correct form and intensity of treatment in optimal time (7).

Optimization of psychotherapeutic interventions on a systems level is exceptionally hard. Interventions are often provided on many levels of healthcare systems in complex multiple provider settings. Numerous interventions are used for the same health problem, the choice often depending more on provider orientation than patient needs. To manage a psychotherapy service system in an evidence-based manner, one should be able to consider treatment availability, waiting times, the process of matching patients to therapists, therapy process, multidimensional outcomes and side effects, costs and personnel issues. This data collection should start from the moment a person seeks help for the first time.

Treatment optimization can be done following a stepped care model (always trying less intensive treatments first) or a stratified model (trying to start optimally effective treatments directly). Both stepped and *stratified* approaches can be optimized using a plethora of variables yielding a variety of different algorithms. Simplified, a system optimized on effectiveness or patient satisfaction may look different from a system optimized on costs. In publicly-funded healthcare systems like Finland's, the aim should be to try to optimize the cost-effectiveness on system level, while ensuring no individual is left out of necessary services. This naturally leads to a *modified stepped care* model, where patients are allowed to skip steps, based on professional evaluation of individual needs.

One option to manage complexity is to create a new, separate health system for psychotherapy, like the improving access to psychological therapies (IAPT) model in the UK. Another one is to try to guide each patient individually, based on data, within an existing complex system. For this purpose, we created the Finnish Therapy Navigator (FTN), a digitally supported system for structuring the assessment of treatment needs and creating optimized stepped care systems out of locally varying treatment options.

The Finnish healthcare system is undergoing a thorough reform in 2023 that centralizes responsibility for health services from 330 municipalities to 21 regions. To help with this transformation, the Finnish government is funding development of the First-line Therapies (Terapiat etulinjaan - toimintamalli), a national initiative coordinated by Helsinki University Hospital.

The First-line therapies model provides comprehensive services for creating and maintaining a stepped care model of evidence-based psychosocial treatments appropriate for Finnish healthcare structures. Services provided in addition to the FTN include a common gateway to digital self-help programmes, psychoeducation and materials for professionals (www.mielenterveystalo.fi), a national web-based education system for evidence-based psychosocial treatments, quality registry and several layers of co-creation and coaching structures.

INTERNATIONAL BENCHMARKING OF DIGITAL THERAPY GUIDANCE SYSTEMS

Optimizing therapy at an individual level is subject to great research interest (8). Specific factors such as diagnosis and therapy framework appear to explain only a minor part of the variation in treatment effects (9). Optimizing the so-called common factors (e.g., trust, alliance, common understanding of therapy goals and methods) is likely to be important, as they account for a large proportion of variance in therapy outcomes (10–12). Thus, the "therapy navigator" should be able to guide the individual to optimal treatment and predict individual outcomes and also try to boost the non-specific determinants of treatment effects, for example, by considering patient preferences, expectancies, timing and local circumstances, like availability of different treatment modalities.

The final aim of therapy guidance systems is to optimize therapy outcome for the individual. Internationally there are a few digitally supported systems for this. One such is the Decision Support Tool (DST), developed in an Australian stepped care approach Link-Me and its predecessor Target-D (13). DST consists of an individual's responses to 23 items which assess psychosocial factors such as gender, mental health history and current symptoms, general health, living situation and financial security. According to the responses the DST stratifies individuals into minimal/mild, moderate or severe symptom prognostic groups. Then the Link-Me guidelines can be used to choose a treatment pathway depending on the predicted symptom severity, either for low intensity or high intensity care. DST has shown promising results for reducing depressive symptoms over 3 months and psychological distress with prognosis-matched care compared to treatment as usual (13,14).

Another web-based tool offering digital mental health triage and treatment recommendations is StepCare, which aims to assist the provision of a stepped care approach and digital mental health intervention delivery in Australian general practice setting (15). StepCare screens individuals for symptoms of depression (PHQ-9) and anxiety (GAD-7) and it includes sociodemographic and prior treatment-related questions. StepCare provides general practitioners with 3-step treatment recommendations matched in intensity to the level of symptom-based need. In another stepped care setting, the North American Stepped Care 2.0 model applies a brief intake assessment that uses the Behavioural Health Measure (BHM-20/43), an electronic client-report questionnaire that assesses behavioural health and can be completed on tablets in the waiting room during first walk-in (16). In Stepped Care 2.0 patients start with the lowest intensity or the step of care that fits their needs. The patients' level of readiness and preference of care primarily guides treatment decisions, with Stepped Care 2.0 relying less on symptom severity and complexity.

Recent sophisticated methods to guide treatment selection utilize prognostic indices (PIs) or machine learning to predict whether a patient will recover with a given treatment (17,18). PIs have been used, for example, to develop models of case complexity to enable mental health providers and clinicians to select low or high intensity treatments in stratified care settings (19,20). One such example is the Leeds Risk Index (LRI), a tool to assess whether a patient has a low, moderate or high risk of poor response to psychological treatment (21). Preliminary research indicates that early case complexity detection and high intensity intervention matching could have the potential to improve overall treatment outcomes, although this is still unclear (19,22).

The FTN, in brief, focuses on clinical prognostic indicators by collecting information on current symptoms, as well as prior treatment, current social and working ability and treatment preferences. The FTN also considers possible traumatic events and recent crises and life events. This information is then summarized for the interviewing clinician, who uses it according to the First-line Therapies manual to identify optimal stepped care options.

This paper describes the rationale, development, piloting and initial results of using the FTN.

2. DEVELOPMENT OF THE FINNISH THERAPY NAVIGATOR

The FTN was developed in a government-funded First-line Therapies (Terapiat etulinjaan) initiative. This initiative has built a comprehensive stepped care therapy model and support services needed to implement it in Finnish primary care, as part of the ongoing national social and healthcare reform. The FTN is a key element of the system.

Separate versions of the FTN are developed for adults, adolescents and children. This paper describes the development and pilot results of the adult version.

DESIGN OBJECTIVES

The FTN for adults was created to support an efficient first-line assessment process combined with a stepped care model, with high acceptability for professionals and patients to facilitate voluntary and sustained use of the system. Key system level objectives were those of the First-line therapies initiative, i.e., to increase the use of readily available, evidence-based psychosocial treatments and introduce a stepped care model into Finnish primary care. Key design principles of the system were the following:

The target group for FTN was primary care service users, and thus the instrument facilitates assessment for common mental health problems that can be treated in primary care and can benefit from fast treatment initiation and low intensity treatments: depression, anxiety, sleep disturbance or fatigue symptoms. Conversely, people with neuropsychiatric disorders, bipolar disorder, eating disorders, psychotic disorders or severe substance abuse disorders, were not the primary target population. These conditions are more rare than depressive and anxiety disorders in primary care, and not ideally treated with low intensity therapies.

The efficiency of the assessment was increased by pre-collecting and pre-organizing key patient information for the assessing clinician. The patient seeking help is asked to fill in the FTN prior to the meeting with a healthcare professional. The assessing clinician has access to the information and is then able to complete the assessment with a 10–20-minute semi-structured interview by phone. Patients eligible for low intensity interventions can be directly referred to treatment, allowing for swift treatment initiation and redistribution of professionals' time from assessment to treatment.

The primary target symptom for intervention needed to be identified in the initial assessment, as many manualized low intensity psychological treatments are symptom specific.

Depression, sleep disturbance and exhaustion were each considered possible target symptoms. Anxiety was divided into generalized anxiety, social anxiety, panic symptoms, obsessive-compulsive (OCD) symptoms and post-traumatic symptoms.

A stepped care model with 4 steps was designed with Step 1 indicating the lowest treatment intensity (see *Figure 3*). Steps 1 and 2 were designed for rapid treatment initiation without the delay of a mandatory physician-assessed diagnosis, following the First-line Therapies model. The FTN would not force a choice between steps, but the FTN and the accompanying user manual would give guidelines for choosing the ideal step. The most suitable intervention on that step would be chosen collaboratively.

For acceptable user experience, the length of the FTN was limited by prioritizing information most essential for the assessment criteria and omitting rare mental health problems from the screening. This is in line with the "self-correcting" properties of the stepped care model, i.e., that the patient should be referred to a physician assessment and/or higher intensity treatments, if he/she would not recover with low intensity treatments.

Anonymity was a key design feature of the system. The aim is to lower the threshold to seek help and build a pathway to the rapidly evolving field of digital self-help programmes and other resources, the development of which is also included in the First-line Therapies initiative.

THE FTN ASSESSMENT INSTRUMENT

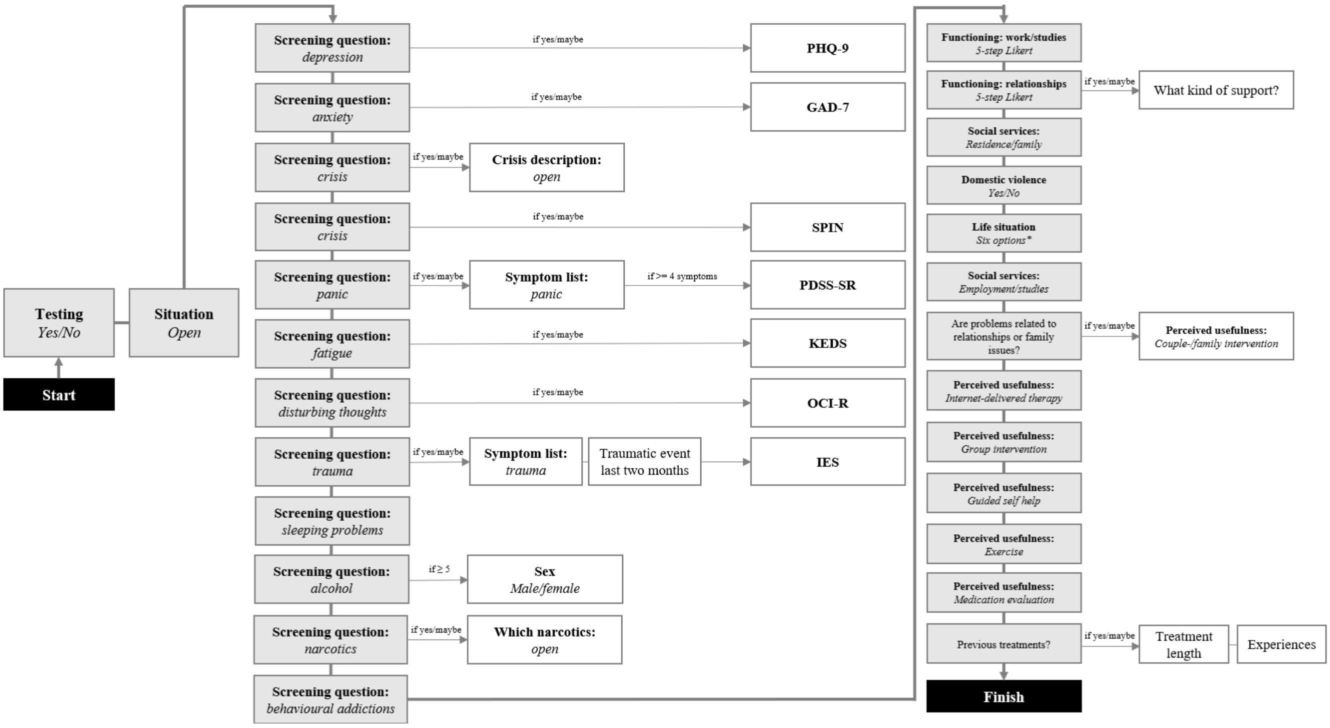
The FTN aims to improve the quality and expedite the process of first assessment. Therefore, the system contains instruments measuring not only symptoms, but also self-reported problem description, significant life events, social and vocational functioning, previous treatments and need for social or vocational support services. Treatment preferences are specifically inquired concerning internet-delivered therapy, group interventions, guided self-help, physical exercise, medications and short couples or family interventions in the case of couples- or family-related problems. The FTN consists of a decision tree which is modified based on the responses of the user (*Figure 1*).

First, the user declares whether they are just testing the system or not. Next, the user gives an overview of their current situation and then continues to the screening questions. The user is instructed not to fill in any identifiable information to maintain anonymity.

The psychometric instruments were selected from internationally and nationally validated questionnaires. To minimize burden to patients, each psychometric instrument is preceded with a screening question, with full instrument opened to screen-positives. To minimize false-negatives the screening questions have three answer options, with both 'yes' and 'maybe' responses opening the full instruments. This provides the option to tighten screening criteria for future versions if indicated by data.

Some themes only include screening questions, and the problem is addressed in more detail during the interview. Only a brief history of previous psychological treatments and their overall length was included to maintain anonymity.

Figure 1. The content and flow chart of FTN. Abbreviations: PHQ-9: Patient Health Questionnaire, GAD-7: Generalized Anxiety Disorder 7-item scale, SPIN: Social Phobia Inventory, PDSS-SR: Panic Disorder Severity Scale Self-Report, KEDS: Karolinska Exhaustion Disorder Scale, OCI-R: Obsessive-Compulsive Inventory –Revised, IES: Impact of Event Scale – Revised, AUDIT-C: Alcohol Use Disorders Identification Test-Concise



In accordance with the Finnish aims to integrate social and health services, several screening questions related to potential need for social services were also included. The assessing clinician could probe for more information if necessary, to select the primary target symptom and assess overall symptom severity. Patient preferences for available Step 1 treatment options are also enquired. The full questionnaire and screening questions are presented as an internet appendix.

SOFTWARE

The FTN software was created by a Finnish software company, Kuura Health Oy. The key design principle was to create a proof of concept version that would be anonymous, not require any integration to EHR (electronic health record) systems, not become a regulated medical device and be acceptable to practicing clinicians.

FTN questionnaire was created on a public webpage, so all users use the same application. The navigator guides the person through the questionnaire. No identifying information, including IP addresses, is collected. People are instructed not to include any identifiable information in their responses to open-ended questions. After completing the FTN, the person is presented with a summary, including an explanation of the commonly used cut-offs for symptom questionnaires. No recommendations are given, but the person is provided with generic instructions for different situations, including links to a variety of internet-based CBT-based self-help programmes (in case the person wishes to try those instead of directly seeking professional help).

After completion of the FTN, the person is provided with an eight-digit code, which is the only way to identify the responses later. The person can use the code to revisit the results, or he/she can give the code to a professional when seeking professional help. The clinician uses the code to view the results and can cut and paste the FTN summary report to the local EHR system. The clinician has a manual for a semi-structured review of the results, and for conducting a clinical interview with the patient. The interview gathers complementary information needed to verify the situation, agree on the focus of treatment and decide on first-line treatment, if appropriate. The FTN does not dictate treatment, but treatments are decided in collaboration with the patient and the interviewing clinician.

FTN also has an "only testing" option at the start, so a person who only wishes to try the system can do so without the responses going into the database. An option to view an example summary report is also presented, to be maximally open about how the system works.

THE CASE SUMMARY AND THE FTN MANUAL FOR TREATMENT SELECTION

The FTN creates a case summary, which the clinician complements with a manualized semi-structured interview. The FTN *interview manual* supports treatment selection, in line with clinical practice guidelines, but treatment decision is always left for the assessing clinician to negotiate with the patient. The FTN manual is also adjusted to local circumstances during the implementation, so that the stepped care model is populated with treatments available at that site. First-line Therapies initiative is providing training and support for the implementation of several Step 1 and 2 treatment modalities. Here we briefly describe the general logic of the FTN manual and the associated stepped care model.

Low intensity Step 1 interventions are recommended in the manual for patients: 1) suffering from only mild to moderate symptoms based on the symptom measures and clinical assessment, and 2) not suspected of having severely impaired functioning. If the patient has had a history of suboptimal responses to psychological interventions, a higher intensity intervention from Step 2 upwards is primarily considered. Physical exercise is recommended as an adjunct to treatment if the patient had indicated openness towards it in the FTN. Patients with severe symptoms and/or with suspected severe functional impairment are referred to a face-to-face appointment with a healthcare professional.

Mild or moderate substance abuse with comorbid depression, anxiety, sleep disorder or exhaustion could be referred to Step 2 CBT-based face-to-face intervention. The First-line therapies initiative trains clinicians in motivational interviewing and CBT methods for treating substance abuse. If severe substance-related problems are suspected, patients are referred to a clinical face-to-face assessment and from there to regionally available substance-related treatment modalities.

Exceptions to the stepped care model were needed for target symptoms lacking effective Step 1 or Step 2 treatment options in Finland, namely post-traumatic and obsessive-compulsive symptoms. For these symptoms, cases with even mild or moderate symptom levels could start at more intense treatment on Step 3, i.e., short psychotherapy. Internet-delivered CBT was also an option for mild OCD. Conversely, only Step 1 and Step 2 treatments were recommended for exhaustion.

If the initial assessment suggests suitability of low intensity treatments, the clinician explains the available Step 1 options and the most appropriate alternative is chosen collaboratively with an emphasis on patient preferences. Preferences for different Step 1 treatment modalities are inquired in the FTN. Motivation for brief couples or family intervention is only asked in the FTN if the patient had expressed their problems were highly or relatively highly related to relationship or family issues. Patients are recommended to a physician if they express a wish for medication assessment. Screening questions about the need for social or occupational health services are included in the FTN, so that these issues can be clarified in the interview.

3. PILOTING, IMPLEMENTATION AND CO-CREATION

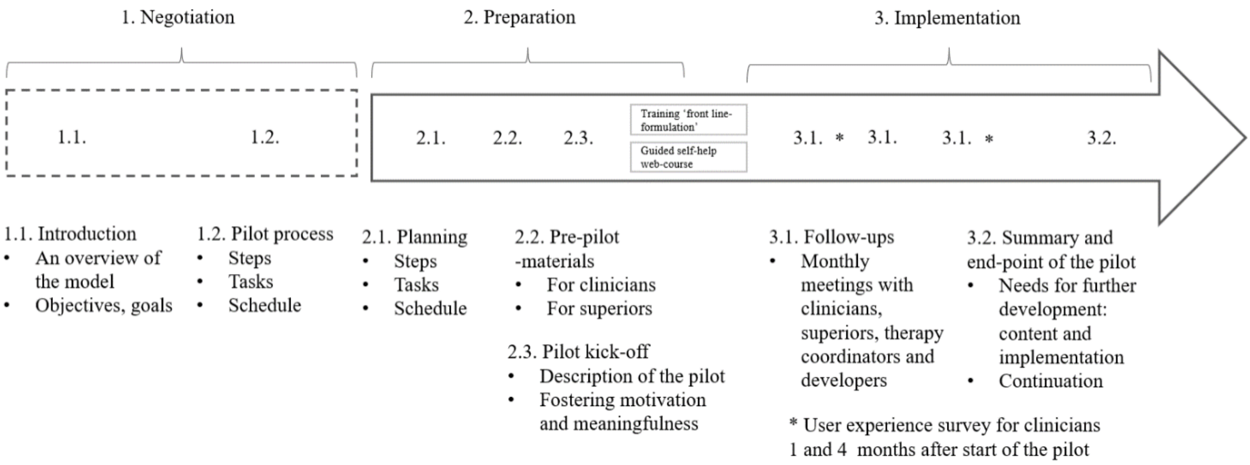
THE PILOT AREAS

Piloting of the system was done in six regions in southern Finland with a catchment area of ca 600 000. Pilots were structured as co-creation exercises between primary care and First-line Therapies initiative. Five of the six pilots were conducted in mental health services within primary care, one was conducted at a general healthcare centre. All sites offered guided self-help, internet-delivered CBT (iCBT) and group-based treatments. Variation in the available Step 2 treatments was large. All regions participated in further training of their workforce in Step 2 CBT-based treatments with the First-line therapies initiative.

THE IMPLEMENTATION PROCESS

A structured three phase implementation process was developed to ensure a co-creative way to build a workflow applicable to regional structures and processes (*Figure 2*). The co-creative nature of implementation was deemed essential, in order to focus on improving the workflow of the professionals at each site, and to optimally include the treatments locally available. In brief, the FTN and the stepped care model structure would be the same for all

Figure 2. The implementation process of the FTN



sites, but work roles, patient process and the treatments available for each step could vary.

The negotiation phase includes building a shared understanding of the objectives of the project, review of key elements of successful implementation, concrete planning and division of responsibilities. The key is to put the FTN in the wider context of improving access to psychosocial treatments in the region with a stepped care model, and to consider what other actions are required to achieve this goal. The FTN alone rarely solves all access problems. In practice, training and mentoring in Step 1 and Step 2 treatments and implementation of digital services are also needed. First-line therapies initiative has regional coordinators to help in this work.

The preparation phase includes co-creating the ideal state, where FTN is used to facilitate an efficient and locally feasible stepped care treatment model (*Figure 3*). Key questions that need to be answered are:

a. What are the pilot units where the FTN is first implemented?
b. How are the patients guided to the FTN?
c. Who are going to conduct the clinical interviews?
d. How are the interviews documented in local EHR systems?
e. What kind of treatments the local stepped care model offers?
f. How are patients remitted to face-to-face services, including physician assessment, substance abuse services and psychiatry?

In order to introduce stepped care into an existing healthcare system without any new resources, ensuring enough Step 1 treatments are available is a vital part of the implementation. The FTN would only be sustained if it does not create any extra strain on the regional health system. Thus, introduction and training on guided self-help was included in all FTN pilots' preparation phases. In all regions, information about the FTN and the recommendation to use it were added to public web pages.

In the implementation phase, the day-to-day experience with the system is followed closely by people responsible for producing the service, supported by the First-line therapies project team.

4. DATA GATHERING AND ANALYSIS

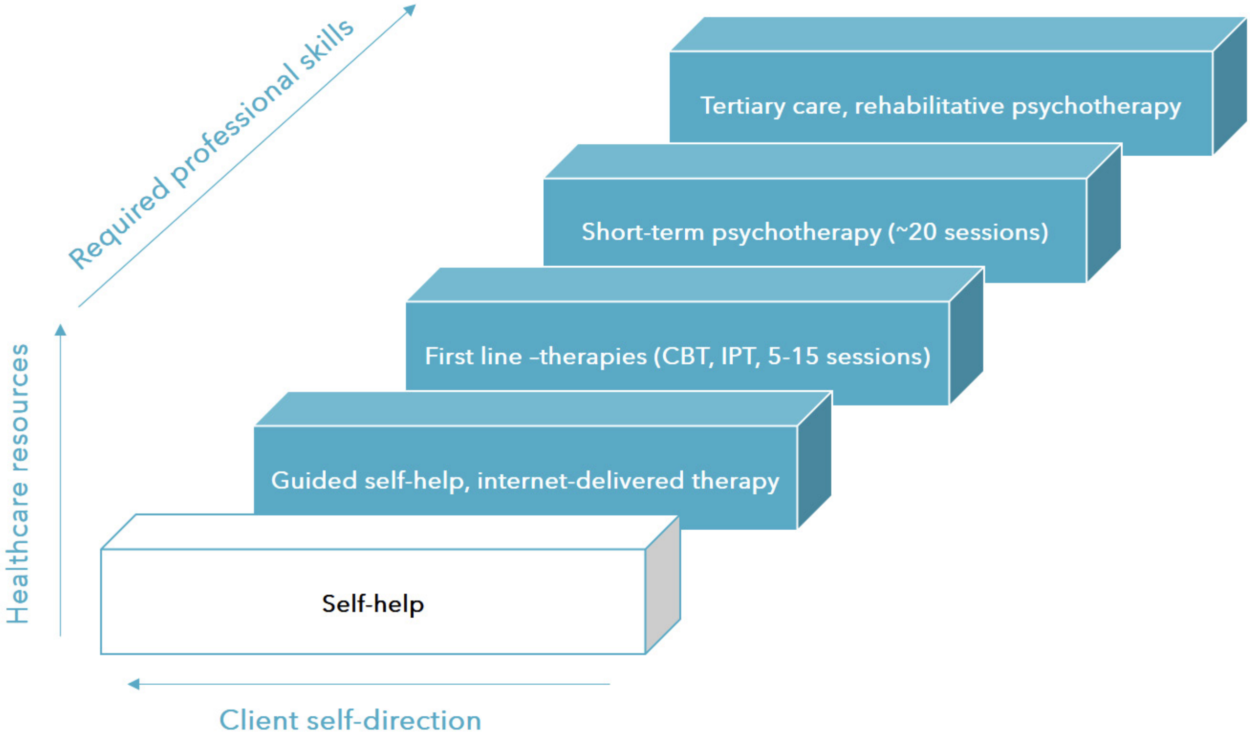
The paper presents two kinds of empirical results:

1. Feasibility results (whether the approach is feasible for introducing stepped care to Finland, surveyed from professionals using the system),
2. the FTN data (anonymous responses to FTN from October 2021 to May 2022).

This study was approved by the ethical committee of Helsinki and Uusimaa hospital district (HUS/3150/2020) and the study permission was granted by Helsinki and Uusimaa Hospital district (HUS/230/2022).

FEASIBILITY DATA

Figure 3. The Finnish stepped care model. The blue boxes illustrating Steps 1-4. The white box illustrating freely available Step 0, self-help without any professional interference



Feasibility data was collected anonymously from the professionals using structured questionnaires at one and four months after the introduction of the FTN. The surveys were designed by the FTN team to collect information on the satisfaction, process and quality of resulting assessment with the FTN. The second questionnaire also included questions on the implementation process of the FTN to the service system.

The one-month questionnaire collected the following information from the professionals: district, unit and occupation; the approximate number of patients that had used the FTN; the estimated average user experience of the FTN; how long and how many sessions the clinical assessment took using the information provided by the FTN; the experienced impact of the FTN on professional's work, on the quality of assessments and on the professional's clinical record entries; and the pros and cons of the FTN and a general grade.

In addition to the above, the four-month questionnaire collected the following information: what the professionals deemed to have supported in the introduction of the FTN in the unit; how much they had been able to influence the introduction of the FTN in their unit; how much they had received support for the use of FTN from their supervisor; net promoter score; and if the professionals wanted the FTN to remain a permanent tool.

STATISTICAL METHODS

The data were aggregated and analysed using RStudio (Version 2022.02.0) and SPSS (Version 27) software. All methods of analysis used were descriptive in nature and results are presented using arithmetic means, standard deviations and percentages. The following packages were installed in RStudio: “psych”, “dplyr”, “tidyr”, “tidyverse”, “haven” and “Rmisc”.

5. RESULTS

Results are presented separately for feasibility (collected with surveys during implementation) and for the FTN (collected by the FTN).

FEASIBILITY DATA

Key data from the feasibility surveys are presented in *Table 1*. Satisfaction was inquired on scales anchored at 0 (clearly worse) and 100 (clearly better) compared to the situation before the FTN implementation. All satisfaction scores and their 95% confidence intervals were on the positive side (over 50) and all scores improved somewhat from 1 month to 4 months.

General rating for the FTN (on scale 0 to 10) was 7.7 and 92.5% of users wished to continue using the FTN as a permanent tool at four-month follow-up.

Length of the clinical interviews are presented in *Table*

Table 1. Results from the feasibility surveys

User experience	**n**	**mean**	**CI (95%)**	**n**	**mean**	**CI (95%)**
	First survey*			Second survey**		
Scale: 0-100***						
Impact on the quality of assessments	41	66	60-72	37	72	67-77
Impact on the quality of clinical notes	41	64	58-70	33	73	67-79
Impact on own work	43	70	64-76	40	73	67-80
Estimated user experience for the patient	48	70	65-75	40	71	66-76
Scale: 0-10****						
Would you recommend FTN to a colleague?	-	-		39	7.9	7.3-8.6
Overall rating of FTN	44	7.7	7.2-8.2	39	7.8	7.4-8.3
Scale: Yes/No						
Do you want to keep the FTN as a permanent tool	-	-		40	92.5%	SD 7.5%

* First survey was sent 1-2 months after implementation to professionals taking part in the pilot
** Second survey was sent 4-6 months after implementation to professionals taking part in the pilot
*** Questions were presented with a 0-100 Visual Analogue Scale with descriptive terms at the extreme limits
Impact on the quality of assessments: 0 = clearly reduced quality, 100 = clearly improved quality
Impact on the quality of clinical notes: 0 = clearly reduced quality, 100 = clearly improved quality
Impact on own work: 0 = made it extremely more difficult, 100 = made it extremely easier
Estimated user experience for the patient: 0 = extremely bad, 100 = extremely good
**** Questions were presented with a 0-10 Visual Analogue Scale without descriptive terms

2. Ca 75% of interviews lasted under 30 minutes, suggesting the use of FTN is easily introduced to normal Finnish schedules. Interestingly, the proportion of interviews shorter than 10 minutes increases from 9.1 to 17.1% from 1 month to 4 months after implementation. Only singular cases took longer than 40 minutes.

THE FTN DATA

From the start of the FTN's implementation in October 2021 until May 2022, 3219 unique sessions had been started. In 2630 (82%) the user had answered all questions, and 589 (18%) had incomplete data. Only observations with complete data were included in the analyses, because non-completers mostly quit the FTN very quickly. The median time for incomplete FTN sessions was 0 minutes (range 0-107 minutes) and mean time for incomplete FTN sessions was 5 minutes (95% confidence interval: 4.07-6.04). The mean time to complete FTN was 29 minutes (95% confidence interval: 28.05-29.48) and median time 24 minutes (range 1.33-296 minutes). Non-completers were thus likely only testing the system, and left so little data as to make detailed analysis irrelevant. For example, of the 589 respondents with non-complete data only 132 had PHQ-9 screen response, and only 13 had response data on employment status.

Employment status of those completing the FTN is presented in *Table 3*. Of completers, 37% were employed at the time of filling the FTN, followed by 19% receiving rehabilitation subsidy.

The results of the screening questions and symptom

Table 2. Length of clinical interview, as reported by professionals

		Time used for the clinical interview, reported by the professional					
	n	**0-10 min**	**11-20 min**	**21-30 min**	**31-40 min**	**41-50 min**	**>**
50 min							
1st Survey.	44	9.1% (4)	43.2% (19)	22.7% (10)	18.2% (8)	6.8% (3)	0
2nd Survey 2.4% (1)	41	17.1% (7)	29.3% (12)	31.7% (13)	17.1% (7)	2.4% (1)	

Table 3: Employment status of users who filled in FTN

Life situation	**n**	**%**
Employed	976	37
Rehabilitation subsidy	492	19
Unemployed	446	17
Studying	346	13
Sick leave	204	8
Retired	166	6

measures are presented in *Table 4*. Over 90% of respondents scored positive on screen questions regarding anxiety, depression or exhaustion, followed by sleeping problems (72%) social anxiety (63%), obsessive-compulsive symptoms (57%), panic disorder (43%) and symptoms of traumatic stress (33%).

The percentage of people who exceeded caseness threshold in each instrument were 64% for anxiety (GAD-7)(23), 77% for depression (PHQ-9)(24), 76% for fatigue (KEDS)(25), 31% for obsessive-compulsive disorder (OCI-R)(26), 95% for panic disorder (PDSS-SR)(27), 60% for traumatic stress (IES)(28) and 28% for alcohol abuse (AUDIT-C)(29). Severe symptoms were reported for 19% on PHQ-9, 32% on GAD-7, 51% on SPIN(30) and 34% of PDSS-SR. This suggests that the FTN is generally feasible in this population, i.e., that a significant proportion of respondents could benefit from being rapidly offered Step 1 or Step 2 psychosocial treatments.

The FTN also asks about other problems and needs

Table 4. Results of psychometric instruments used in FTN

Psychometric instrument	n (screen positive)*	mean	SD	Cases (prevalence) **	Mild ***	Moderate ***	Severe ***
PHQ-9	2494 (94%)	14.13	5.75	1915 (73%)	747 (30%)	682 (27%)	486 (19%)
GAD-7	2527 (96%)	11.72	5.09	1627 (62%)	688 (27%)	817 (32%)	810 (32%)
KEDS	2438 (93%)	26.08	9.69	1865 (71%)	-	-	-
AUDIT-C	2630	3.25	2.77	749 (28%)	-	-	-
SPIN	1647 (63%)	30.53	15.94	832 (32%)	391 (24%)	-	832 (51%)
IES	855 (33%)	38.83	19.79	512 (19%)	-	-	-
PDSS-SR	1128 (43%)	11.04	6.16	1068 (41%)	164 (15%)	521 (46%)	383 (34%)
OCI-R	1487 (57%)	16.91	11.62	461 (18%)	-	-	-

* n (%) indicates screen-positives, i.e., those responding “yes” or “maybe” to symptom-specific screening questions and thus presented with the full instrument

** Prevalence indicates proportion of cases in the whole sample of complete respondents

*** Definition of caseness and severity based on common norms:

PHQ-9 (Patient Health Questionnaire, range: 0-27, caseness: 10-27, mild: 10-14, moderate: 15-19, severe: 20-27)

GAD-7 (Generalized Anxiety Disorder 7-item Scale, range: 0-21, caseness: 10-21, mild: 5-9, moderate: 10-14, severe: 15-21)

KEDS (Karolinska Exhaustion Disorder Scale, range: 0-54, caseness: 19-54

AUDIT-C (Alcohol Use Disorders Identification Test-Concise, range: 0-12, caseness men: ≥6, caseness women: ≥5). No screening questions were used before Audit-C due to instrument brevity

SPIN (Social Phobia Inventory, range: 0-68, caseness: 19-68, mild: 19-29, severe: 30-68)

IES (Impact of Event Scale-Revised, range: 0-88, caseness: 33-88)

PDSS-SR (Panic Disorder Severity Scale Self-Report, range: 0-28, caseness: 2-28, mild: 2-5, moderate: 6-13, severe: 14-28)

OCI-R (Obsessive-Compulsive Inventory-Revised, range: 0-72, caseness: 21-72) the person might have (*Table 5*). Unsurprisingly, sleeping problems were reported by the majority of respondents. The need for support in residential and family problems was reported by 17% and need for support in employment or studying by 21% of respondents.

Previous psychosocial treatments are also asked by the FTN. Of respondents, 72% had undergone previous psychosocial treatments. Of those with previous treatments, 46% had treatments shorter than 6 months and 27% longer than two years.

Patient readiness for different treatment modalities is also inquired by the FTN, to prime the person to discuss the topic during the clinical interview. Results are presented in *Table 6*. Internet-delivered or group-based treatments were the least preferred options, but still 57% answered yes or maybe regarding internet-delivered and 39% group-delivered therapy, suggesting that also these treatment modalities may find motivated participants if offered. Only 21% reported they were not prepared to consider guided self-help. This is important, as guided self-help is very resource-light Step 1 treatment, and as such an essential part of the stepped care model supported by the First-line therapies initiative. Fully 45% of respondents wished for a medication evaluation.

Table 5. Other problems and needs reported by the respondents

Other problems & needs (n = 2630)	Yes	No	Maybe
Problems			
Drug addiction	98 (4%)	2472 (94%)	60 (2%)
Behavioural addiction	227 (9%)	2161 (82%)	242 (9%)
Sleeping problems	1903 (72%)	403 (15%)	324 (12%)
Domestic violence	80 (3%)	2473 (94%)	77 (3%)
Needs			
Support for residence/family	446 (17%)	2184 (83%)	-
Support for employment/studying	554 (21%)	2076 (79%)	-

Table 6. Patient readiness for different treatment modalities

Perceived usefulness	n	Yes	No	Maybe
Internet-delivered therapy	2630	396 (15%)	1117 (42%)	1117 (42%)
Group-delivered therapy	2630	319 (12%)	1607 (61%)	704 (27%)
Guided self-help	2630	986 (37%)	556 (21%)	1088 (41%)
Physical exercise*	2630	1088 (41%)	256 (10%)	568 (22%)
Medication evaluation	2630	1178 (45%)	739 (28%)	713 (27%)
Couples/family intervention	648	151 (23%)	338 (52%)	159 (25%)

* Those responding “I’m already exercising enough” are not included in this figure

6. DISCUSSION

This paper has described the development, piloting, implementation and feasibility study results of the FTN. The FTN is one of the key components of the Finnish First-line therapies model, an initiative building a Finnish stepped care model. Additional services of the initiative include a nationwide education system for first-line psychosocial treatments, a comprehensive digital self-help service for citizens and several support structures for professionals to manage and maintain the service. A digitally supported therapy navigator is a key element for successfully managing and sustaining a stepped care model.

Our results show that implementing the FTN is feasible from a patient, clinician and management point of view. Median time patients used to complete FTN was 24 minutes. Professionals report the system improves their work, quality of assessments and overwhelmingly wanted to continue using the system permanently. The system seems to identify a significant proportion of treatment seekers who should benefit from early access to low intensity treatments.

Our experience shows that a successful implementation requires thorough planning and a co-creation process supported by the whole organization. Implementing FTN succeeds if it is seen as a participatory process aimed at improving clinical work, simplifying processes and introducing stepped care. Simultaneously introducing Step 1 digitally supported treatments is necessary in order to help re-allocate time.

The assessment interview and the accompanying interview manual were experienced as feasible. They decreased the burden on the professionals, saved time from routine data gathering to more clinically meaningful conversation, and brought appreciated structure to the work of people conducting initial assessments. Interestingly, the use of the FTN also seems to be spontaneously spreading in clinical use, outside our official pilots.

The burden of the FTN for the patient seems acceptable. Clinical questionnaires always require some compromise between length (burden to patients) and detailed information gathering. So far, our feedback suggests a reasonable balance has been found. Interestingly, according to feedback from professionals, many patients experience the structured summary of their situation beneficial as such. Thus, the assessment interviews have been increasingly framed not only as an assessment, but also as a therapeutic intervention to create clarity and structure for the patient. Then, a jointly formulated plan for the future can be devised, ideally increasing alliance between patient and professional. The FTN seems to decrease attrition (according to qualitative feedback from clinicians) and increase patient's likelihood to come to future appointments after the assessment interview.

EMPIRICAL RESULTS FROM THE FTN DATA

The key aim of the FTN is to identify the people who would benefit from quick access to evidence-based, symptom-matched psychosocial treatments as first-line treatment. This should improve the outcome of those individual patients (instead of waiting or receiving less effective treatments) and the stepped care model should help conserve scarce resources (physician time, long psychotherapy) for those unlikely to benefit from short-term treatments.

In our sample, depression, anxiety and exhaustion were dominant symptoms with over 90% screen-positive on these domains. Correspondingly 64-77% exceeded the caseness threshold for these symptoms in psychometric instruments. Two-thirds were reporting problems in sleeping. These findings are comparable to previous studies among subjects seeking help in primary care or IAPT services (14,31).

However, as only 19% reported severe symptoms on PHQ-9, and 32% on GAD-7, a large proportion of the respondents are in range where expeditious, short-term psychosocial treatments should be considered as first-line treatment, as recommended in current treatment guidelines (32–34). Our data does not allow us to separate recent past treatments from those that happened years before. Still, 28% of respondents reported no previous psychosocial treatments, and 33% reported treatments shorter than 6 months. This, again, suggests that a significant proportion of treatment seekers could benefit from rapid, low intensity short-term psychosocial treatments. These people can be directed to treatment without visiting a physician for diagnosis, saving a physician time.

Saving a physician time is important, because 45% of respondents presented a wish for medication evaluation when asked in the FTN. This is a significant proportion of the population, and a specific process for these patients should be planned, for example, via remote consultations by physicians specialized in psychopharmacology. This could be very important for optimizing outcomes, as psychotropic medications are very rarely used according to clinical guidelines (35,36).

STRENGTHS AND WEAKNESSES OF FTN

The strengths of the FTN have been discussed in detail in combination with the design principles of the system. The key weaknesses of the system can be divided into technical and content-related issues.

Technological weaknesses of the system are related to the system lacking an integrated EHR link. The anonymous FTN data cannot be changed to identifiable data without manual copying. On the other hand, this emphasis on anonymity is a deliberate design feature of the system to encourage use of the FTN and anonymous self-help services and programmes. The field of mental health self-help applications provides rapidly expanding possibilities, so a nationally coordinated system for guiding patients to this field is potentially very valuable.

Anonymity and ease of use concerns inherently limit the importance of FTN for management purposes. A more detailed questionnaire would also be preferable from research point of view.

As the FTN is aimed at supporting clinical decision making and not replacing it, issues that need to be clinically discussed are left out from the FTN system. For example, it is essential to discuss previous treatments (reported by 72% of respondents) as part of collaborative treatment planning. As detailed history cannot be collected anonymously, the FTN only includes a screening question on previous treatments.

For some patients, completing the FTN can be a laborious process: the more complex the patient's situation is, the more screening instruments the FTN requires them to complete. Feedback from the pilot processes suggest that psychological performance, dyslexia or old age may have an effect on patients' ability to focus and answer correctly to many consecutive instruments. This might reduce the accuracy and relevance of the information collected by the FTN in individual cases. The importance of the careful and complementary assessment by the healthcare professional is thus further emphasized.

Content wise, the applicability of the FTN for people with serious substance abuse problems is a complex issue. Although these patients often present in primary care, they have not been considered ideally suitable for the standard stepped care model and low intensity treatments. The FTN concentrates on rapid start of treatment on Steps 1 and 2, i.e., the service that should be provided from primary care (32–34). This design feature of the system means that the FTN has little effect on entry to specialized psychiatry or to long-term psychotherapy.

It is clear from international examples that structured interviews can be used to systematize treatment selection and optimize effectiveness of stepped care systems. Effectiveness of psychosocial treatments, however, vary between contexts and countries for several reasons. Comprehensive stepped care systems also tend to become complex, multiple provider networks. Digital treatment modalities evolve more rapidly than they can be thoroughly studied. Thus, the realization of patient-relevant outcomes from implementation of the FTN should be proven in naturalistic settings, separately for each healthcare system. The proof of the pudding is in the eating, not in the laboratory. This article shows the feasibility of using FTN to improve the treatment process. The clinical utility of the resulting stepped care system, however, will need to be assessed separately using registry data. Fortunately, the regional implementation of the system will allow comparison between FTN users and others in recent years.

STRENGTHS AND WEAKNESSES OF THE FEASIBILITY STUDY

The implementation of the FTN was done as part of the First-line therapies initiative, which is part of the ongoing national reform of social and health services. Consequently, implementation of the FTN was not primarily a study about the FTN, but a joint initiative to improve local service delivery. This limited the possibility to optimize the feasibility study design from an academic perspective.

As the implementation of FTN was a stepwise procedure, the representativeness of the data increases as the implementation proceeds. It is not known how many people entered services during the study time without completing the FTN, so the representativeness of the sample to the whole primary care population is so far unknown. People who have a low threshold to take new technologies into use might be over-represented in the sample. This might cause some bias towards younger or more educated subjects, or towards milder symptoms. Further studies should more carefully assess the population representativeness of the FTN from register data.

FUTURE DEVELOPMENT OF THE FTN

The FTN will be adjusted somewhat based on the empirical data presented here. The interview and implementation manuals are continually updated to reflect feedback received and improving understanding of successful pilots.

This review process will be conducted as a joint project between all university hospitals in Finland.

In the long-term, the FTN can be developed in several ways, following international examples. The key technological question is whether the FTN data will be linked to individual clinical outcomes or not. Linking FTN to individual EHR data would open the system for data-driven prediction of treatment outcomes and care allocation based on these predictions. In other words, using machine learning algorithms to combine the prognostic information collected via FTN with subsequent monitored care outcomes could help create possibilities for data-founded care models. One example of such models is the Trier Treatment Navigator (TTN) (37,38). Other possible future directions would be to consider adding more sociodemographic and socio-economic variables to the FTN, which are already used in many similar tools like the DST and StepCare (13,15). There is a well-known sociodemographic and socio-economic gradient in mental disorder and consequent disability pension prevalence (39,40). Using these indicators integrated with machine learning algorithms and treatment outcomes could have the potential to give more accurate data-driven prognosis-matched care predictions for an individual patient's potential gain from low and/or high intensity treatment options. Perhaps even more importantly, this could also allow for better coordination of social and occupational assistance, in accordance with the Finnish aim to improve coordination between health and social services.

Even if the FTN is not linked to identifiable EHR data, the realm of anonymous self-help programmes is one of the most rapidly developing fields of mental health. For this, widening the scope of the FTN to screen for more rare disorders with proven self-help programmes could be useful for, for example, mild neuropsychiatric problems. Technologies such as augmented and virtual reality, wearable devices and internet of things, artificial intelligence, and the convergence of these into a new kind of "metaverse" will bring revolutionary ways to help people help themselves. In this scenario, the FTN will function as a central gateway to reliable and effective digital self-help services. This would also allow service developers a unique way to access patients if they manage to create effective services.

7. CONCLUSIONS

The Finnish Therapy Navigator, as presented here, appears a feasible way to improve both assessment and access to psychosocial treatments. The professionals experience the new system as overwhelmingly positive. The co-creative implementation process appears a feasible way of building regionally adapted and sustainable stepped care systems within primary care.

Our data shows that there is a significant population within Finnish primary care treatment seekers – as elsewhere in the world – who would benefit from readily available, short-term psychosocial treatments. FTN appears promising in identifying these people and guiding them to treatment.

FTN implementation is progressing rapidly, with a catchment area of 2.2 million estimated by end of 2022. This study provides justification for national implementation and further development of the FTN.

Finally, it is important to highlight that the FTN is not a technologically driven, stand-alone solution. The feasibility results presented here concern the FTN as part of the holistic First-line therapies initiative, and its service contributions, especially national co-creation and support structures, large-scale training in psychosocial treatments and several digital support systems, for patients and professionals. Combining these elements seems promising in delivering systemic change, and improving the psychosocial treatment people receive.

Supplementary Material

Supplementary data are available at Psychiatria Fennica online

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Funding

The work reported here is based on First-line therapies initiative, funded by the Finnish Ministry of Social Affairs and Health. The study was also financially funded by a state funding for university level health research (HUS/441/2022 grant to SES). The funders had no role in design, analyses, reporting or decision to publish

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STRUCTURED MONITORING OF PSYCHOTROPIC MEDICATION IN UNIVERSITY HOSPITAL CHILD PSYCHIATRY IN FINLAND

ABSTRACT

Introduction: The use of psychotropic medications has emerged in children, but the monitoring practices are diverse. With the aim of systematizing psychotropic medication practices in children, the Medication Unit was launched at the department of child psychiatry of Tampere University Hospital (TAUH) in February 2021. Aims and methods: The aim of this retrospective patient report-based study was to examine the performed psychotropic medication monitoring in the Medication Unit between 1 February and 31 December 2021. Results: The median age of the study patients (n = 57) was 10.7 years and 77% were males. The most common medications at the first visit to the Medication Unit were methylphenidate (44%) and risperidone (23%). Performed somatic monitoring followed the medication group-specific guidelines well, but target symptom reporting and dialogue concerning adverse effects was not as systematic. Conclusion: The monitoring of psychotropic medications in the Medication Unit was well executed, systematic and followed the local guidelines well. During this study, co-operation with the nursing staff, clearly defined tasks, predefined protocols and proper facilities probably benefitted the monitoring. Further studies on strategies to improve psychotropic medication practices within the child psychiatric service system are needed.

KEY WORDS: PSYCHOTROPIC MEDICATION, MONITORING, GUIDELINES, CHILDREN, CHILD PSYCHIATRY

INTRODUCTION

The global trend in using psychotropic medications in children and adolescents has been rising in recent years, including in Finland (1–6). The use of methylphenidate, which is the first-line medication for attention-deficit/hyperactivity disorder (ADHD), increased 5–6-fold in children and adolescents between 2006 and 2016 (4,7). Also, the use of antipsychotic medications, most commonly second-generation antipsychotics (SGAs), increased 1.4-fold in Finnish children and 2.2-fold in adolescents between 2008 and 2017 (1). The use of antidepressants, mostly selective serotonin reuptake inhibitors (SSRIs), doubled in Finnish minors between 2008 and 2018. Most of this increase appeared in adolescents (8). In primary schoolers the increase was smaller and in pre-schoolers the SSRI use has decreased (8). Further, the use of psychotropic polypharmacy has emerged (6,9,10). Except for ADHD and some SSRI medications, due to the limited number of paediatric pharmacological trials, official indications for psychotropic medications are few in children under the age of 13 years (*Table 1*), thus off-label prescribing is common (11–14).

The treatment of ADHD consists of multimodal psychosocial support methods, combined with medication (15). ADHD medications (*Table 1*) are usually well tolerated and effective in reducing the core symptoms in children (15,16). The common adverse effects are a diminished appetite, elevation of blood pressure (BP) or heart rate (HR), and sleep disturbances (15). However, alpha-2 agonists may cause hypotension and bradycardia (15,16). Several countries, including Finland, have created clinical guidelines for the initiation and monitoring of ADHD medication (*Table 2*) (15,16).

SGAs in children are mostly prescribed off-label (*Table 1*). Risperidone, aripiprazole and quetiapine are often prescribed for the symptomatic treatment of severe aggression and behavioural disorders comorbid with ADHD and autism spectrum disorders, and further, for anxiety and depressive disorders (1,5,17). SGAs are associated with metabolic adverse effects. An increased appetite, weight gain and deviations in lipid and glucose metabolism may affect up to 60% of children using SGAs (18,19). Neurological adverse effects, such as extrapyramidal symptoms, akathisia, neuroleptic malignant syndrome or tardive dyskinesia, may also emerge (19,20). SGAs may prolong the QT interval (21,22). Even though the risk seems to be small in healthy children, an individual assessment is needed (21,22). International guidelines for initiation and monitoring of SGA treatment in children have analogous principles, but follow-up frequency and monitoring methods may differ (*Table 2*) (23–25).

Fluoxetine and sertraline are the most commonly used antidepressants in children and adolescents (*Table 1*) (6,8). They are generally well tolerated and most of the adverse effects appear in the early stages of treatment or after a dose increase (19). Nausea, changes in appetite or headache are usually transient (19,26). Activation, agitation and insomnia may also appear and the elevated risk of suicidal thinking and behaviour should be noted (19,27). Further, there is a risk of QT interval prolongation and, extremely rare but potentially life-threatening, serotonin syndrome (19). Monitoring recommendations for SSRIs are described in *Table 2*.

Diagnostics, target symptom definition, individual risk assessment and careful monitoring are key issues when prescribing psychotropics in children, especially with off-label prescriptions and polypharmacy (14,15). Despite the guidelines, clinical monitoring practices may be inadequate (28–34). Special concerns have arisen with SGAs, which are mostly prescribed off-label and carry a significant risk of metabolic effects. The lack of SGA monitoring was also noted in a Finnish study performed in Tampere University Hospital's (TAUH) department of child psychiatry (35). It revealed that the frequency of growth and BP measurements and metabolic laboratory tests at SGA initiation varied from 27% to 49%, and 46-77% of the patients had enough measurements to estimate possible metabolic changes during the follow-up (35). The means to improve SGA monitoring in children have been investigated in several studies (36,37). It seems that national guidelines are not sufficient but the implementation of local clinical guidance and monitoring protocols may be helpful although their effects seem to wane as time passes (36,37). To improve monitoring more permanently, the protocols need to be tailored to fit the local practices and organizational commitment is necessary (37). A paediatric SGA monitoring protocol was also implemented at TAUH in 2015 (35). Despite temporary improvement, a yet unpublished study by Honkola et al. (2022) showed that the protocol did not spread to common clinical practice (35,38). Thus, more effective means were needed. To address the contradiction between increasing psychotropic prescriptions and insufficient monitoring practices, the Medication Unit at TAUH's department of child psychiatry was launched in February 2021.

Table 1. Official indications of attention-deficit/hyperactivity disorder (ADHD) medications, second-generation antipsychotic (SGA) medications and selective serotonin reuptake inhibitors (SSRIs) available in the market for children under the age of 13 years in Finland (according to the Duodecim lääketietokanta) and the United States (according to the Food and Drug Administration, FDA)(27,44)

	Indication for children under the age of 13 years	
	In Finland	**According to the FDA**
ADHD medications		
Methylphenidate	ADHD > 6 years of age	ADHD > 6 years of age
Lisdexamfetamine	ADHD > 6 years of age if methylphenidate is not effective	ADHD > 6 years of age
Dexamfetamine	ADHD > 6 years of age if methylphenidate is not effective	ADHD > 6 years of age
Atomoxetine	ADHD > 6 years of age	ADHD > 6 years of age
Guanfacine	ADHD > 6 years of age if stimulants are not suitable or effective	ADHD > 6 years of age as monotherapy and as adjunctive therapy to stimulant medications
SGAs[1]		
Risperidone	Aggression and/or conduct disorder in patients > 5 years of age with diagnosis of intellectual disability (max 6 weeks)	Bipolar mania (≥ 10 years of age) Irritability associated with autism (> 5 years of age)
Quetiapine		Bipolar mania (≥ 10 years of age)
Aripiprazole		Bipolar mania (≥ 10 years of age) Irritability associated with autism (≥ 6 years of age) Tourette's disorder (≥ 6 years of age)
Asenapine		Bipolar mania (≥ 10 years of age)
Lurasidone		Bipolar depression (≥ 10 years of age)
Paliperidone		Schizophrenia (≥ 12 years of age)
Ziprasidone	Manic or mixed episodes of bipolar disorder (> 10 years)	
SSRIs[2]		
Fluoxetine	MDD[3] > 8 years of age	MDD > 8 years of age OCD[4] > 7 years of age
Sertraline	OCD > 6 years of age	OCD > 6 years of age
Fluvoxamine	OCD > 8 years of age	OCD > 8 years of age
Escitalopram		MDD > 12 years of age

[1] Available SGAs with no official indications either in Finland or the USA: Olanzapine, Sertindole, Cariprazine, Brexpiprazole, Loxapine, Clozapine

[2] Available SSRIs with no official indications either in Finland or the USA: Paroxetine, Citalopram

[3] Major depressive disorder

[4] Obsessive-compulsive disorder

Table 2. Recommendations for the monitoring of psychotropic medications in children (15,16,19,22-24,26,37,39–41,44)

Medication	Upon initiation	Monitoring (Regularly during the follow-up)[1]	Somatic monitoring (Regularly during the follow-up)[1]	Laboratory tests
ADHD medications				
All	Assessment of target symptoms Physical examination • Growth[2] • BP[3], HR[4] Individual risk assessment • Cardiac disease or risk factors	Symptoms Efficacy Sleep Appetite Mental health changes Adverse effects	Growth BP, HR Neurological examination	No systematic testing is needed upon initiation or during monitoring ECG[5] when necessary[6]
Special considerations				
Stimulants				
Atomoxetine		Pay special attention to possible emergence of suicidality		Liver enzymes if symptoms of liver dysfunction appear
Guanfacine			Pay special attention to BP and HR (bradycardia and hypotension) • Close monitoring is needed during the initiation and with each dose increase	
SGAs	Definition and assessment of target symptoms Physical examination • Growth • Waist circumference • BP, HR • Neurological status Individual risk assessment • Cardiac disease or risk factors • Metabolic disease • Neurological adverse effects Information if prescription is off-label Lifestyle education	Symptoms Efficacy Mental health changes Nutritional status Adverse effects Lifestyle	Growth • Weekly weight monitoring during the first 6 weeks • Waist circumference • BP, HR • Neurological examination	Upon initiation and regularly during follow-up • Metabolic parameters[7] • Blood count • Alanine aminotransferase • Prolactin[8] • ECG[8]

→

Medication	Upon initiation	Monitoring (Regularly during the follow-up)[1]	Somatic monitoring (Regularly during the follow-up)[1]	Laboratory tests
SSRIs	Definition and assessment of target symptoms Physical examination Individual risk assessment • Cardiac disease or risk factors	Symptoms Efficacy Adverse effects Close monitoring needed during the first weeks and months. • Pay special attention to possible emergence of suicidality		ECG when necessary

[1] Timing of monitoring varies in recommendations
[2] Weight and height
[3] Blood pressure
[4] Heart rate
[5] Electrocardiogram
[6] Before initiation when there is an individual or family history of cardiological disease or a doubt of previous arrhythmias
[7] Fasting blood glucose and lipids
[8] Recommendations vary

THE MEDICATION UNIT

TAUH is one of the five university hospitals in Finland, with a catchment area of approximately 900,000 inhabitants. The department of child psychiatry consists of an acute and inpatient unit, where children come mostly with emergency and urgent referrals, and four non-urgent outpatient units. All the units offer specialist level psychiatric services for children aged 0-12 years. On a yearly basis approximately 1800 children are treated in TAUH department of child psychiatry. The Medication Unit serves all units of TAUH's department of child psychiatry. Patients are referred to the Unit for initiation or monitoring of psychotropic medication. The referring physician stays in charge of the overall psychiatric treatment, while the Medication Unit is responsible for medication monitoring. The Unit operates one and a half days a week in an office that has sufficient equipment for monitoring. Child psychiatric residents work in co-operation with two trained nurses, who, e.g., schedule visits and laboratory tests and perform measurements of growth, BP and HR. A senior consultant is available for an hour per day.

For the Medication Unit, medication group-specific instructions and a checklist for initiating and monitoring were created based on the available guidelines for ADHD (15), SGA (39–41) and SSRI (26) medications (*Table 2*). With all medications, the evaluation of growth, BP and HR – and with ADHD and SGA medications also neurological examination – are recommended at 1 month and 4 months after initiation, and every 6 months thereafter. A phone contact is recommended 1-2 weeks after baseline or after a dose increase. Further, with SGAs, regular monitoring of relevant laboratory tests (*Table 2*) and ECG are recommended. An easy to order set of laboratory tests is available for SGA monitoring. With SSRIs, a weekly evaluation of psychiatric symptoms (especially suicidality) is emphasized during the first month of treatment. The use of psychiatric rating scales is recommended with all medications at all visits. A tightening of the schedule is recommended after a dose increase or if adverse effects emerge.

AIMS

The aim of this study was to examine how the monitoring of psychotropic medication was performed in the newly launched Medication Unit of TAUH's department of child psychiatry.

MATERIAL AND METHODS

This retrospective patient report-based study was performed at TAUH's department of child psychiatry between 1 February and 31 December 2021 and was approved by the director of the TAUH Research Services. The inclusion criteria were: 1) a referral to the Medication Unit between January and August 2021, 2) at least one contact with the Unit (visit or a phone call), and 3) the patient's age was below 13 years. These criteria were met by 57 patients who were followed until either the discontinuation of the treatment in the Medication Unit or 31 December 2021, whichever came first. The following data were collected from the electronic patient records: background information (age, gender, family status), diagnoses, information concerning the referral and monitoring visits (the referring unit, the reason for the referral), the medication (generic name), performed somatic monitoring (weight, height, BP, HR, neurological status, ECG, laboratory tests), the assessment of target symptoms, medication response and adverse effects (whether discussed or not), and the use of a psychiatric rating scale (whether used or not). Due to different medication group-specific monitoring instructions, the study sample was divided into three groups: 1) patients using ADHD medications (stimulants, atomoxetine, guanfacine) and possibly SSRIs but not SGAs (ADHD medication group 47%, n = 27), 2) patients using SGAs (with or without other medications, SGA group 40%, n = 23), and 3) patients using only SSRIs (SSRI group, 12%, n = 7).

Categorical variables are described with frequencies, and the statistical significance of the possible differences between patient groups was tested with Fisher's or Fisher-Freeman-Halton exact test. Continuous variables are described with medians (Md) and quartiles (IRQ = Q1-Q3), and group differences were tested with the Kruskal-Wallis test. P-values < 0.05 are considered statistically significant and values between 0.05 and 0.10 indicative. IBM SPSS Statistics, version 28 was used for all statistical analyses.

RESULTS

The median age of the study patients at baseline (BL) was 10.7 years and 77% were males. The patients in the SSRI group were statistically significantly older compared to the other patients. Background information, ICD-10 F-category (psychiatric) diagnoses and psychotropic medications at BL are described in *Table 3*. The most common diagnoses were ADHD and conduct or mixed conduct and emotional disorder. Over 80% of the patients had at least two diagnoses and 26% also had an ICD-10 Z-category diagnosis reflecting environmental factors, e.g., family circumstances, influencing the patient's health. One third of the patients were referred to the Medication Unit from acute or inward units. The most common reason for referral was a request for the monitoring of an ongoing medication. At BL, 77% of the patients used psychotropic medication as a monotherapy, most commonly methylphenidate and risperidone. During the follow-up, the number of patients using only one psychotropic medication decreased to 63%. Three quarters of the patients had at least two contacts with the Unit during the study period (*Table 3*). Thirty-two per cent of all contacts were conducted by phone.

The frequencies of target symptom reporting, conversations about medication response and adverse effects, use of psychiatric rating scales and performed somatic monitoring in the medication groups are described in *Table 4*. At BL, target symptoms were reported in approximately half of the patients in the SGA and SSRI groups and in one quarter of the ADHD group. A conversation about medication response was carried out with 71–100% and of adverse effects with 43–83% of patients at BL, both statistically significantly or indicatively more often with patients using SGAs. During the study period, the response and adverse effects were discussed, and a psychiatric rating scale was used at least once with almost all patients. Measurements of growth, BP and HR were performed for almost all patients at BL and at least once during the study period. Repeated measures were available for 74–81%. In the SGA group, monitoring of laboratory tests was significantly more common, and monitoring of ECG and repeated neurological examinations were indicatively more common (*Table 4*).

Table 3. Background information of the study patients in the Medication Unit of Tampere University Hospital's child psychiatric department, for three medication groups and the whole sample

	Medication group			p	All
	ADHD[1] (n = 27)	SGA[2] (n = 23)	SSRI[3] (n = 7)		
	Md (IQR)[4]	Md (IQR)[4]	Md (IQR)[4]		Md (IQR)[4]
Age at baseline	9.8 (8.9–10.9)	11.0 (10.2–12.3)	12.8 (11.8–12.9)	< 0.001	10.7 (9.4–12.3)
	%	%	%		%
Gender				ns	
Boy	78	83	57		77
Caregiver				ns	
Both biological parents	44	27	50		37
Parents separated	44	46	33		43
Foster care	13	27	17		20
Number of ICD-10 F-diagnoses				ns	
1	33	39	57		39
2	52	30	43		42
3-4	15	30	0		19
F-diagnoses with a frequency > 10% in All					
Obsessive-compulsive disorders F42	4	13	29	ns	11
Reaction to severe stress and adjustment disorders F43	4	26	14	0.060	14
Hyperkinetic disorders F90	96	57	0	< 0.001	68
Conduct or mixed conduct and emotional disorder F91-92	37	57	14	ns	42
Childhood emotional disorders F93	15	9	29	ns	14
Referred from TAUH's child psychiatric				ns	
Acute and in-patient units	22	39	29		30
Out-patient units	78	61	71		70

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Reason for referral				ns	
Medication initiation	19	4	29		14
Monitoring ongoing medication	82	96	71		86
Medication at baseline					
ADHD medication	100	44	0	< 0.001	65
Methylphenidate	70	26	0	< 0.001	44
Lisdexamfetamine	7	9	0	ns	7
Guanfacine	7	9	0	ns	7
Atomoxetine	19	0	0	0.076	9
SGA medication	0	91	0	< 0.001	37
Risperidone	0	57	0	< 0.001	23
Aripiprazole	0	35	0	< 0.001	14
SSRI medication	0	13	100	< 0.001	18
Sertraline	0	13	43	0.003	11
Fluoxetine	0	0	57	< 0.001	7
Number of contacts per patient				0.019	
1	15	30	29		23
2	7	35	29		21
≥ 3	78	35	43		56

[1] Patients using ADHD medication without SGAs, possibly combined with SSRIs
[2] Patients using second-generation antipsychotics alone or combined with ADHD and/or SSRI medications
[3] Patients using solely SSRIs
[4] Median and quartiles (lower-upper quartile)

Table 4. Frequencies of clearly reported target symptoms, discussing response and adverse effects and performing measurements during the first visit (baseline), at least once, and at least twice during the whole follow-up period for the patients of the Medication Unit of Tampere University Hospital's child psychiatric department, for three medication groups

	Baseline				**At least one measurement**				**At least two measurements[4]**			
	Medication group			**p**	**Medication group**			**p**	**Medication group**			**p**
	ADHD[1] (n = 27)	**SGA[2] (n = 23)**	**SSRI[3] (n = 7)**		**ADHD[1] (n = 27)**	**SGA[2] (n = 23)**	**SSRI[3] (n = 7)**		**ADHD[1] (n = 23)**	**SGA[2] (n = 16)**	**SSRI[3] (n = 5)**	
	%	%	%		%	%	%		%	%	%	ns
Clearly reported target symptoms	26	44	57	ns	33	52	71	ns	17	38	60	ns
Medication response discussed	74	100	71	0.012	96	100	100	ns	91	94	80	ns
Adverse effects discussed	74	83	43	0.097	93	100	100	ns	87	75	60	ns
A psychiatric rating scale used	85	83	86	ns	100	100	100	ns	83	75	60	ns
Somatic measurements performed												
Weight	89	91	100	ns	100	100	100	ns	78	81	80	ns
Height	89	91	100	ns	100	100	100	ns	74	81	80	ns
BMI[5]	89	91	100	ns	100	100	100	ns	74	81	80	ns
Blood pressure	93	91	100	ns	100	100	100	ns	78	75	80	ns
Heart rate	89	91	100	ns	100	100	100	ns	74	75	80	0.069
ECG	30	61	43	0.094	33	83	43	< 0.001	4	31	20	
Neurological examination	59	65	43	ns	70	78	57	ns	17	50	20	0.067
Some laboratory tests taken	4	65	29	< 0.001	4	87	43	< 0.001	4	56	0	<0.001
Blood count	4	65	29	< 0.001	4	87	43	< 0.001	0	38	0	0.002
Fasting blood lipids	0	57	29	< 0.001	0	78	29	< 0.001	0	31	0	0.011
Fasting blood glucose	0	52	29	< 0.001	0	74	29	< 0.001	0	38	0	0.002
Prolactin	0	48	14	< 0.001	0	70	14	< 0.001	0	31	0	0.011

[1] Patients using ADHD medication without SGAs, possibly combined with SSRIs
[2] Patients using second-generation antipsychotics alone or combined with ADHD and/or SSRI medications
[3] Patients using solely SSRIs
[4] Among patients who had at least two contacts
[5] Body Mass Index

DISCUSSION

At TAUH's child psychiatry, special attention has been put into safe medication practices during the last decade. As a result, a Medication Unit was established in 2021. The main finding of this study was that in the Medication Unit, the monitoring of psychotropic medications was well executed, systematic and followed the local medication group-specific guidelines well.

At TAUH, the prior SGA-monitoring protocol implemented in 2015 substantially improved monitoring during the study period (35). However, as in previous studies (37,42), a yet unpublished study by Honkola et al. (2022) performed at TAUH showed that the mode of action did not spread to overall clinical practices (38) and an organizational change was needed. Studies show that in order to succeed, monitoring practices should be tailored locally and supported with concrete tools and reminders (25,37). These principles were used as guidelines when planning the Medication Unit. During the present study in the Medication Unit, the frequency of somatic monitoring was good in all medication groups. Further, in the SGA medication group, for which reference data from the same location was available, the frequencies were considerably better than before the implementation of the monitoring protocol and the Medication Unit (35). Further, non-invasive methods such as growth monitoring were used systematically in the Medication Unit and over half of the patients had a neurological examination, which is important for the estimation of possible neurological adverse effects (20). As was recommended, ECG and laboratory tests, targeting the detection of possible cardiological and metabolic adverse effects, were more common in children with SGAs compared to other medications. These findings were probably influenced by the collaboration and the clearly defined tasks of the residents and the nurses. The systematic measurement of growth and BP were tasks clearly entrusted to the nurses in the Unit, as was scheduling of the visits according to the protocol. Also, previous studies indicate that multidisciplinary collaboration can facilitate psychotropic medication monitoring, especially in outpatient settings (31,33). Further, a well-defined medication-specific monitoring protocol, a checklist, a predetermined set of laboratory tests and proper facilities in the Unit may have supported the monitoring during this study.

Besides somatic monitoring, dialogue with patients and caregivers regarding medication target symptoms, response and adverse effects is essential (14,15). According to the findings of this study, these still need attention. Medication response was discussed at least once with most of the patients. However, despite a clear reminder in the checklist, target symptoms often remained unreported, especially with ADHD medications. This is an interesting finding and may reflect the idea that target symptoms of ADHD medications are widely known. Nevertheless, patients and caregivers may not be familiar with them and may have other expectations than the clinicians. The finding does not necessarily indicate that the target symptoms were not evaluated, but rather that they were not clearly reported. Exact definition and reporting are essential in order to evaluate the response. Furthermore, psychotropic medications are often used as symptomatic treatment, and in children they are often off-label. This highlights the need for careful evaluation and reporting of symptomatic changes and the risk-benefit balance. The importance of reporting is especially evident when there is more than one physician attending to the medication monitoring. A promising finding in this study was, however, that psychiatric rating scales were used with most of the patients during the study period. This, also, was probably influenced by the checklist and the monitoring routine, which recommended their use, and the collaboration with the nurses who ensured that the scales were available.

Dialogue regarding adverse effects took place at least once with most of the patients during the study period. However, at the first visit to the Unit, the adverse effects of SSRIs received far less attention than those of ADHD and SGA medication, or at least they were not noted in the patient reports. Dialogue on adverse effects with the child and the caregiver is an important part of monitoring, and with SSRIs caregivers need to be informed of the risk of possible suicidality in order to safeguard the patient when needed (27). It is possible that the medication group differences are due to physicians' better knowledge of the adverse effects of ADHD and SGA medications. The national guidelines for ADHD and the prior local study concerning SGA monitoring may also have influenced the result. Based on this finding, more emphasis should be put on educating physicians of the adverse effects of psychotropics, and means to inform patients and caregivers about them, especially concerning the medications less commonly used in children.

The good quality monitoring detected in this study suggests that the follow-up of psychotropic medication deserves a time and place of its own, and novel approaches to achieve this goal are needed. This study showed that monitoring may be well performed and medication safety improved even separately from the unit responsible for the child's treatment as a whole. However, when the Unit focuses on medication, the risk may be that not all aetiological factors associated with the patients' wellbeing and symptoms are sufficiently considered, especially when physicians work in rotation – even when the nurses in the Unit provide some continuity. Despite guidance and supporting structure, the evaluation of the benefits and risks of psychotropic medications in children is always a challenging task. Children with complicated polypharmacy and multiple psychosocial factors affecting their symptoms probably benefit more from a traditional single-physician working model. However, as with all children using psychotropics, medication safety and thorough monitoring practices need to be considered as priorities.

CONCLUSIONS

The monitoring of psychotropic medications in the Medication Unit at TAUH's department of child psychiatry was well executed, systematic and followed the local guidelines well. However, further studies on strategies to improve psychotropic medication practices and affect possible barriers of monitoring within the child psychiatric service system are needed.

STRENGTHS AND LIMITATIONS

A major strength of this study is that it produced naturalistic information of a new clinical working model to improve medication monitoring and safety. However, the short duration, small number of study subjects in different medication groups and the lack of a control group are limitations that may affect the generalizability of these results.

Acknowledgements
We wish to express our gratitude to all the participating patients and physicians at TAUH's child psychiatric department and to the nurses at the Medication Unit.

Disclosures

The authors declare no conflicts of interest regarding this manuscript.

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A RETROSPECTIVE STUDY OF HOSPITALIZED ADOLESCENTS SUFFERING FROM DEPRESSIVE CONDUCT DISORDER

ABSTRACT

The present study evaluated the use of psychotropic medications in hospitalized adolescents suffering from depressive conduct disorder. In addition, the efficacy of the hospital treatment was estimated. The study sample comprised 13 to 17-year-old adolescents (n = 39) treated due to depressive conduct disorder in the two psychiatric inpatient units for adolescents in Kuopio University Hospital, Finland during the years 2002–2011. The demographic and clinical data of the adolescents as well as medication details were collected from the adolescents' medical files. In addition to psychosocial interventions, psychotropic medications were frequently utilized in the inpatient treatment. Antidepressants were utilized in two out of every three hospitalizations and they were prescribed similarly to both genders. Fluoxetine, mirtazapine, citalopram and escitalopram were the most commonly prescribed antidepressants. Antipsychotic drugs were prescribed more often to girls than to boys. Quetiapine and olanzapine were the most often utilized antipsychotic drugs. Quetiapine was used, especially to treat girls and also those in voluntary treatment, whereas olanzapine was often prescribed to the adolescents involuntarily hospitalized. Other types of disorder-specific medications were also used to relieve the symptoms of concomitant sleep disorder or anxiety. During the psychiatric inpatient treatment, the psychosocial functioning of the adolescents improved markedly, and their depressive symptoms and feelings of hopelessness became relieved. The treatment outcome was estimated by the staff of the psychiatric units to be satisfactory in 25.5% of inpatient treatments. Over 40% of hospitalizations were discontinued due to the poor efficacy of the treatment. Depressive conduct disorder is a challenging disorder to treat. In addition to psychosocial interventions, pharmacological interventions aiming at specific clinical symptoms, such as depression, anxiety, sleeping disorders and aggression, represent an important part of a comprehensive therapeutic approach.

KEY WORDS: ADOLESCENT, DEPRESSION, CONDUCT DISORDER, DRUG TREATMENT, HOSPITALIZATION

INTRODUCTION

In ICD-10, a depressive conduct disorder simultaneously fulfills the general diagnostic criteria for a conduct disorder (F91) and those for one of the mood disorders (F30-F39). A conduct disorder is characterized by a variety of repetitive antisocial behaviours in which the basic rights of others or major age-appropriate social norms or rules are violated (1). Conduct disorder symptoms can be classified into four main subscales: 1. aggression towards people and animals, 2. destruction of property, 3. deceitfulness or theft, and 4. serious violations of rules. The typical signs of depression are: 1. depressed mood for at least for two weeks, 2. loss of interest or pleasure in activities that are normally pleasurable, 3. decreased energy or increased fatigability, and in addition at least one of the following symptoms: loss of confidence or self-esteem, unreasonable feelings of self-reproach or excessive and inappropriate guilt, recurrent thoughts of death or suicide, or any suicidal behaviour, evidence of a diminished ability to think or concentrate such as indecisiveness or vacillation, change in psychomotor activity, with agitation or retardation, sleep disturbance, change in appetite with a corresponding weight change (5).

The prevalence of conduct disorder in adolescents is approximately 5–10%, and it is more common in boys than in girls (2,3,4). However, it has been reported that a conduct disorder in conjunction with a depressive disorder occurs more frequently in girls (2).

Although a depressive conduct disorder should be treated primarily in an outpatient setting (5), when psychiatric inpatient treatment is needed, a short-term hospitalization focusing on the management of an acute crisis is usually recommended. There are situations that may require serious consideration of involuntary psychiatric hospitalization, such as severe impulse control problems with uncontrolled or threatened violence and severe suicidal ideation. In their review, Tcheremissine and Lieving postulated (6) that several drug groups could be effective therapeutic options for children and adolescents with conduct disorder and comorbid psychiatric conditions. However, the Finnish current care guidelines for conduct disorder in children and adolescents (7) recommend the use of risperidone or lithium, whereas fluoxetine, escitalopram, sertraline and duloxetine are the first-line medicines to treat adolescent depression (5,8).

The aims of this study were to examine the efficiency of the hospital treatment in hospitalized adolescents suffering from a depressive conduct disorder, gender differences of symptoms and to especially evaluate the use of psychotropic medications during hospitalization.

METHODS

This study sample comprised 13 to 17-year-old adolescents (n = 39; 23 girls, 16 boys) treated due to depressive conduct disorder (F92.0) in the two psychiatric inpatient units for adolescents in Kuopio University Hospital, Finland during the years 2002–2011. The decision for hospital treatment was made by psychiatrist. The psychiatric diagnoses were assessed using the ICD-10 classification. The demographic and clinical data of the adolescents as well as medication details were collected from the adolescents' medical files.

These two psychiatric units followed the principles of community care. Inpatient treatments involved several interventions including a thorough psychiatric examination, individual therapy, sessions with parents or guardians, assessments by a psychologist or occupational therapist, physiotherapy, somatic consultation and psychotropic medication when appropriate (9). Both voluntary and involuntary treatments were provided. These two psychiatry units operated as a tertiary care centre for the catchment area of North Savo District serving around one million inhabitants.

The permission for this study was provided by the ethical committee of Kuopio University Hospital and University of Eastern Finland and by the Medical Director of the University Hospital of Kuopio. Notification of the research was delivered in advance of data collection to Data Protection Ombudsman.

PSYCHIATRIC ASSESSMENTS

Depressive symptoms of adolescents were assessed by patients' self-rating with the Beck Depression Inventory (BDI) scale (10), which yields a total score from 0 to 63. The following interpretation of severity of depression scores was used: 0-9 minimal depressive symptoms, 10-18 mild to moderate, 19-29 moderate or severe depressive symptoms, and 30-63 severe depression symptoms.

Feelings of hopelessness in the adolescents were assessed by a self-rating questionnaire of hopelessness (Beck Hopelessness Scale, BHS), which is a 20-item, self-administered rating scale measuring an adolescent's negative expectancies concerning him/herself and their future life

(11). The total score ranges from 0 to 20, and the level of hopelessness increases with increasing scores. Based on the original cut-off points, the subjects were classified into four groups: 0–3 = no hopelessness at all, 4–8 = mild hopelessness, 9–14 = moderate hopelessness, and 15–20 = severe hopelessness (11).

The staff team assessed patients' psychosocial functioning by the Children's Global Assessment of Scale (CGAS), which measures psychological and social functioning. CGAS scores range from 100 (extremely high functioning) to 1 (severely impaired) (12). The scores of BDI, BHS and CGAS were taken into account for the assessment of treatment outcome only if they were reported both at entry and on discharge.

STATISTICAL ANALYSIS

The data were analysed using the GraphPadPrism program. Continuous variables were categorized as mean (±SD, range) and categorical variables as percentages. The statistical significance for categorical variables was analysed using Chi-squared test or Fisher´s exact test when the groups were small. Mann-Whitney U test was used for numeric variables of independent samples, whereas for dependent variables (BDI, BHS, CGAS) Wilcoxon signed rank test was applied to compare group means. In all analyses, a significance level of $p<0.05$ was set.

RESULTS

The adolescents examined in this study had a total of 51 inpatient treatment periods, which meant there were 1.3 inpatient treatments per adolescent. Twenty-one treatment periods (41.2%) represented the first time that these adolescents had been hospitalized in the psychiatric ward (*Table 1*). In both genders, the median length of hospital treatment was 8 days (range 2-60 days).

ADOLESCENTS' PSYCHIATRIC SYMPTOMS

Self-destructive behaviour, a wish to die and behavioural/conduct problems were the most common symptoms encountered in these adolescents (*Table 1)*. Self-injury and sleep disorders tended to be typical symptoms more evident in girls, whereas theft and vandalism were more common behaviours in boys. Anxiety and substance/alcohol misuse were also relatively common symptoms and comorbid psychiatric diagnoses were reported in 15.4% of the adolescents. Mental and behavioural disorders due to alcohol or other psychoactive substance misuse were the most common comorbidity (n = 3).

At entry, girls had statistically significantly higher BDI and BHS scores than their male counterparts, but there was no gender difference in the CGAS scores (*Figure 1*). On discharge, BDI scores had become significantly reduced and CGAS scores increased both in girls and in boys, but BHS scores were reduced statistically significantly only in girls.

Table 1: The characteristics of the study sample

	Hospitalizations		
	Girls (n=30) **n (%)**	**Boys (n=21)** **n (%)**	**Statistical significance**
Mean age at admission, mean (SD)	15.6 years (1,0)	15,7 (1.3)	ns
First psychiatric inpatient treatment	14 (51.9 %)	7 (33.3 %	ns
Voluntary treatment	24 (80.0 %)	11 (52.4 %)	p<0.05 (χ2=4,377, df=1)
Living in primary family (at least with one biological parent)	6 (22.2 %)	11 (52.4 %)	p<0.05 (χ2=5,829, df=1)
Self-destructive thoughts, death wishes	22 (73.35 %)	11 (52.4 %)	ns
Self-injury	23 (76.7 %)	8 (38.1 %)	p<0.01 (χ2=7,710, df=1)
Behavioural/conduct problems	18 (60.0 %)	17 (81.0 %)	ns
Sleep disorders	17 (56.7 %)	7 (33.3 %)	ns
Anxiety symptoms	15 (50.0 %)	13 (61.9 %)	ns
Substance abuse	15 (50.0 %)	11 (52.4 %)	ns
Suicide attempt	5 (16.7 %)	2 (9.5 %)	ns
Theft, vandalism	1 (3.3 %)	6 (28.6 %)	p<0.01 (χ2=6,645,.df=1)
Comorbid psychiatric diagnosis	4 (13.3 %)	2 (9.5 %)	ns

SD = standard deviation, ns = not significant, χ2 = chi square test, df = degree of freedom

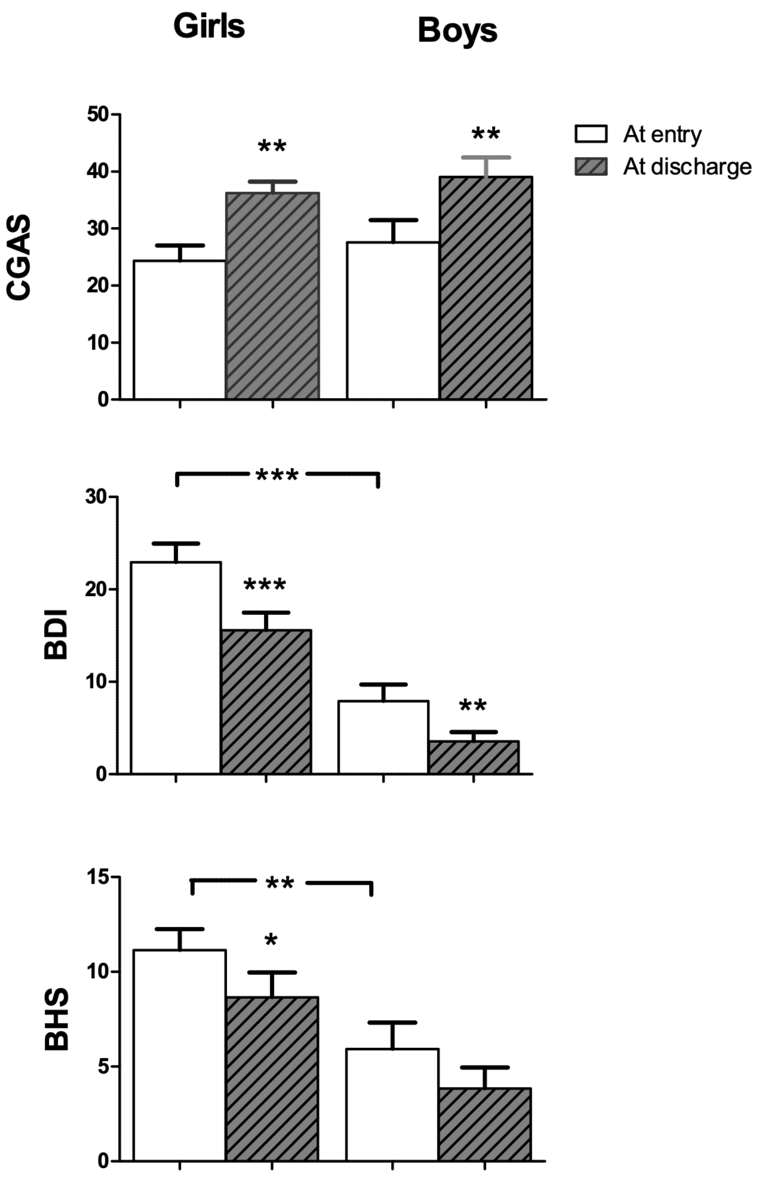

Figure 1: The scores of Children’s Global Assessment of Scale (CGASa), depressive symptoms (BDI) and feeling of hopelessness (BHSb) at entry and at discharge in girls and boys (n=30 and n=21 treatment periods, respectively) suffering from a depressive conduct disorder; adata missing from 22 treatment periods, bdata missing from 18 treatment periods. Mean+SEM. Statistical significance: * p<0.05, ** p<0.01, ***p<0.001.

TREATMENT OUTCOME

At the end of hospital treatment, the outcome of the treatment was estimated by the staff team despite the positive changes in the psychiatric assessments (BDI, BHS, CGAS). Only every fourth hospitalization (25.5%) ended with satisfactory clinical results. Poor efficacy of the treatment was the most common reason (43.1%) to end the psychiatric inpatient treatment. This could be due to the motivational deficits in some of the adolescents.

PSYCHOTROPIC MEDICATIONS

Psychotropic medications were utilized very often in the inpatient treatment, i.e., in 80% of the treatment periods. Adolescents were administered approximately 1.9 medications (range 0-6) during their hospital stay.

The majority of adolescents had started their antidepressant medications before being hospitalized. Only 36% of antidepressant medications were started during the psychiatric inpatient treatment, usually for adolescents who were in a psychiatric ward for the first time. Antidepressants were utilized in two out of every three hospitalizations (*Table 2*) and they were prescribed similarly to both genders. Fluoxetine, mirtazapine, citalopram and escitalopram were the most commonly prescribed antidepressants; duloxetine was also used occasionally. Every third girl and every fourth boy were being treated with antidepressants together with an antipsychotic medication.

Most of the antipsychotic medications were also initiated before the adolescents were taken into the psychiatric ward, i.e., only 38% of antipsychotic medications were started during the hospital treatment. Antipsychotic drugs were prescribed more often to girls than to boys (*Table 2*). Quetiapine and olanzapine were the most often utilized antipsychotic drugs followed by risperidone and aripiprazole. Clozapine, flupentixol, haloperidol and ziprasidone were prescribed to only a few individual patients. Quetiapine was prescribed especially to girls; this drug was also administered to those who were hospitalized voluntarily, whereas olanzapine was most often prescribed to adolescents subjected to involuntary treatment. There were no other differences in the medications of adolescents hospitalized voluntarily and those hospitalized involuntarily.

Anti-anxiety medications were more often needed in the treatment of girls compared to boys (*Table 2*). Oxazepam (n = 5) was the most common anxiolytic used in this study. Sedatives also tended to be more often prescribed to girls (*Table 2*), with zopiclone (n = 13) being the most commonly prescribed sedative. In ten (19.6%) treatment periods, the adolescents were treated in the hospital's psychiatric ward without being administered any psychotropic medication.

Figure 2 shows CGAS, BDI and BHS scores of those adolescents (n = 10) receiving no psychotropic drug treatment during their hospital stay in comparison to the adolescents with psychotropic medication. The comprehensive treatment in the psychiatric wards increased CGAS scores significantly in these ten patients, but because their BDI and BHS scores were low already at entry, the inpatient treatment caused no change in these values. From these ten adolescents, seven required no more psychiatric hospitalization in the years 2002-2011.

Table 2: Psychotropic drug treatments in adolescents with depressive conduct disorder

	Hospitalizations		
	Girls (n=30) **n (%)**	**Boys (n=21)** **n (%)**	**Statistical significance**
Antidepressants	**19 (63.3 %)**	**14 (66.7 %)**	ns
Fluoxetine	6 (20.0 %)	2 (9.5 %)	ns
Mirtazapine	4 (13.3 %)	4 (19.0 %)	ns
Citalopram	3 (10.0 %)	4 (19.0 %)	ns
Escitalopram	2 (6.7 %)	4 (19.0 %)	ns
Duloxetine	4 (13.3 %)	0	ns
Antipsychotics	**24 (80.0 %)**	**10 (47.6 %)**	$p<0.05$ ($\chi2$=5,829, df=1)
Quetiapine	11 (36.7 %)	2 (9.5 %)	$p<0.05$ ($\chi2$=4,792, df=1)
Olanzapine	7 (23.3 %)	3 (14.3 %)	ns
Risperidone	1 (3.3%)	3 (14.3 %)	ns
Aripiprazole	3 (10.0 %)	0	ns
Other	2 (6.7 %)	2 (9.5 %)	ns
Antidepressants + antipsychotics	**11 (36.7 %)**	**5 (23.8 %)**	ns
Anxiolytics	**10 (33.3 %)**	**2 (9.5 %)**	$p<0.05$ ($\chi2$=3,892, df=1)
Sedatives	**11 (36.7 %)**	**4 (19.0 %)**	ns

SD = standard deviation, ns = not significant, $\chi2$ = chi square test, df = degree of freedom

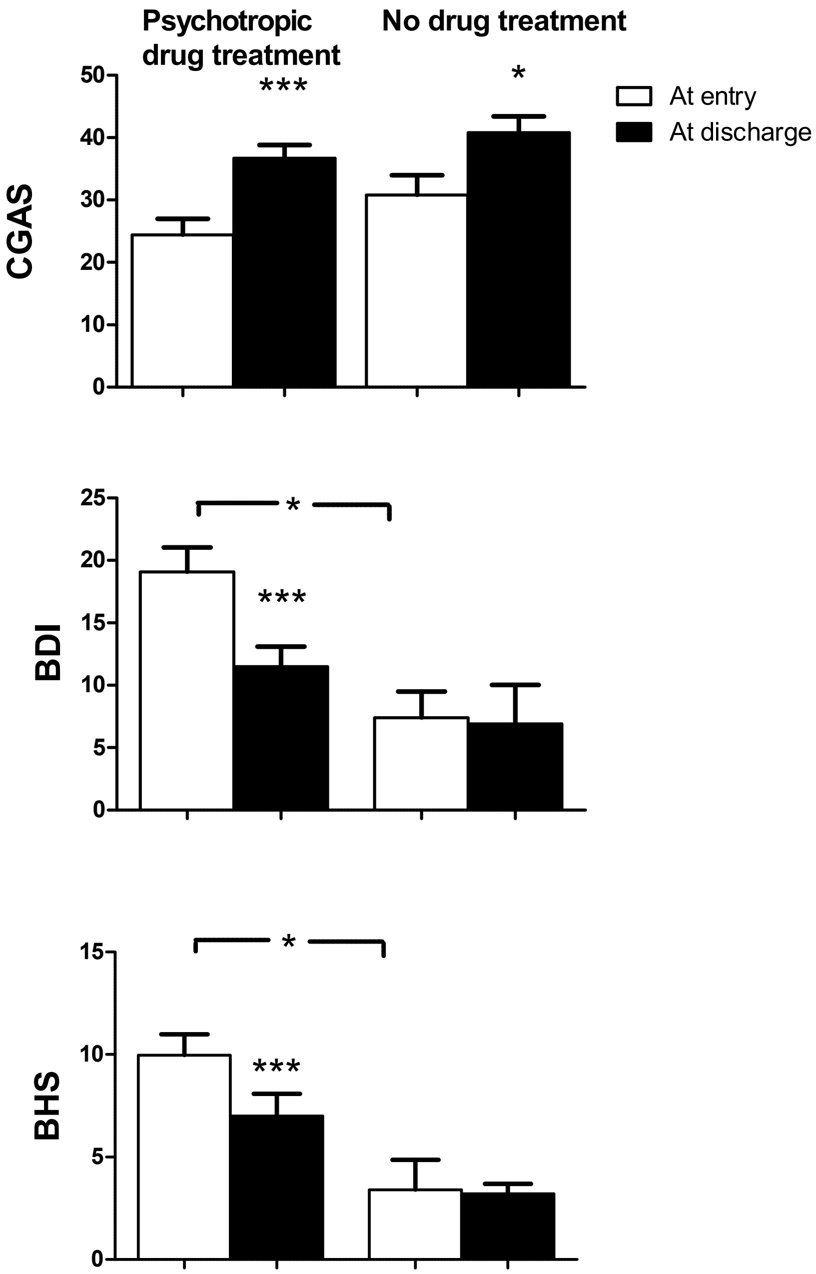

Figure 2: The scores of Children's Global Assessment of Scale (CGASa), depressive symptoms (BDI) and feeling of hopelessness (BHSb) at entry and at discharge in adolescents with psychotropic medication and those without drug treatments (n=41 and n=10 treatment periods, respectively); adata missing from 22 treatment periods; bdata missing from 18 treatment periods. Mean+SEM. Statistical significance: * p<0.05, ***p<0.001.

ADOLESCENTS WITH SEVERAL HOSPITALIZATIONS

Fourteen adolescents in this study (35.9%) required several hospitalizations (range 2-6) in the years 2002-2011. In a six-month period, girls tended to return to the hospital's psychiatric ward more often than boys (46.7% vs. 19.0% $\chi2$ = 4,126, df = 1, p<0.05), but later, at 12 months, the difference was no longer statistically significant (54.9% vs. 28.6%).

Those adolescents who returned to inpatient care within six months exhibited high BDI and BHS scores on discharge when compared to the values of the other subjects (*Figure 3*). All of them had exhibited self-destructive thoughts and/or wish to die (*Table 3*), many of them had displayed signs of self-harm or had a history of a suicide attempt and some also suffered from hallucinations. Background information from the medical files revealed that most of them (83.3%) had lived in an out-of-home placement. Common reasons to end the inpatient care had been poor efficacy of the treatment (38.9%) and a need for short-term inpatient care due to acute crisis of adolescents (22.2%). A better clinical situation was mentioned as a reason to end the hospitalization only in 16.7% of treatment periods.

Table 3. Comparison of adolescents returning to hospital treatment in six months with others

	Hospitalizations		
	Back in six months (n=18)	**Others (n=33)**	**Statistical significance**
Self-destructive thoughts, death wishes	18 (100.0 %)	22 (66.7 %)	p<0.01 (χ2=7,65, df=1)
Self-injury	16 (88.9 %)	14 (42.4 %)	p<0.01 (χ2=10,38, df=1)
Anxiety symptoms	12 (66.7 %)	16 (48.5 %)	ns
Sleep disorders	8 (44.4 %)	16 (48.5 %)	ns
Hallucinations	8 (44.4 %)	4 (12.1 %)	p<0.01 (χ2=8,36, df=1)
Suicide attempt	5 (27.8 %)	2 (6.1 %)	p<0.05 (χ2=4,64, df=1)

ns = not significant, χ2 = chi square test, df = degree of freedom

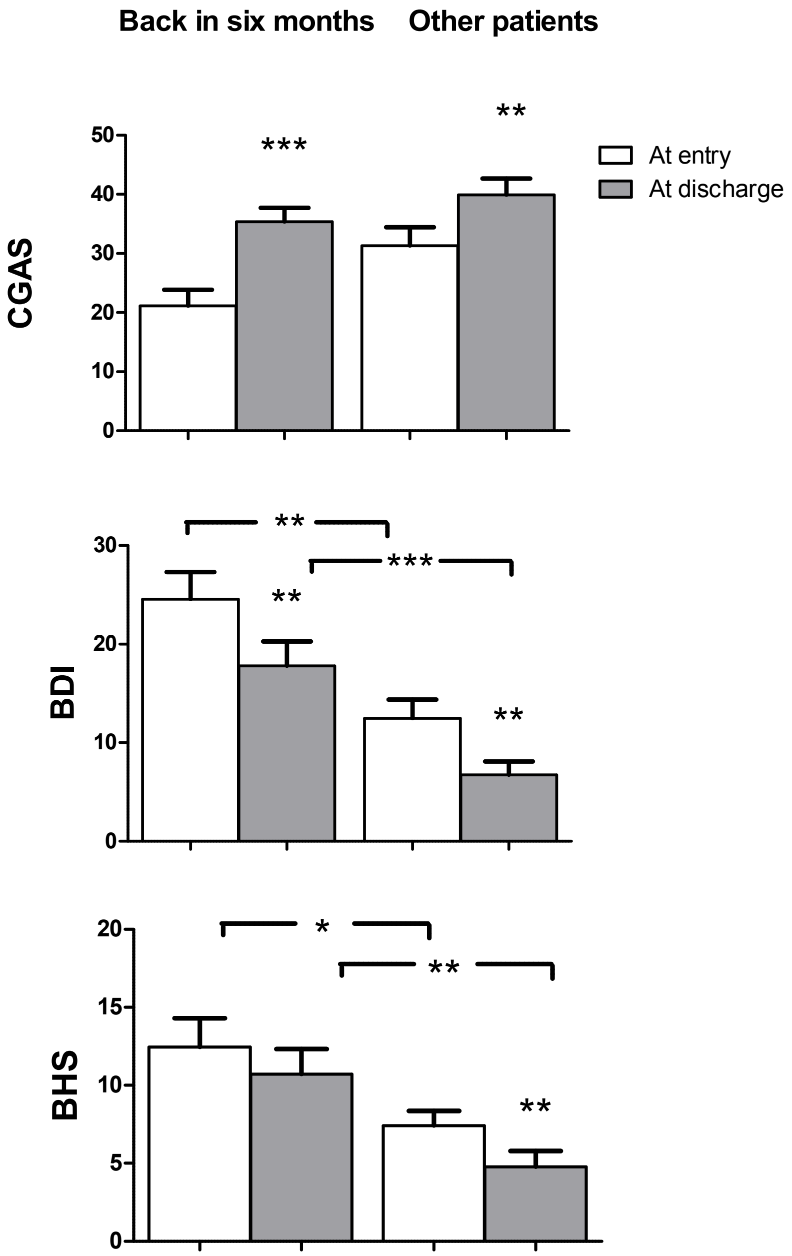

Figure 3: The scores of Children's Global Assessment of Scale (CGASa), depressive symptoms (BDI) and feeling of hopelessness (BHSb) at entry and at discharge in adolescents who were rehospitalized within six months compared to other adolescents in this study (n=18 and n=33 treatment periods, respectively); adata missing from 22 treatment periods, bdata missing from18 treatment periods. Mean+SEM. Statistical significance: * p<0.05, ** p<0.01, ***p<0.001

DISCUSSION

This clinical study examined the efficacy and especially the use of psychotropic medications in adolescents hospitalized due to a depressive conduct disorder. The inpatient treatment of adolescents with depressive conduct disorder is demanding: while it is multi-professional, quite often psychotropic drugs are also needed as a part of the psychiatric therapy. The psychiatric treatment outcome estimated by the staff teams was satisfactory in only 25% of the inpatient treatments, but most of the adolescents in this study no longer needed to return to psychiatric inpatient treatment during the ten-year study period (2002-2011). Psychotropic drugs, particularly antidepressants and antipsychotics, were commonly used in the treatment of adolescents. Antipsychotics and anti-anxiety drugs were more often prescribed to girls than to boys. The use of antipsychotic was often off-label use.

Conduct disorders are more common in boys than in girls (2,3,4), but in this study most of the adolescents with a depressive conduct disorder were girls. It may be that there is a lower threshold for girls with severe depressive conduct disorder being hospitalized. On the other hand, it has been reported that a conduct disorder frequently co-occurs with a depressive disorder, especially in girls (2). In line with this, at the time of arrival to the hospital, the BDI and BHS scores of girls were clearly higher when compared to the respective values of boys.

Disorders with conduct problems should primarily be treated with psychosocial interventions (7). However, medications may be included as a part of the therapy in order to help in the control of aggressive or impulsive behaviour, and they may promote the adolescent's ability to benefit from the psychosocial interventions. In addition, a disorder-specific medication may be useful to treat concomitant sleep disorder or anxiety. Nowadays, psychotropic drugs are more commonly prescribed for children and adolescents (13,14), although scientific evidence about medication efficacy in young people tends to be scarce with the drugs often being prescribed off-label. The present study identified the frequent use of psychotropic medication in psychiatric wards for adolescents with a depressive conduct disorder. Both antidepressants and antipsychotics were often utilized in the inpatient care. This result is in line with the study of Dean et al. (15) who reported that most of the children and adolescents using mental health services in Brisbane, Australia, were receiving psychotropic medications. Here, psychotropic drugs were prescribed mainly to those with high depression BDI scores and intense feelings of hopelessness.

According to the current Finnish depression care guidelines (5), any antidepressant medication for children and adolescents should be started with fluoxetine. Sertraline, escitalopram and duloxetine are also thought to be effective in the treatment of depression in young people (5,8), but other selective serotonin reuptake inhibitors (SSRIs) and serotonin and noradrenaline reuptake inhibitors (SNRIs) can also be considered (5), although with caution. There are some reports that serotonergic antidepressants are able to reduce aggressive symptoms in children and adolescents with disruptive behaviour disorders, including conduct disorder (6). Here, SSRIs (fluoxetine, escitalopram and citalopram) as well as mirtazapine were the most frequently prescribed antidepressants. Since sleep disorders and anxiety were common symptoms of the adolescents, the sedative and anxiolytic effects of mirtazapine may partly explain why it was chosen so often as an antidepressant.

Adolescents with conduct problems and high levels of reactive aggression and severe emotion dysregulation can be treated with antipsychotics if psychosocial interventions have not led to a meaningful reduction in reactive aggression. In one meta-analysis, risperidone was revealed to exert short-term effects on irritability and reactive aggression in 5 to 18-year-old children and adolescents with disruptive behaviour disorders (16). Finnish current care guidelines for conduct disorder recommend risperidone but lithium may also be an option (7). In the present study, quetiapine and olanzapine were the most often prescribed antipsychotic drugs. Quetiapine was especially used to treat girls but also those in voluntary treatment, whereas olanzapine was often prescribed to the adolescents involuntarily hospitalized. According to some studies (6,17,18,19,20,21), quetiapine, olanzapine and aripiprazole may represent possible treatment options in aggressive youngsters with conduct problems, but the current Finnish care guidelines for conduct disorder (7) do not recommend them. Long-term use of antipsychotics can lead to weight gain, metabolic syndrome, increased prolactin secretion and extrapyramidal adverse effects (22,23) and therefore, the lowest effective dose should be administered for the shortest time possible.

During the psychiatric inpatient treatment, the adolescents' depressive symptoms and feelings of hopelessness were relieved and their psychosocial functioning improved, according to the mean changes in the scores of BDI, BHS and CGAS at entry and to discharge. These changes happened within a relatively short time, since the median length of the hospitalizations was only eight days. The effects of antipsychotic or antidepressant drugs occur after a delay of weeks. If these medications were started during the psychiatric inpatient treatment, the effects of the medications would not have been soon visible, but the relief of anxiety and better sleep could have already improved adolescents' wellbeing. The psychosocial interventions used during the hospital stay also improved the psychosocial functioning of those young people having no psychotropic medications at all. The psychiatric treatment outcome was estimated by the staff of the psychiatric units, and the outcome was estimated to be satisfactory in only 25 % of the inpatient treatments. In line with this, 72% of adolescents still had low CGAS scores (CGAS<40) at discharge showing severely impaired psychosocial functioning. According to the professional staff, 43% of hospitalizations were discontinued due to the poor treatment efficacy. This treatment outcome differs from that of adolescents hospitalized due to depression. In young people with severe depression, a satisfactory clinical result can be obtained in as many as 66% of inpatient treatments; even in young individuals suffering from severe depression with psychotic symptoms, although a satisfactory clinical result was obtained less often, it was helpful in every second patient, i.e., in 58% of treatment periods (V. Snellman, personal communication). Most of the adolescents (67%), however, no longer needed to return to psychiatric inpatient treatment in our study period (2002-2011).

A small proportion of adolescents returned to psychiatric inpatient treatment within six months, even sometimes within a couple of days. These young people had high BDI and BHS scores at entry: they were suicidal, showed self-destructive behaviour and some of them suffered from psychotic symptoms. These findings are in line with earlier reports (24,25). Over 80% of these adolescents were living in an institution or in foster care. It has been reported that adolescents who have been placed to live away from home experience more psychiatric symptoms than their peers (26). On discharge, the BDI and BHS scores of these adolescents were still high. It could be speculated that the treatment period in the hospital should have been longer in the first place. However, the lack of motivation in cooperating and trying to resolve emotional problems or interpersonal conflicts, or simply the inability of these adolescents to adhere to the rules within the psychiatric units, might partly explain the poor treatment outcome. Thus, the inpatient care was mainly crisis management, whereas other measures involved, in foster care as well as in outpatient care, are needed.

LIMITATIONS OF THE STUDY

One limitation of this study is the small number of adolescents with a depressive conduct disorder. However, the study sample consisted of adolescent psychiatric patients hospitalized in the geographically large area of Eastern Finland, thus representing the most serious cases in this region's general adolescent population. Psychiatric diagnoses were made by clinicians who worked in psychiatric wards and using the ICD-10 diagnostic system without any structured interview, which would be more reliable. Secondly, the data were collected from patients' medical files that were not written for scientific purposes. Therefore, some CGAS and BHS data were missing and the results concerning the functional capacity and pessimistic attitude are not totally reliable. Furthermore, we had no access to the adolescents' outpatient information, and therefore it is not possible to estimate how well the whole psychiatric chain of care was working due to the fact that this important piece of information was lacking.

In conclusion, it is challenging to treat a depressive conduct disorder in adolescents. In addition to psychosocial interventions, pharmacological interventions aiming at specific clinical symptoms, such as depression, anxiety, sleeping disorders and aggression, represent an important component of the comprehensive therapeutic approach. More research concerning treatment of adolescents who have depressive conduct disorder is needed.

Acknowledgements

We want to thank Dr. Ewen MacDonald for advice on the text.

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ALIISA TENHOLA AND RIITTAKERTTU KALTIALA

TRANSGENDER IDENTITY AND EXTERNALIZING SYMPTOMS AND PROBLEM BEHAVIOURS IN ADOLESCENCE: IS THERE A CONNECTION?

ABSTRACT

Gender dysphoria and transgender identity in adolescence have been associated with over-representation of internalizing symptoms and disorders, but research on their associations with externalizing symptoms and disorders is scarce and the findings inconsistent. We set out to study the possible associations between transgender identification and externalizing symptoms and behaviours among ninth graders who participated in the Adolescent Mental Health Cohort and Replication Study. In total 1,386 respondents aged mean (SD) 15.59 (0.41) years participated. Of the respondents, 96.9% reported cisgender identity and 3.1% identified as transgender. Nine different externalizing symptoms were compared between cisgender and transgender identifying adolescents. After controlling for confounding due to age, sex, honesty of responding and depression, no differences in externalizing symptoms were seen between the gender identity groups. Transgender identification in adolescence is not associated with elevated or diminished externalizing symptoms.

KEY WORDS: TRANSGENDER, ADOLESCENCE, EXTERNALIZING DISORDERS, POPULATION SURVEY

INTRODUCTION

GENDER, GENDER IDENTITY AND GENDER DYSPHORIA

The term gender can refer to biological sex but also to psychological and social aspects of one´s gender (1). Gender identity is a person`s inner sense of their gender and a component of a person´s identity. Gender identity is usually congruent with biological sex, but these may differ (2). According to DSM-5, Gender Dysphoria (GD) refers to a remarkable incongruence between one´s experienced gender and sex assigned at birth that causes clinically significant distress or causes harm in important areas of functioning (3). Identifying as transgender means that the experience of gender identity and biological sex do not match. Not everyone identifying as transgender experiences gender dysphoria (4).

ADOLESCENCE AND GENDER

Adolescence is taken to occur between the ages of 12 and 24. It is a developmental stage during which rapid maturation of the central nervous system, biological growth and reaching sexual maturity take place. The cognitive, psychological and social developmental events of adolescence lead to adulthood (5,6).

One of the key developmental tasks of adolescence is to find one's own identity. Adolescents aim to find their own place and role and form a concept of right and wrong (7). According to Havighurst, the developmental tasks of adolescence are to form personal values and morals that will enable the adolescent to build their personality, and further to form a mature picture of the different genders, to accept one's own sexual body and to find an established gendered role (8,9). Thus, many of the development tasks have a connection to gender.

MENTAL DISORDERS AND GENDER IDENTITY

Adolescents who identify as transgender or suffer from GD are more likely suffer from internalizing mental disorders than adolescents whose gender identity is congruent with their biological sex. Studies across Europe and North America have found that 40–45% of adolescents referred to specialized gender identity services have significant mental health symptoms, most commonly depression, anxiety, self-harm and suicidal ideation/behaviour (10). An American clinical primary care study compared mental health complaints between 12 to 29-year-old transgender and cisgender patients. Of the transgender youth, 50.6% had depressive symptoms or depression compared to 20.6% of the controls. In addition, 26.7% of the transgender and 10% of the cisgender subjects had an anxiety disorder, and transgender youth also had more commonly suicidal ideation (31.1%), suicide attempt (17.2%) and self-harm without lethal intent (16.7%) than did cisgender patients (11.1%, 6.1% and 4.4%) (11).

Population studies also suggest a higher prevalence of internalizing mental health symptoms among transgender than among cisgender youth. In a school survey in New Zealand, 41.3% of transgender identifying adolescents had depression or symptoms of depression compared to 11.8% of cisgender students. Of the transgender identifying students 19.8% and of the cisgender students 4.1% had attempted suicide, and self-harm was also more common among transgender identifying students (45.5%) than among cisgender students (23.4%) (12).

Significantly less is known about the connection between externalizing mental disorders and gender dysphoria. Externalizing disorders appear as behavioural symptoms such as impulsivity, disruptive conduct and substance use which are often harmful not only to oneself but also to others (13). Studies among adolescents referred to specialized gender identity services have rarely mentioned externalizing disorders (10). Among transgender and gender non-conforming adolescents enrolled in a primary care service system in the USA, both internalizing and externalizing disorders were more common than among controls of either sex. Of externalizing disorders, attention deficit disorder, conduct and/or disruptive disorders and personality disorders were more common among transgender and gender non-conforming adolescents (14). In two survey studies in the USA, transgender identifying students were markedly more likely to engage in substance abuse and problem gambling than were other students of the same age (15,16).

The high prevalence of internalizing disorders in adolescents with gender dysphoria and transgender identifying adolescents has been explained by the difficulties of experiencing and expressing gender, and by the stress resulting from the discomfort. Gender expression may further lead to being discriminated against and to both mental and physical violence, which increases the risk of social exclusion and mental disorders (4). Discrimination against adolescents experiencing gender dysphoria may also impair their social skills due to a lack of relationships. This can lead to social phobia (17). According to gender minority stress theory, sexual and gender minorities have significant chronic stress caused by prejudice and discrimination they experience in life. This chronic stress increases the risk of mental and physical health problems (18).

It has been suggested that both stress resulting from experiencing gender dysphoria/transgender identity and discrimination related to it can also manifest as externalizing disorders (4), even though few studies have focused on externalizing disorders among youth with gender dysphoria or transgender identification. Research may simply have ignored the possibility of externalizing symptoms and disorders among youth with gender dysphoria/transgender identity because of focusing on internal stress and victimization. Externalizing disorders are common in adolescents; they often co-occur with internalizing mental disorders and there is some overlap between internalizing and externalizing mental disorders and symptoms (19). To better understand the connections between GD/transgender identity and mental health in adolescence, research needs to address externalizing symptoms and disorders.

AIM OF THE STUDY

The aim of the present study is to explore the possible associations of externalizing symptoms and problem behaviours with transgender identification among adolescents. More specifically, we sought answers to the following questions:

1. are externalizing symptoms and problem behaviours associated with transgender identification among adolescents in the general population, and
2. do the possible associations persist when internalizing symptoms, often overlapping with externalizing symptoms, are controlled for?

MATERIALS AND METHODS

The data for this study were obtained from the Adolescent Mental Health Cohort study (AMHC) 2018-19 wave. The AMHC is an anonymously completed school survey providing cross-sectional time trend data on adolescent mental health. It has been conducted among ninth graders (15 to 16 years old) in Tampere, Finland, in the academic years 2002–03, 2012–13 and 2018–19. The latest wave was collected online. The participants logged in to the survey using personal codes during a school lesson supervised by a teacher, who provided information on the study but did not intervene in the responses. Participation in the survey was voluntary. After reading the written information the adolescents were asked to indicate their consent online. Parents were informed by a letter in advance, but active parental consent was not sought. The study was duly approved by the ethics committee of Tampere University Hospital and given appropriate administrative permission by the appropriate authorities of the City of Tampere (20,21).

In the autumn term of the academic year 2018-19, 1,674 ninth graders were identified from the pupil register of the city, and personal codes to login to the survey were created for them. A research assistant attended each school on an agreed date and distributed the codes to the pupils. Altogether 1,425 adolescents were present on the survey days, obtained their codes and logged in to the survey. Of these, 39 (2.7%) declined to respond, leaving 1,386 (82.8% of the total eligible sample) participants, of whom 676 (48.8%) reported that their sex (as indicated in identity documents) was female and 710 (51.2%) male. The mean (SD) age of the participants was 15.59 (0.41) years.

MEASURES

Sex and gender identity. At the beginning of the survey the respondents reported their sex, with response alternatives “boy” and “girl”. It was explicitly mentioned that this question referred to sex as stated in official identity documents. According to reported sex, the respondents are referred to here as boys and girls, or as males and females. Later, in the section of the survey addressing health, respondents were asked about their perceived gender as follows: “Do you perceive yourself to be…”, with response options “a boy/a girl/both/none/my perception varies”. According to sex and perceived gender, the respondents were categorized to one of three gender identities: cisgender identity (reported male sex and perceives himself as a boy; or reported female sex and perceives herself as a girl), opposite sex identification (male sex, perceives herself to be a girl; or female sex, perceives himself to be a boy) and other/non-binary gender identity (independent of sex: perceives her/himself to be both a boy and a girl, perceives her/himself to be neither a boy nor a girl, variable). Of the respondents, 1,343 (96.9%) reported cisgender identity, 3 (0.2%) opposite sex identification and 40 (2.9%) other/non-binary gender identity. In the analyses, cisgender and transgender (=opposite sex identification or other/non-binary gender identity) were compared.

Externalizing symptoms and problem behaviours were analysed as follows:

Aggressive and rule-breaking behaviours were measured using the Youth Self Report (YSR) aggression and delinquency scales (22). Aggressive/rule-breaking behaviour reaching 90 percentiles in this dataset was considered significant aggressive/rule-breaking behaviour.

Alcohol use was measured in the survey with two questions: “On the whole, how often do you consume alcohol, a half-bottle of beer or more, for example?” and “How often do you consume alcohol until you are really drunk?” In the analysis, frequency of alcohol use was dichotomized to at least monthly vs. less frequently. The number of occasions of being drunk was dichotomized to ten times vs. less or not at all. Earlier studies have demonstrated that alcohol use exceeding these limits is problematic in this age group (23). In the present sample, 10.4% reported drinking alcohol at least monthly and 4.4% reported having been drunk ten or more times.

Smoking was surveyed with two questions. The first question was: “How many cigarettes, pipefuls and cigars have you smoked altogether?” with the response alternatives: none / just one / about 2–50. The second question was: “Which of the following alternatives best describes your current smoking habits?” It had the response alternatives: once a day or more often / once a week or more often, but not every day / less often than once a week / stopped smoking (temporarily or permanently) (24). In the analysis, smoking was based on combination of the two questions dichotomized to not smoking (not at all or just once) vs. current or earlier smoking, more than just once. Of the respondents, 14.5% reported current or earlier smoking.

Substance use was also measured by questions from the School Health Promotion Study: “Have you ever tried or used marijuana or hashish / sniffing / prescription drugs or alcohol and prescription drugs combined to become intoxicated / ecstasy, amphetamines, Subutex, heroin, cocaine, LSD, gamma or similar narcotic substances / narcotic substances that you did not know what it was?” All of these had response options: never / once / two to four times / five times or more. In the analysis, the use of drugs other than alcohol alone was dichotomized to no use or experimentation with substances vs. has experimented with or used substances. Of the respondents, 10.8% had experimented with or used substances other than alcohol.

Risk-taking sexual behaviour was surveyed by asking, first, if the respondent had ever had sexual intercourse (yes/no) and further, with how many partners (one / two / three / four / five or more). In the analysis, reporting five or more partners for sexual intercourse was defined as risk-taking sexual behaviour (25). In the present sample, 2.9% had experienced intercourse with five or more partners.

Truancy was elicited by asking how many times adolescents had played truant from class during the ongoing school year (not at all vs. at least once). Of the respondents, 10.2% had played truant at least once during the ongoing term.

Involvement in bullying was elicited with questions from the WHO Youth Study (26). Bullying was first defined as: “doing or saying bad things by other students or groups of students and by constantly teasing one student in a way they don´t like; it is not bullying if two students with approximately equal strength argue or fight”. After that the students were asked to indicate how often, during the ongoing term, they had been bullied/bullied others (several times a week / about once a week / less frequently / not at all). In the analyses, bullying others was dichotomized to, not at all vs. any. Of the respondents, 10.9% reported any bullying behaviour during the ongoing term.

Depression was measured by the Finnish R-BDI version of the Beck Depression Inventory. The 13-item BDI-13 is a self-reporting scale used to measure symptoms of depression. Each item in the survey is scored on a scale of 0 to 3 depending on the severity of the symptom. The BDI-13 is reliable in predicting clinical depression (27). In the analyses, depression was used as a continuous symptom score.

HONESTY OF RESPONDING

In survey studies adolescents may both under- and over-report their symptoms, problem behaviours and belonging to minorities (28). An honesty question has been suggested as a method for reducing bias (29). In accordance with this, an honesty question was presented: “Have you responded in this survey as honestly as possible?” with response alternatives “yes” and “no”. Of the participants in the present study, 87.7% answered “yes”, 2.8% answered “no” and 9.5% did not respond to the honesty question. The honesty question with these three response categories was used a confounder and controlled for in the analyses.

STATISTICAL ANALYSES

The associations between transgender identity and the externalizing symptoms and problem behaviours were studied using cross-tabulations with chi-square statistics and with logistic regression. In logistic regressions, the outcome variables were entered each in turn as the dependent variable and gender identity (transgender vs.

cisgender) as the independent variable, controlling for: 1) age, sex and honesty of responding, and 2) age, sex, honesty of responding and depression. Odds Ratios with 95% confidence intervals are reported.

RESULTS

In bivariate analyses, aggressive behaviour, repeated drunkenness and frequent alcohol use were more common among adolescents reporting transgender identity than among cisgender adolescents (*Table 1*). After controlling for age, sex and honesty of responding, aggressive behaviour and frequent alcohol use persisted as statistically significantly associated with transgender identity. When, finally, depression was added, all differences between cisgender and transgender groups were levelled out (*Table 1*). Depression was statistically significantly associated with all the externalizing symptoms studied (ORs 1.05-1.35).

DISCUSSION

In this study, we analysed the associations between externalizing symptoms and problem behaviours and transgender identification among adolescents. We also explored if the possible associations persist when internalizing symptoms (depression sum score) were controlled for. Studies among clinical samples suggest that even if adolescents with transgender identity and gender dysphoria present excessively with internalizing disorders, externalizing psychopathology is not a noticeable problem among them (10,11) However, some population and primary care studies suggest that transgender adolescents also present with excessive externalizing syptoms such as substance use and gambling (14,15).

In the present study, no associations were detected between externalizing disorders, problem behaviours and transgender identification. Specifically, when depression was controlled for, even the few first detected associations between transgender identity and externalizing symptoms levelled out. A novel contribution of our study is that we explored a range of externalizing symptoms and behaviours and also controlled for depression, which is common among transgender adolescents in both clinical and population samples (10,11,12), and often comorbid with externalizing symptoms (20). Even if transgender adolescents in clinical and population samples present with over-representation of internalizing disorders, the same is not true of externalizing disorders.

An association between depression and externalizing symptoms and problem behaviours was confirmed in the present study as reported in earlier literature (19).

The few earlier studies that have suggested a connection between externalizing symptoms and transgender identity (14,15,16) were conducted in the USA. There may be cultural factors influencing differences in findings between the USA and Finland. Externalizing symptoms among transgender identifying adolescents may be more sensitive to the culture and social factors than internalizing symptoms, and transgender adolescents may also be treated differently in different cultures. For example, parental rejection as a reaction to adolescent transgender identity has been prominently discussed in the USA (30) but not much observed in Finland (31).

The maturity gap theory posits that as biological maturation is accomplished, adolescents experience a discrepancy between their biological maturation, resulting in their desiring autonomy and independence, and their social maturation, i.e., the autonomy allowed to them, that lags behind their biological maturation in contemporary Western societies (32,33,34). Being accorded a status of restricted autonomy, adolescents start to engage in delinquent acts in an attempt to bridge the gap between their self-perceived maturity and the way society perceives them. Transgender identifying adolescents may not accept their biological maturation or may not perceive it as accomplished in such a way as to demand proceeding to adult privileges, and therefore they may not have the experience that social maturation lags behind biological maturation. Thus, applying the maturity gap theory, transgender identifying adolescents may not experience the same need to engage in delinquent acts as do cisgender adolescents. Transgender identifying youth, on the other hand, experience a discrepancy between their biological maturation and their gender identity, which may then lead particularly to internalizing symptoms. However, in this study there were no indications that identifying as transgender would protect from externalizing disorders, as in the final models, transgender adolescents did not display decreased Odds Ratios for any of the studied externalizing behaviours.

METHODOLOGICAL CONSIDERATIONS

Our study has several strengths. In Finland, 99% of children attend compulsory comprehensive education (grades 1-9).

Therefore, the data collected through schools is very representative of adolescents between the ages of 15 to 16. The data are also socio-economically representative (21). Controlling for honesty in responses is another strength of our study, as is controlling for depression associated with both transgender identity and externalizing symptoms.

A limitation of the present study is that although we explored several externalizing symptoms and behaviours, some of the symptoms investigated were rather rare, which weakens the reliability of the findings. The reliability is, however, strengthened by the fact that all the analyses pointed in the same direction. In addition, we were not able to investigate the differences between transgender identifying girls and boys due to the number of participants.

Future studies should also explore the associations between gender identity issues and externalizing symptoms in clinical gender-referred samples, as transgender identifying adolescents in general population may represent a different subgroup of adolescent development than those with clinical gender dysphoria seeking gender reassignment.

Table 1. Externalizing symptoms and behaviours according to gender identity (%, n/N), and associations between gender identity and externalizing symptoms and behaviours when age, sex and honesty of responding are controlled for (Model 1), and when depression is added to the model (Model 2) (OR, 95% CI, p)

	cisgender	**transgender**	**p cis vs. trans**	**OR (95% CI), p Model 1 controlling for age, sex, honesty of responding**	**OR (95% CI), p Model 2 controlling for age, sex, honesty of responding, depression**
Aggressive behaviour	**11.9% (156/1312)**	**25.6% (11/43)**	**0.01**	**2.3 (1.1-4.7), p=0.02**	1.6 (0.7-3.4), p=0.3
Rule-breaking behaviour	10.9% (143/1316)	19.0% (8/42)	0.09	1.7 (0.8-3.8), p=0.2	1.1 (0.4-2.6), p=0.9
Been drunk 10 or more times.	**4.1% (54/1317)**	**1.6% (5/43)**	**0.04**	2.5 (0.8-7.3), p=0.1	1.5 (0.5-4.8), p=0.5
Alcohol at least monthly	**10.1% (130/1288)**	**23.3% (10/43)**	**0.01**	**2.4 (1.1-5.1), p=0.03**	1.8 (0.8-3.9), p=0.2
Smoking	14.6% (194/1329)	11.6% (5/43)	0.4	0.7 (0.3-1.9), p=0.5	0.4 (0.1-1.1), p=0.09
Substance use	10.6% (138/1298)	19.0% (8/42)	0.08	1.7 (0.8-3.9), p=0.2	1.0 (0.4-2.3), p=0.9
Truancy	11.6% (137/1182)	18.4% (7/38)	0.2	1.6 (0.7-3.8), p=0.3	0.9 (0.3-2.4), p=0.8
Bullied others at least once	10.8% (143/1318)	16.7% (7/42)	0.2	1.5 (0.6-3.7), p=0.3	1.1 (0.5-2.8), p=0.8
Risk-taking sexual behaviour	3.0% (40/1329)	4.7% (2/43)	0.4	2.1 (0.5-9.0), p=0.3	1.9 (0.4-8.7), p=0.4

CONCLUSION

Transgender identifying adolescents do not display more externalizing symptoms than their mainstream peers. This supports the understanding of identifying as transgender in adolescence not as a disorder but as variation of gender identity development. Externalizing symptoms do not need particular attention when health and social care professionals and schools encounter transgender identifying adolescents.

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HAS GENERAL POPULATION ADOLESCENTS´ BODY IMAGE CHANGED ALONGSIDE THE INCREASE IN THE NEED FOR GENDER IDENTITY SERVICES?

ABSTRACT

Objectives: To examine body image among general population adolescents and possible changes therein during a period when adolescent gender identity concerns appear to have increased, and to compare population adolescents' body image to that of adolescents seeking gender reassignment. Materials and Methods: Two similar surveys in upper secondary schools in the Tampere city area with a five-year interval during the years 2011-2017. Comprising both time points, a total of 1,102 female and 644 male adolescents participated in the study and provided acceptable data. Clinical sample collected retrospectively from the case files of 102 adolescents (16 birth-assigned males and 86 birth-assigned females) seeking gender reassignment in the nationally centralized adolescent gender identity service of Tampere University Hospital in the period 2011-2017. Body image was measured using the Body Image Scale (BIS) in both the clinical and the general populations samples. Results: Female adolescents were less satisfied with all aspects of their bodies than males but nevertheless scored average in the satisfied range in BIS. BIS total and subscale scores did not differ statistically significantly between 2012 and 2017 in either sex. Adolescents seeking gender reassignment scored higher in BIS total and subscales than adolescents of either sex in population, and into dissatisfied range. Conclusions: Even if seeking help for gender dysphoria has increased, general population adolescents' body image has remained unchanged over an interval of five years.

KEY WORDS: BODY IMAGE, ADOLESCENTS, POPULATION, GENDER DYSPHORIA

INTRODUCTION

Body image is a subjective perception of an individual´s appearance, a comprehensive psychological experience comprising thoughts, beliefs, feelings and behaviours related to one's physical appearance (1). It is influenced by several different aspects such as age, psychological, social and cultural factors (2–4). Body image begins to form in early childhood and the formation continues for the rest of our lives. Maltreatment and factors threatening physical integrity predispose to disturbed body image (5–7). Disturbed body image may manifest as excessive anxiety related to how individuals feel about their appearance, for example, body build such as muscles or thigh size, genitals, and a feeling of being unattractive (8,9). Body dysmorphic disorder refers to a condition in which the individual is constantly preoccupied with one or more slight or imagined defect in appearance that causes significant distress or impairment in social, occupational or other areas of functioning (10).

One of the developmental tasks of adolescence is to become acquainted with the changed body, to accept it, and to develop a healthy body image. The childhood image of one's appearance is replaced by a whole new one, when the body undergoes a greater change during puberty than at any other stage of life. Increased interest in one's appearance during adolescent years may be a result of this (11). There is a significant gap between genders in this development task of adolescence, as boys tend to be more satisfied than girls with their changing bodies (12,13). Female adolescent physical puberty includes an increase in adipose tissue as well as weight gain (14). These characteristics are incongruent with current socio-cultural ideals regarding appearance, consequently making female adolescents more dissatisfied with their own bodies and more susceptible to psychiatric disorders related to body image (15,16). However, not only female adolescents experience dissatisfaction with their bodies. In male adolescents, body dissatisfaction often focuses on muscles and weight (17,18). Body image concerns predispose young people to disturbed eating behaviour, depressive symptoms and anxiety (12,19,20). Impaired body image can be both a precursor of mental disorders and a consequence of them. Body image concerns are not only associated with appearance-related mental disorders but also anxiety disorders and post-traumatic stress disorder after childhood sexual abuse. A broad range of psychiatric disorders predispose to a more negative body image (5).

Gender identity is an individual´s perception of which gender one belongs to. The exact mechanism of gender identity formation is unknown. Most likely, the development of gender identity is an outcome of a complex interaction between biological, environmental and psychological factors (21). Gender dysphoria refers to anxiety and distress related to perceived incongruence between biological sex and experienced gender. The distress relates to body image, especially to primary and secondary sex characteristics (22,23). The DSM-5 defines gender dysphoria as a strong desire to be of a gender other than one's assigned gender and to be treated as belonging to a gender other than one's assigned gender, a significant incongruence between one's experienced or expressed gender and one's sexual characteristics and a strong desire to be rid of one's sexual characteristics due to incongruence with one's experienced or expressed gender (24).

The number of children and adolescents seeking gender identity services has increased throughout the Western world (25). While before the 2000s, minors contacting gender identity services were mainly prepubertal natal boys, nowadays adolescent natal females predominate (26,27) The aetiology of gender dysphoria is not precisely known, nor are the reasons for the increase in the number of young people seeking gender identity services. The emergence of this phenomenon may be due, for example, to awareness of the availability of treatment, depathologization of sex-discordant gender identities and increasing social acceptance (28). The visibility in the social media of transgender identities may also influence young people's perceptions of themselves. The proportion of adolescents experiencing gender dysphoria or identifying as transgender may also be increasing in the population (29,30).

Gender identity and its formation are strongly associated with an individual's physical and perceptual appearance. Earlier research has shown that female gender and femininity are a risk factor for body dissatisfaction (12,15,31). According to a study of clinical data (32), the establishment of gender identity has an impact on body satisfaction in adolescents with gender dysphoria. Those diagnosed with persistent gender dysphoria in adolescence reported greater dissatisfaction with primary and secondary sex characteristics of the body and neutral body characteristics than those with temporary feelings of gender dysphoria (32). In one study, about a third of adolescents and young adults seeking gender reassignment perceived themselves as too big, and it was also noticed that both desire to lose weight and to gain weight was associated with suicidality in this sample (33). Finally, in a qualitative study among transgender-identifying youth recruited through interest groups, 70% of participants expressed some degree of dissatisfaction with their bodies, not only with the gender characteristics but also particularly with body size (34).

The research on body image in adolescents has concentrated mainly on the relationship between weight- and size-related concerns and mental health. A more comprehensive picture of adolescents' satisfaction or dissatisfaction with their different body parts is lacking. The increase of adolescents contacting gender identity services (25) and the simultaneously observed increase of adolescents experiencing feelings of gender dysphoria in general population (29) may relate to changes in adolescents' perceptions of their bodies and body image in the population. On the other hand, knowledge about general population adolescents' body image and possible changes therein is needed for reference in the clinical assessment of adolescents contacting gender identity services due to feelings of gender dysphoria.

The aim of this study was to gain understanding of the extent to which adolescents in general population are satisfied/dissatisfied with their various body parts, and to contrast the body image of adolescents seeking medical gender reassignment with that of their peers in general population. More specifically, we sought answer to the following questions:

1. How satisfied/dissatisfied are middle to late adolescents in general population with their various body parts, overall body image, and gendered and neutral body parts?
2. How does body image differ between female and male adolescents in general population?
3. Has adolescents body image changed from 2012 to 2017, when there has been a considerable increase in adolescents seeking gender reassignment?
4. How does the body image of adolescents seeking gender reassignment differ from that in general population?

MATERIALS AND METHODS

PARTICIPANTS

The data used in this study were collected from upper secondary schools in the Tampere city area in southern Finland. In the academic year 2012–2013, three upper secondary schools participated in the survey, and in 2017 there were four participating upper secondary schools. All students present on the day of the survey were invited to participate. Prior to completing the survey, students were informed both in writing and orally about the anonymity and voluntary nature of the survey, as well as their right to withdraw at any time if they were unwilling to participate. The survey questionnaire was completed under the supervision of a teacher in the classroom. The teacher ensured that everyone had enough privacy to respond to the questionnaire but did not interfere in the process. In the first wave, students responded to a pencil-and-paper survey and in the second wave they responded online. Consent to participate in the study was given by returning the sealed envelope or by pressing the "done" button in the internet survey. To ensure anonymity, no identifying data were collected in either wave. A total of 401 females and 318 males participated in 2012-2013, and 701 females and 326 males participated in 2017. The population sample had a mean (sd) age of 17.1 (0.87) years. Over this period, the percentage of adolescents in general population reposting potentially clinically significant feelings of gender dysphoria increased fourfold (29).

CLINICAL SAMPLE.

The data of the clinical sample used in this study were collected retrospectively from the case files of adolescents seeking gender reassignment at the nationally centralized adolescent gender identity service of Tampere University Hospital whose assessments had been completed in the period 2011-2017. The chart information on 102 adolescents (16 birth-assigned males and 86 birth-assigned females) was used in the present analyses. At the time of the assessment, the patients had not yet received hormonal intervention. The clinical sample had a mean (sd) age of 16.8 (1.0) years. Over this period, the annual number of referrals of minors to gender identity assessment in Finland increased almost sixfold (29).

MEASURES

Body image was measured by the Body Image Scale (BIS) (35). The BIS is a 30-item list of body parts and features. These parts are rated on a 5-point scale from very satisfied (1) to very dissatisfied (5). If a participant notes the neutral to very dissatisfied option (scores 3, 4, or 5) for any item, that individual is asked if they would like to alter this body part by means of medical or surgical treatment. A total BIS score is reported as the mean (sd) of the item scores, thus ranging 1-5. Scores higher than 3 are considered indicative of clinically significant body dissatisfaction, and are assumed to capture clinically significant gender dysphoria. The BIS items can be divided into three groups: the primary gendered (primary sex characteristics), secondary gendered (secondary sex characteristics) and neutral body parts (nose, shoulders, chin, calves, hands, Adam's apple, eyebrows, face, feet and height). Three subscale scores are similarly reported as mean (sd) values of the items in these three groups. There are two versions of the BIS, one for each gender. The differences emerge in primary gendered parts (from males eliciting satisfaction with penis, scrotum, testes; from females, clitoris, vagina, ovaries). Higher scores from the questionnaire indicate higher degree of body dissatisfaction(35). The BIS is routinely used in clinical gender identity assessments with all adolescents contacting the gender identity service in Tampere University Hospital due to features of gender dysphoria. The BIS scores of patients with Gender Dysphoria have been suggested to decrease (=improve) with hormonal and surgical treatments that alter sexually dimorphic characteristics of the body in both adults and adolescents (35,36). To the best of our knowledge there is yet no information about the distribution of BIS scores in general adolescent population.

STATISTICAL ANALYSES

Mean (sd) and median scores of the BIS total and subscales were compared between males and females in general population, using t-test and Kruskall-Wallis test respectively. Item-by-item comparisons of all BIS items between males and females were carried out using cross-tabulation with chi-square test (Fisher's exact test where appropriate). Similarly, BIS total and subscale scores were compared between males in general population and birth-assigned males and females in the clinical sample, and females in general population and birth-assigned females and males in the clinical sample. Using Bonferroni correction for multiple comparisons, the cut-off for statistical significance is in item-by-item comparisons set at $p<0.002$. The correlations between age and the BIS scores were evaluated using Pearson´s correlation coefficient.

RESULTS

BODY IMAGE OF ADOLESCENTS IN GENERAL

The mean and median values of BIS total score and all BIS subscales were within the satisfied range (below 3) among both male and female adolescents in general population, but female adolescents were less satisfied with all aspects of their bodies than were males (*Table 1*).

In item-by-item analysis, over one fifth of female adolescents were dissatisfied with their breasts, thighs and weight, and over one sixth were dissatisfied with their waist, figure, buttocks and muscles (*Table 2*). Of male adolescents, over 10% were dissatisfied with their muscles, facial hair, weight and biceps. Dissatisfaction with shoulders, Adam's apple, height, biceps, voice and chest was equally common among both sexes in the population. Male adolescents were more commonly dissatisfied than females only regarding facial hair, otherwise dissatisfaction with shared body parts was more common among females (*Table 2*).

Mean and median values of BIS total score and the three BIS subscales did not differ statistically significantly between 2012 and 2017 either among females or among males in the population sample. Among males, item-by-item analysis did not reveal changes in dissatisfaction between 2012 and 2017. Among females, there was a statistically significant decrease between 2012 and 2017 in dissatisfaction with their hips (17.2% vs. 10.4%, $p=0.001$), and borderline significant decrease in dissatisfaction with thighs (34.1% vs.25.4%, $p=0.002$).

DIFFERENCES IN BODY IMAGE SCALE BETWEEN GENERAL POPULATION AND ADOLESCENTS SEEKING GENDER REASSIGNMENT

Clinical sample adolescents of both sexes scored higher than population adolescents of either sex on BIS total score and on all its subscales (*Table 1*).

THE ROLE OF AGE

Age was not statistically significantly correlated with BIS total score nor with any BIS subscale scores among either general population or clinical sample.

Table 1. BIS total and all three subscales mean and median scores and comparisons between groups

	mean(sd)				pop. females vs. pop. males	pop. females vs. clinical birth-assigned females	pop. females vs. clinical birth-assigned males	pop. males vs. clinical birth-assigned males	pop. males vs. clinical birth-assigned females
	female pop.	male pop.	clinical birth-assigned females	clinical birth-assigned males					
BIS total	2.3 (0.7)	1.9 (0.7)	3.4 (0.5)	3.5 (0.5)	<0.001	<0.001	<0.001	<0.001	<0.001
BIS gendered	2.2 (0.7)	1.9 (0.8)	4.1 (0.6)	4.4 (0.6)	<0.001	<0.001	<0.001	<0.001	<0.001
BIS secondary gendered	2.4 (0.8)	1.9 (0.8)	3.5 (0.6)	3.5 (0.9)	<0.001	<0.001	<0.001	<0.001	<0.001
BIS neutral	2.2 (0.7)	1.8 (0.7)	2.8 (0.6)	3.0 (0.6)	<0.001	<0.001	<0.001	<0.001	<0.001
	Median (IQR)								
BIS total	2.3 (0.9)	1.9 (1.0)	3.4 (0.6)	3.4 (0.8)	<0.001	<0.001	<0.001	<0.001	<0.001
BIS gendered	2.1 (0.9)	2.0 (1.1)	4.3 (0.6)	4.6 (1.0)	<0.001	<0.001	<0.001	<0.001	<0.001
BIS secondary gendered	2.4 (1.0)	1.9 (1.1)	3.5 (0.7)	3.5 (0.9)	<0.001	<0.001	<0.001	<0.001	<0.001
BIS neutral	2.2 (1.0)	1.8 (1.0)	2.9 (0.8)	3.0 (1.3)	<0.001	<0.001	<0.001	<0.001	<0.001

BIS total mean and median scores and gendered, secondary gendered and neutral subscale mean and median scores by among adolescents in general population and among clinical sample of adolescents seeking gender reassignment, with comparison between groups. Between clinical sample males and females, none of the comparisons yielded statistically significant differences. Mean (sd) values are compared with t-test, medians (IQR) with Kruskwall-Wallis test

Table 2. The percentage of dissatisfied and very dissatisfied item-by-item and comparison between male and female adolescents in general population

	males **n=651**	**females** **n=1108**	**p**
Nose	**5.3**	**15.8**	**<0.001**
Shoulders	5.8	9.7	0.003
Hips	**4.7**	**12.9**	**<0.001**
Chin	**3.9**	**10.7**	**<0.001**
Calves	**5.3**	**10.6**	**<0.001**
Breasts	**6.6**	**20.7**	**<0.001**
Hands	5.0	7.2	0.05
Adam's apple	2.9	2.0	0.2
Scrotum/Vagina	2.8	4.5	0.05
Height	8.8	11.9	0.03
Thighs	**6.3**	**28.6**	**<0.001**
Arms	**5.0**	**12.4**	**<0.001**
Eyebrows	**2.4**	**5.7**	**0.001**
Penis/Clitoris	**6.6**	**2.2**	**<0.001**
Waist	**4.6**	**18.4**	**<0.001**
Muscles	**11.5**	**19.3**	**<0.001**
Buttocks	**5.2**	**19.4**	**<0.001**
Facial hair	**11.9**	**4.1**	**<0.001**
Face	**5.1**	**11.3**	**<0.001**
Weight	**10.6**	**28.7**	**<0.001**
Biceps	11.2	11.7	0.4
Testes/Ovaries	2.4	4.2	0.04
Hair	**4.4**	**11.7**	**<0.001**
Voice	5.0	7.3	0.04

⟶

	males n=651	females n=1108	p
Feet	**4.1**	**11.6**	**<0.001**
Figure	**6.0**	**18.0**	**<0.001**
Body hair	**4.4**	**16.4**	**<0.001**
Chest	5.7	4.2	0.1
General appearance	**3.3**	**11.0**	**<0.001**
Body build	**5.0**	**13.9**	**<0.001**

Proportion of respondents dissatisfied or very dissatisfied with their body parts item-by-item in 16-19- year-old adolescent general population in Finland. (%) Differences between males and females are compared using chi-square statistics, and differences statistically significant after Bonferroni correction for multiple testing are presented in bold face

DISCUSSION

Our results in this pioneer study regarding the evaluation of the body image of adolescents in general population with the BIS are surprising. Population adolescents in Finland are rather satisfied than dissatisfied with their bodies, scoring below the dissatisfied range (<3) in all three subscales on BIS. Female adolescents were less satisfied with all aspects of their bodies than males, as expected, but nevertheless scored average in the satisfied range on BIS. BIS total and subscale scores did not differ statistically significantly between 2012 and 2017 in either sex despite the increase of annual number of referrals of minors to gender identity assessment in Finland. As expected, adolescents seeking gender reassignment scored higher in BIS total and subscales than adolescents of either sex in population, and into dissatisfied range.

HOW SATISFIED/DISSATISFIED ARE MIDDLE TO LATE GENERAL POPULATION ADOLESCENTS WITH THEIR VARIOUS BODY PARTS, TOTAL BODY IMAGE, AND GENDERED AND NEUTRAL BODY PARTS?

The aim of this study was to evaluate adolescents' body image by examining how satisfied/dissatisfied middle to late general population adolescents are with their various body parts, total body image, and gendered and neutral body parts. According to our findings, middle to late general population adolescents in Finland are relatively satisfied with their bodies and have a relatively good overall body image, being rather satisfied than dissatisfied with primary gendered, secondary gendered and neutral parts of their bodies. On the other hand, more than one in five female adolescents were dissatisfied with their breasts, thighs, waist, buttocks and figure, and over 10% of male adolescents were dissatisfied with their muscles, facial hair, weight and biceps. These findings confirm earlier research reporting that muscles, (body) hair growth and weight were the primary sources of body dissatisfaction among males (18), and body parts associated with feminine curves and adipose tissue among females (37).

HOW DOES BODY IMAGE DIFFER BETWEEN FEMALE AND MALE ADOLESCENTS IN GENERAL POPULATION?

Our study confirms the existing literature on gender differences in body image concerns (12,13). According to our results, female adolescents in general population were more dissatisfied with their bodies than were male adolescents, and this emerged in the BIS total score and all the subscales in relation to both gendered and neutral body dimensions. When there were item level differences in dissatisfaction with specified body parts, females were almost without exception more commonly dissatisfied than males. Their dissatisfaction also peaked in body parts related to feminine curves and thus feminine appearance. This may be due to social pressure to be slim seems to influence women more than men (38). Also, it has been proposed that women internalize socio-cultural ideals more than men (15) which further exposes female adolescents to body dissatisfaction. Unfortunately, our data do not reveal whether the experienced dissatisfaction was due to their body parts appearing too pronounced or big to them, or perhaps inadequate. One interesting question arises as to whether anxiety towards one's body is caused by female gender itself, and desire to get rid of the female gender because of its social status.

HAS THE BODY IMAGE OF ADOLESCENTS IN GENERAL POPULATION CHANGED BETWEEN 2012 TO 2017, WHEN THERE WAS CONSIDERABLE INCREASE IN ADOLESCENTS SEEKING GENDER REASSIGNMENT?

What is interesting is that adolescents´ body image had hardly changed from 2012 to 2017. Our results are contrary to what we expected. Over the period the data had been collected the importance of social media increased significantly, likewise the powerful influence of advertisements and social models on adolescents (39). Young people are thus exposed to greater pressure regarding personal appearance pressures. The proportion of adolescents in the general population expressing potentially clinically significant feelings of gender dysphoria also increased (29). According to our findings, female adolescents' dissatisfaction with their hips and thighs had, surprisingly, decreased over time. This may reflect a change towards curvier body ideals (40,41), which could lead to a more positive body image among female adolescents who earlier would have been more insecure about their feminine features. At the same time, studies have also shown that women's exposure to not only slim body ideals but also to athletic or curvy ideals may be harmful to their body image (42). Changes in male adolescents' body image would also have been expected, as men's exposure to images of idealized male bodies has been found to increase body dissatisfaction (17), however, no statistically significant change occurred. The increased search for gender identity services may also suggest that adolescents' problems with body image and dissatisfaction with their bodies has increased. However, neither male nor female adolescents' dissatisfaction with their respective body parts increased. With the increasing media influences and appearance pressures arising from them, adolescents at large may also have learned to cope more effectively with such pressures.

HOW DOES THE BODY IMAGE OF ADOLESCENTS SEEKING GENDER REASSIGNMENT DIFFER FROM THAT OF ADOLESCENTS IN GENERAL POPULATION?

As expected, both male and female adolescents seeking gender reassignment were more dissatisfied in all three BIS subscales than adolescents in general population. Not only were they dissatisfied with their gendered and secondary gendered body parts but also with their neutral body parts. The same effect has been reported in earlier studies evaluating body dissatisfaction in adolescents and (young) adults with gender dysphoria (22,43,44). Some studies among sexual and gender minorities have suggested that it is specifically feminine identity that predisposes to distorted body image, more than (female) sex (31,45), but in our data, adolescents in the clinical sample scored similarly regardless of sex and gender identity. Adolescents suffering from gender dysphoria were also more dissatisfied with their neutral body parts than general population adolescents of either sex. These results suggest that gender dysphoria is not limited to dissatisfaction with primary and secondary sex characteristics but also affects, or is affected by, adolescents' overall body image. Overall, males in general population were most satisfied with their bodies followed by population females, and least satisfied were adolescents presenting in gender identity service seeking gender reassignment.

The vast majority (>85%) of adolescents in the age group of the population sample attend upper secondary education in Finland. The data can thus be considered representative of the age group. However, Finnish adolescents attending upper secondary school (as opposed to vocational school) are often from families with higher social and economic status, which may limit the generalizability of the findings to unselected adolescent population samples. Unfortunately, puberty status was not measured, but from the mean (sd) age information it can be concluded that practically all subjects were post-pubertal. Also, age was not statistically significantly correlated with BIS total score nor with any BIS subscale. The clinical data used in this study is of relatively limited size, as so few adolescents sought gender reassignment during this period. Despite being small, the clinical data is thus very representative of those seeking gender reassignment during their adolescent years.

It has been demonstrated that some adolescents deliberately misrepresent themselves in survey studies, exaggerating their belonging to minorities as well as their problem behaviours, symptoms and psychosocial problems, and that this phenomenon influences surveys on topics that are very prominent in society, such as gender identity (29,30). With increasing exposure to appearance-related (social) media influences, body image and body dissatisfaction could also be a topic of increased facetious responding. This would likely result in a worse picture of adolescents' body image and body satisfaction over time. No such change occurred in the present data, which suggests that the role of inaccurate responding, always a possibility in self-report surveys, at least did not increase over time.

To the best of our knowledge, no other study has been presented using the Body Image Scale to evaluate adolescents´ body image in non-clinical populations. The Body Image Scale evaluates body image satisfaction or dissatisfaction in greater detail and more comprehensively, while earlier studies have focused exclusively on weight issues or on adolescents associated with mental and eating disorders. However, the BIS focuses solely on a cognitive-affective component of body image, namely satisfaction. A more comprehensive picture could be achieved by also exploring the perceptual and behavioural aspects of body image (1,46).

CONCLUSION

Female adolescents in general population expressed greater dissatisfaction with a variety of body parts compared to male adolescents, but their overall body image was nevertheless positive rather than negative. The body image of adolescents in general population did not change over the five-year interval. Adolescents seeking gender reassignment differed from adolescents in general population by displaying dissatisfaction with both gendered and neutral body parts. Future research should continue from cognitive to affective and behavioural aspects of body image in adolescence, and to exploring the role of changes in gender roles for body image.

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ASSISTED LIVING IN RELATION TO USE OF PSYCHIATRIC INPATIENT AND OUTPATIENT CARE - A 23-YEAR TIME-TREND ANALYSIS OF NATIONAL INDICATORS FROM FINLAND

ABSTRACT

Dehospitalization for people with severe mental illness (SMI) has continued for decades and led to the development of assisted living (AL) services. However, there is little knowledge on how the increasing use of AL services relates to the time trends of different psychiatric services. This study utilizes a 23-year time series data from Finland to evaluate the use of AL services in relation to the use of psychiatric inpatient and specialized psychiatric outpatient care. This population-based data from 1996 to 2018 was extracted from the Sotkanet Statistics and Indicator Bank, administered by the Finnish Institute for Health and Welfare (THL). The analyses of the time trends in different levels of psychiatric AL services, classified according to support given to AL habitants, was possible to perform from the year 2006 onwards. The Joinpoint Regression analysis was applied to estimate time trends of the indicators selected for our study. In the whole 23-year study period, an increased rate of habitants in psychiatric AL services was correlated with an increased number of specialized psychiatric outpatient visits ($r = 0.766$, $p<0.001$), and decreased rates of psychiatric inpatient care days ($r = - 0.970$, $p<0.001$). The increase in the use of psychiatric AL services appeared mainly in lighter AL services (less support provided) that accounted for increased rates of habitants in service housing and supported accommodation. Our results showed that dehospitalization has increased the need for AL services drastically, but the increase in the use of specialized psychiatric outpatient care was clearly slower than the growth of AL services or the decrease in psychiatric inpatient treatment. The rise of lighter AL services seemed to occur while heavily supported AL services remained stagnant, but the reasons behind it need further research.

KEY WORDS: ASSISTED LIVING, MENTAL ILLNESS, NATIONAL REGISTERS, DEHOSPITALIZATION, SOTKANET, STAX-SA, SMI

*EJ and GK are co-authors and contributed equally to the work.

INTRODUCTION

Asylums were the main treatment and residence facilities for patients suffering from severe mental illness (SMI) for decades (1). Paradigm shifts (from custodial care to rehabilitation) and the development of treatments, especially psychotropic medication, have internationally enabled continuous dehospitalization since the 1950s (2,3). In Finland, the number of annual hospital days started to decrease and the number of annual outpatient visits increased in the late 1970s. This trend became especially high in the 1990s, when assisted living services for the mentally ill also started to increase (4). Due to this development, over the past four decades, more than 60% of psychiatric hospital beds have vanished in Canada, Finland and Norway alone (3,5,6,20).

Due to the widely degenerative nature of the disorders, SMI patients discharged from psychiatric inpatient treatment need services from different sectors, like therapeutic interventions as well as psychotropic medication from healthcare, and also support and rehabilitative action from social services to cope better with their daily active living (5,7,8). For example, according to earlier studies, of the 70% of SMI patients with prolonged hospitalization who were discharged (9,10) only less than 20% of them were able to live independently without any kind of daily support during a 4-year follow-up period (10). Thus, alongside the renunciation of custodial care in psychiatric hospitals, the development of outpatient care and a need for a support system for those who are unable to cope independently was recognized.

Assisted living services (AL services) have internationally been a major solution for organizing support for these patients. These services have reduced the need for psychiatric inpatient treatment (11,12). However, the use and expense of AL services have continued to increase over time. This has happened despite the evidence that, simultaneously, the treatment and rehabilitation for SMI patients have been developed and achieved clinically significant improvement in mental status and social functioning (11,12). The continuously expanded use of AL services may indicate that SMI patients in AL services do not undergo effective enough psychiatric treatment and rehabilitation, and are thus not able to progress to a more independent life (8,13).

At an epidemiological level, one convenient approach to evaluate care given to the mentally ill is to examine the association between the use of AL services and different treatment services. In earlier literature, the relation between the use of AL services for the mentally ill and psychiatric inpatient treatment is widely demonstrated, while studies also considering psychiatric outpatient care in this context are scarce.

AIMS

The main focus of this study was to examine and compare time trends in the use of AL services for the mentally ill with the use of psychiatric inpatient treatment and psychiatric outpatient care. The population-based indicators were utilized for our research purposes. The specific aims were as follows:

1. We analysed the association of the use of AL services for the mentally ill with the use of psychiatric inpatient treatment and the use of outpatient care over the 23-year time period.
2. We also evaluated use of AL services, classified by the level and amount of support available in those services according to The Simple Taxonomy for Supported Accommodation (STAX-SA) to ascertain whether potential change differs between types of AL services over a separate 13-year time period.

METHODS

DATA SOURCES

The current study utilizes indicators obtained from the Sotkanet Statistics and Indicator bank (14), maintained by the National Institute for Health and Welfare (THL). The Sotkanet contains a variety of statistical information on population welfare and health from 1990 onwards. The focus of our study is on population-adjusted indicators for adults, describing the use of psychiatric assisted living services (AL services), specialized psychiatric outpatient visits (outpatient care) and psychiatric inpatient care days (psychiatric inpatient treatments) over the 23-year time period from 1996 to 2018.

HABITANTS IN AL SERVICES

The following indicators for adult clients in AL services were explored: 1) the number of clients living in psychiatric rehabilitation homes giving housing services (either part-time assistance or 24-hour assistance), and 2) the number of clients living in service housing and supported accommodation, or residents with mental problems, in services funded by municipality. These two indicators were combined to one indicator, which describe the number of habitants in AL services (of any type).

From year 2006 onwards, separate indicators for clients in psychiatric rehabilitation homes with 24-hour assistance and those with part-time assistance were included in the Sotkanet. This enabled deeper insight into AL services according to the level and amount of support available in AL services, which were categorized by The Simple Taxonomy for Supported Accomodation (STAX-SA) tool (15): this categorization enables comparison between other countries. The STAX-SA comprises five supported accommodation "types", which are defined by: staffing location, level of support, emphasis on move-on and physical setting. The Finnish psychiatric AL service categories and their compatibility with a STAX-SA-type category were modified into the following: 1) Psychiatric rehabilitation homes with 24-hour assistance (STAX-SA 1), 2) Psychiatric rehabilitation homes with part-time assistance (STAX-SA 2-3), and 3) Service housing and supported accommodation (STAX-SA 4).

PSYCHIATRIC INPATIENT TREATMENTS

The indicator for psychiatric inpatient care days covers the patients aged 18 or more who had received treatment in psychiatric inpatient wards in the public sector (municipalities, joint municipal boards and the state).

OUTPATIENT CARE

The indicator for psychiatric outpatient visits to specialized healthcare covers the patients aged 18 or above. It includes all outpatient visits to specialized healthcare within the specialty of psychiatry in municipal hospitals, including specialist-led health centre hospitals.

STASTICAL ANALYSIS

The main indicators (habitants in psychiatric AL services, specialized psychiatric outpatient visits, psychiatric inpatient care days) of the current study refer to corresponding rates per 10 000 adult population in Finland during 1996 to 2018. An additional analysis of the level of psychiatric AL services covers the period from year 2006 onwards, when the separate indicators for psychiatric rehabilitation homes with 24-hour assistance and those with part-time assistance services became available from the Sotkanet.

All statistical analyses were performed using the three-year moving average rates (except two-year moving average at the beginning and end of time period). The moving average is a commonly used technique with time series data to smooth out the short-term fluctuation and highlights long-term trends of phenomenon under investigation. First, the Spearman correlations were calculated to investigate the association between the main three indicators. Second, the Joinpoint Regression Program (version 4.8.0.1; Statistical Methodology and Applications Branch, Surveillance Research Program, National Cancer Institute, Bethesda, MD, USA) and the Annual Percent Change (APC) statistic were used for assessing time trends (linear, non-linear) in the data. The number of joinpoints (potential cut-off years) was selected to zero (linear trend) and to one (non-linear trend) to test if the addition of joinpoints improved the model significantly (16,17).

RESULTS

23-YEAR TIME TRENDS

Figure 1a and 1b illustrates the 23-year time trends in population-adjusted indicators analysed in the current study. Increased rates of habitants in AL services (from 6.5 in 1996 to 37.4 in 2018 per 10 000 population, annual mean ± sd 26.7±11.1) correlated with increased use of outpatient care (from 2873 in 1996 to 3766 in 2018, annual mean ± sd 2992.4±335.9) (r = 0.766, p<0.001) and decreased rates of psychiatric inpatient treatment (from 5160 in 1996 to 2157 in 2018, annual mean ± sd 3532.8±928.4) (r = - 0.970, p<0.001).

Figure 1a. Population-based time trend for adults per 10000 population in the use of AL services in Finland during 1996-2018

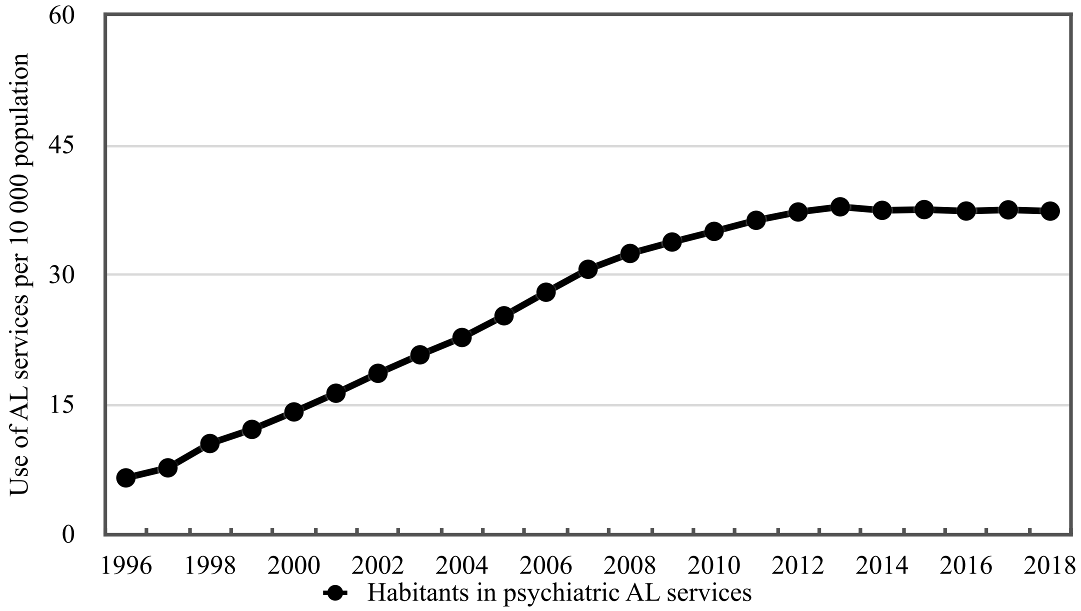

Figure 1b. Population-based time trends for adults per 10000 population in the use of outpatient care and psychiatric inpatient treatment in Finland during 1996-2018

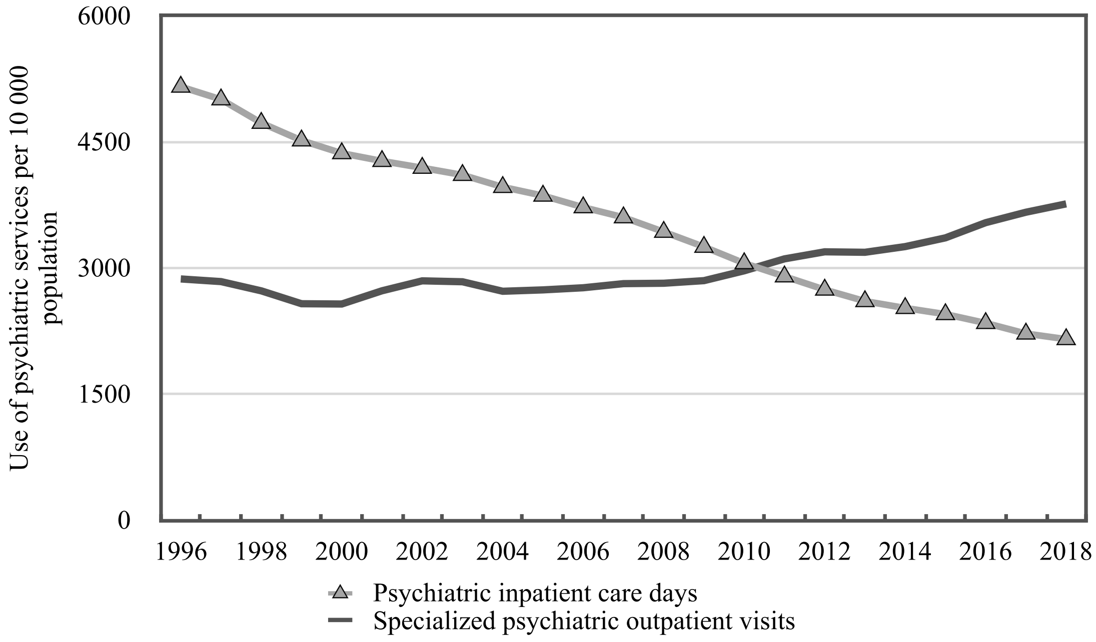

Table 1 reports the results of time-trend analyses. The rates of habitants in AL services per 10 000 population (*Figure 1a*) were significantly increased during the whole study period (APC = 7.7, p<0.001), being more notable in years 1996-2006 (APC = 15.7, p<0.001) compared to 2006-2018 (APC = 2.0, p=0.001). Correspondingly (*Figure 1b*), the rates of outpatient care increased during the whole study period (APC = 1.4, p<0.001), the increase being significant during 2008-2018 (APC = 3.0, p<0.001), but not during 1996-2009 (APC = 0.2, p=0.550). Further, reverse time trends were observed in the rates of psychiatric inpatient treatment, which significantly decreased during the whole study period (APC = -4.1, p<0.001), being slightly lower during 1996-2006 (APC = -3.1, p<0.001) than during 2006-2018 (APC = -4.6, p<0.001).

Table 1. The results of Joinpoint regression analyses assessing population-based time trends in the use of AL services, psychiatric outpatient care and psychiatric inpatient treatment in Finland (1996-2018)

Rates per 10 000 adult population	Model*	Time period	APC	95%CI for APC	p-value
Habitants in AL service	Model 1	1996-2018	7.7*	6.1 to 9.3	<0.001
	Model 2	1996-2006	15.7*	14.1 to 17.3	<0.001
		2006-2018	1.9*	0.9 to 3.0	0.001
Specialized psychiatric outpatient visits	Model 1	1996-2018	1.4*	1.0 to 1.8	<0.001
	Model 2	1996-2008	0.2	-0.4 to 0.7	0.550
		2008-2018	3.0*	2.3 to 3.7	<0.001
Psychiatric inpatient care days	Model 1	1996-2018	-4.1*	-4.1 to -3.7	<0.001
	Model 2	1996-2006	-3.1*	-3.4 to -2.7	<0.001
		2006-2018	-4.6*	-4.8 to -4.3	<0.001

Note: Annual Percent Change, APC. Confidence Interval, CI
* Model 1 analyses the whole 23-year period (linear regression, zero joinpoint), while Model 2 utilizes data stratified by one cut-off year (non-linear regression, one joinpoint) estimated by the Joinpoint regression method. P-value ≤0.05 indicates that the APC is significantly different from zero

TIME TRENDS IN DIFFERENT CATEGORIES OF AL SERVICES

Figure 2 illustrates the 13-year population-adjusted time trends by different categories of AL services. The most notable increase was observed in rates of AL habitants in service housing and supported accommodation (STAX-SA 4) (from 11.6 in 2006 to 16.3 in 2018, annual mean ± sd 14.6±1.6). The rates of AL habitants in psychiatric rehabilitation homes with 24-hour assistance (STAX-SA 1) had also increased (from 5.0 in 2006 to 7.5 in 2018, 7.2±1.0). A decreased time trend was found in the rates of AL habitants living in psychiatric rehabilitation homes with part-time assistance (STAX-SA 2 and 3) (from 7.0 in 2006 to 6.0 in 2018, 6.5±0.4).

Figure 2. Population-based time trends for adults per 10000 population in the use of AL services according to different categories: psychiatric rehabilitation homes with 24-hour assistance (STAX-SA 1, psychiatric rehabilitation homes with part-time assistance (STAX-SA 2 and 3) and service housing and supported accommodation (STAX-SA 4) in Finland during 2006-2018

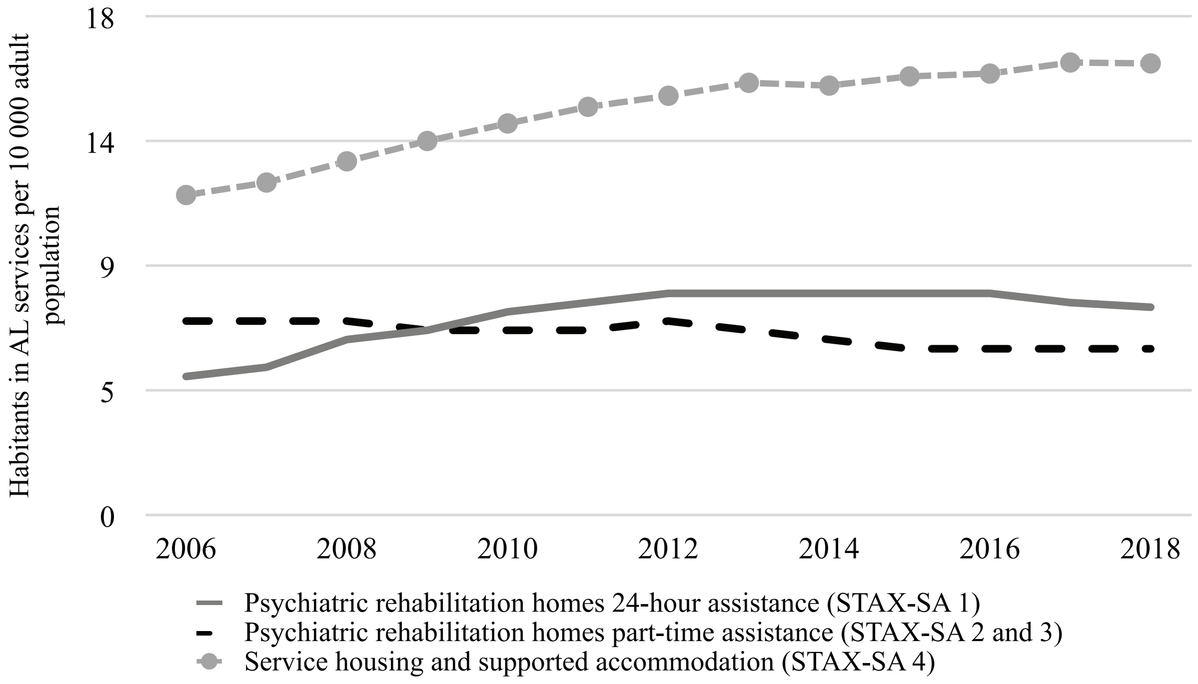

Table 2 presents the results of population-adjusted time-trend analyses by different categories of psychiatric AL services. The rates of habitants in psychiatric rehabilitation homes with 24-hour assistance (STAX-SA 1) were significantly increased during the whole 13-year study period (APC = 3.3, p=0.001), being significant in years 2006-2011 (APC = 9.9, p<0.001), but not in years 2011-2018 (APC = -0.6, p=0.234). At the same time, the rates of habitants in psychiatric rehabilitation homes with part-time assistance (STAX-SA 2 and 3) had decreased during the whole study period (APC = -1.5, p<0.001), the decrease being more notable in 2012-2018 (APC = -2.3, p=0.002) compared to the years 2006-2012 (APC = -0.7, p=0.219). Moreover, the rates of AL habitants in service housing and supported accommodation (STAX-SA 4) had significantly increased during the whole study period (APC = 2.9, p<0.001), being more notable during 2006-2011 (APC = 5.5, p<0.001) than during 2011-2018 (APC = 1.4, p=0.001).

Table 2. The results of Joinpoint regression analyses for population-based time trends in the categories of psychiatric AL services in Finland (2006-2018)

Habitants per 10 000 adult population	Model*	Time period	APC	95%CI for APC	p-value
Psychiatric rehabilitation homes, 24-hour assistance (STAX-SA 1)	Model 1	2006-2018	3.3*	1.6 to 5.1	0.001
	Model 2	2006-2011	9.9*	8.0 to 11.8	<0.001
		2011-2018	-0.6	-1.6 to 0.5	0.234
Psychiatric rehabilitation homes, part-time assistance (STAX-SA 2 and 3)	Model 1	2006-2018	-1.5*	-2.0 to -1.0	<0.001
	Model 2	2006-2012	-0.7	-1.9 to 0.5	0.219
		2012-2018	-2.3*	-3.5 to -1.1	0.002
Service housing and supported accommodation (STAX-SA 4)	Model 1	2006-2018	2.9*	2.3 to 3.6	<0.001
	Model 2	2006-2011	5.5*	4.8 to 6.2	<0.001
		2011-2018	1.4*	1.0 to 1.8	<0.001

Note: Annual Percent Change, APC. Confidence Interval, CI
* Model 1 analyses the whole time period 2006-2018 (linear regression, zero joinpoint), while Model 2 utilizes data stratified by one cut-off year (non-linear regression, one joinpoint) estimated by the Joinpoint regression method. P-value ≤0.05 indicates that the APC is significantly different from zero

DISCUSSION

Development and continuous growth of AL services as well as increased need for treatment and rehabilitation of SMI in outpatient care has occurred due to the global trend of dehospitalization. Despite this fundamental change, it has remained unclear how the use of these services has changed in relation to one another over the course of time. In this study we were able to examine and compare, in a 23-year time trend, the use of AL services of the mentally ill in relation to the use of psychiatric inpatient and outpatient care by utilizing population-adjusted indicators, based on nationwide health and social care registers. Furthermore, within AL services we were able to estimate the 13-year time trends of level of support according to STAX-SA taxonomy.

Firstly, the use of AL services for the mentally ill has grown at the same ratio as psychiatric inpatient treatment has decreased. This finding is in line with previous studies regarding dehospitalization (3,10,18,19). Despite the fact that comparing AL services and psychiatric inpatient treatment is difficult, due to the length of stay of persons in AL being much longer than those of hospitalized persons, the same ratio is still plausible, because previous studies have shown a significant transition from psychiatric inpatient treatment to AL services (18–21). This study also verifies previous findings (3,18,19,24,25) on the effects of dehospitalization on AL services by reporting the decrease of psychiatric inpatient days to almost half (from 5160 in 1996 to 2157 in 2018), and the growth of habitants in AL services almost sevenfold (from 6.5 in 1996 to 37.4 in 2018). Therefore, the transition from psychiatric inpatient treatment to AL services, closer to society, has occurred over the course of time in Finland. The growth of AL services and need for close support is understandable due to the severe and long-term nature of these illnesses, including high, over 60%, relapse rates of these patients (10,22,23). However, in our study, a notable finding was also that psychiatric inpatient days have decreased linearly throughout the whole study period, and at the same time the use of AL services has continued to grow. Thus, there seems to be a potential risk for re-institutionalization in mental healthcare (1,26), as the rates of habitants in AL services might be exceeding the number of patients treated in psychiatric hospitals (24,27).

Secondly, the growth of specialized psychiatric outpatient care in Finland was stagnant during the first decade of the study period, being significant only from 2008-2018. This happened even though psychiatric specialist level outpatient care was developed to support the dehospitalization process, as well as bringing mental healthcare to the community setting (28). One plausible reason for this disproportionally weaker development of outpatient care may be that financial and professional resources needed for carrying it out were supposed to be transferred from the costly and heavily staffed psychiatric inpatient treatment facilities (29), but it never occurred at the expected and desired level (30).

The slow growth of psychiatric outpatient care may also suggest that in practice, the objective of the treatment has been ambiguously set. Thus, the main purposes of outpatient care for SMI seem to be follow-up (13) and to secure continuity of prescribed psychotropic medication, rather than to comprehensively treat and rehabilitate SMI patients, which Brugha et al. 2004 has stated (22). In some other countries the development of outpatient care has also not been successful. For example, there are several studies showing the growing need for outpatient care but even fewer have access to a psychiatrist, which may indicate SMI patients receiving follow-up visits only on rare occasions (13,22,24,31). Also, the study of Topor et al. 2015 reported that in Sweden outpatient care use declined from 88% to 80% between 2005-2008 (24).

In our study, the increased amount of lighter AL services (STAX-SA 4) was demonstrated while the most supported AL services (STAX-SA 1) remained the same. This might be the result of inadequacies of treatment and rehabilitative options in outpatient care for SMI patients. Without adequate resources, it is not possible to examine and treat these patients in a comprehensive manner. Thus, an obvious practice might have been developed, in which psychiatric patients who are not in immediate need of hospital care are referred to AL services for ensuring daily support, but without guarantee of psychiatric treatment continuity and rehabilitation (13). This may partly explain the significant growth of referrals to AL services through outpatient care noted in earlier studies (32,33).

Thirdly, the use of psychiatric AL services in general has stabilized since 2006 and reached a stagnant phase. Particularly in heavily supported AL units (STAX-SA 1-3) these stabilized rates might indicate that the epidemiological needs for AL services have been fulfilled regarding the most seriously ill psychiatric patients. This might also indicate that these psychiatric patients do not proceed to lighter AL services as could be expected according to outcome studies (11,12,34,35).

Our study verified the continuing decline of psychiatric inpatient treatment in Finland (12,24). In our opinion, this has led to psychiatric inpatient treatment no longer providing long-term comprehensive rehabilitation. Instead, nowadays more and more SMI patients are living in AL services instead of psychiatric inpatient treatment (12). Also, we consider that between AL services the quality of rehabilitation and treatment differs, and the staff work is too often based on common practice rather than evidence-based practice (36). One part of the problem might be the significant changes in the psychiatric service system in Finland in the early 1990s where mental health was transferred under different governance. This led to significant regional differences in services, and it has caused inconsistency and heterogeneity for data needed for evaluation of how much resources were actually reduced (21). According to Parker at al. (2019), referrals to AL services are increasing from outpatient care rather than psychiatric inpatient treatment (12). This development is concerning, because there are studies reporting that a good level of everyday functioning at discharge from psychiatric inpatient treatment correlates with a good level of function in AL services (12,24,27). Thus, the role of psychiatric inpatient treatment in the path to recovery of SMI patients is still important, but, as our study showed, seems to be decreasing. Unfortunately, it seems that custodial care, which previously occurred in psychiatric hospitals, may have shifted to AL services, especially to heavily supported AL services (STAX-SA 1-3). Therefore, in practice, there are still SMI patients in heavily supported AL services (STAX-SA 1-3), with a long history of psychiatric inpatient treatment, receiving inadequate support that does not meet their needs (1,37).

LIMITATIONS AND STRENGTHS

This study has several limitations. The time-trend data classified by psychiatric diagnosis of persons was not included in the Sotkanet, but, if available, it would have deepened our understanding of the phenomena examined in our study. Municipalities of Finland use different information systems to report their data to national registers, there are also differences in services provided by different municipalities, which have likely caused heterogeneity in municipality level data. Since we examined the nationwide time trends, we believe, however, that major trends have been captured in a sufficient manner. Data for rates of habitants in different levels of AL were available only from 2006 onwards, which restricted time-trend analyses to cover 13 years instead of the whole 23-year period. There was also no indicator for describing the length of stay in AL services for the mentally ill. Regarding psychiatric outpatient care, the indicator used in this study was psychiatric outpatient visits to specialized healthcare, recorded over the whole 23-year study period. The primary healthcare register for psychiatric visits was established in 2010 and the data collection from municipalities is under harmonization process. Consequently, the data gathered from the register is not consistent with quality, which restricted the use of that data in our study. The major methodological strengths of our study were, however, opportunity to analyse main indicators in a longitudinal manner from 1996-2018. The population-adjusted indicators alone showed strengths in size, making our results comparable for international research. It is justified to acknowledge that the Sotkanet indicator bank shows good possibilities for future research.

CONCLUSION

Psychiatric treatment and rehabilitation have shifted from inpatient facilities towards outpatient settings and to AL services increasingly. It seems obvious that custodial care has shifted to AL services and heavily supported AL services are filled with long-term psychiatric patients. Also, the growth of lighter AL services can be explained by the utilization of AL services as part of the treatment of mentally ill patients. This statement is justified by the ongoing trend that the use of AL services is growing, although psychiatric inpatient treatment is descending. Therefore, there is a concern that proper rehabilitation, treatment and care are not occurring at the desired level in the Finnish AL service system.

From a methodological point of view, the effects of AL for the mentally ill are reported in various manners, and the use of national registers is useful. However, due to the cross-sectional data, the interpretation of statistics is difficult. This warrants further scientific-based research to identify the key indicators needed for comprehensive evaluation of AL services. The future research should also focus on health records and mortality of patients in AL services and their outpatient care, for a better understanding of the effectiveness of psychiatric rehabilitation for SMI patients.

SMI patients need intensive care and rehabilitation, but they have potential to recover. The importance of psychiatric outpatient care in rehabilitation, treatment and coordination of care and services for SMI patients has increased globally. Modern drug treatment, combined with new rehabilitative treatment methods, such as recovery-oriented practice, has made it possible to reduce treatment days in psychiatric hospitals. It is important to add resources to AL and outpatient services to further develop adequate treatments and rehabilitation outside psychiatric hospitals. This would enable AL and outpatient services to answer to the growing need of the service users.

Supplementary Material

Supplementary data are available at Psychiatria Fennica online.

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Contributions

Data extraction EJ and GK. Data visualization GK. Statistical analyses HH. Methodology HH, EJ and GK. All the authors participated in the writing and editing process of the manuscript.

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Funding

This study was funded by the state research fund project number K61718. The funders had no role in the study design, data collection, data analysis, interpreting the results or the decision to publish the article.

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THE IMPACT OF PSYCHIATRIC REHABILITATION - A STUDY OF OUTCOMES OF PERSONS WITH SEVERE MENTAL DISORDERS

ABSTRACT

Objective: To explore the changes between before and after residential psychiatric rehabilitation in functioning and psychiatric symptoms in young adults with severe mental disorders. Method: Participants (n = 39) were aged 18-29 and had been in residential psychiatric rehabilitation for the period 2011-2017. We gathered data retrospectively from clinical registers, day-to-day records, rehabilitation plans and interRAI community mental health evaluations. Changes in several outcomes of functioning and psychiatric symptoms were analysed in young adults with severe mental disorders at the end of rehabilitation. Results: Median length of rehabilitation was 29 months. Symptoms of depression (p=0.001), mania (p=0.009), negative symptoms (p=0.017), anhedonia (p=0.012), the risk of harming others (p=0.010) and severity of self-harm (p= 0.015) had decreased from before to end of rehabilitation. In addition, performance in activities of daily living (p=0.016) had improved and the number of persons living independently had increased (p=0.001). Conclusion: Psychiatric rehabilitation may be effective in decreasing psychiatric symptoms, improving functioning and increasing independent living among young adults with severe mental disorders. These results support the need for comprehensive psychiatric rehabilitation with evidence-based interventions. This important research area requires further investigation with larger sample sizes, prospective study settings and longer follow-up times.

KEY WORDS: PSYCHIATRIC REHABILITATION, RESIDENTIAL SERVICES, YOUNG ADULTS, SEVERE MENTAL DISORDER

INTRODUCTION

Studies on psychiatric rehabilitation are of key importance, since outcomes of severe mental disorders are not very favourable. For example, the proportion of persons meeting the criteria for recovery from one of the most severe psychiatric disorders, schizophrenia, had flatlined for decades until 2010 [1,2], and since 2010 the proportion of persons experiencing recovery may have even decreased [2]. There are no standardized criteria for recovery from severe mental illness, and definitions of recovery vary [3]. As an example, clinical recovery from schizophrenia is often defined as remission of symptoms of the illness, and social recovery as good social and/or functional outcomes, such as employment [2]. In recent years the recovery paradigm has moved the focus more on personal recovery, which is not defined by the absence of clinical symptoms but more on the personal experience of one`s recovery. This personal experience can be defined by connectedness with others, hopefulness about the future, sense of identity and meaning of life and feeling empowered [4].

Residential services are widely used for persons with severe mental disorders in Finland [5,6] and in other European countries such as UK [7]. In Finland municipalities are required to provide social welfare such as residential services for persons with psychiatric disorders who need support in accommodation, as well as nursing and care [8]. In 2020, of these services, 91% were provided by the private sector (including the third sector) [9]. In 2017 the number of persons with psychiatric disorders in residential services was 7806 persons, of which 55% were in assisted living (staff available on site 24h) [10].

In a systematic review of French residential facilities also offering schooling services for young adults with severe mental disorders the average duration of stay in the facility varied from 7.7 to 18.7 months. At the end of intervention, the proportion of persons experiencing clinical improvement varied from 54% to 74%, although their accommodation was not reported [11]. A systematic review of Australian community-based residential mental health rehabilitation for adults found only four quantitative studies, all with limited quality. The need for 24/7 assistance decreased in the follow-up time, and one residential service type was able to decrease long-term hospitalization [12]. In an English cohort study of persons with psychotic disorders, the average length of inpatient mental health rehabilitation was 18 months, and after 12 months 70% of participants were either discharged or ready for discharge [13].

In recent years, the knowledge base of mental health and psychiatric rehabilitation has been increasing [14–16]. The aim of psychiatric rehabilitation is to promote recovery by controlling psychiatric symptoms and enhancing community integration by removing barriers to social participation caused by the illness. In psychiatric rehabilitation the individual is helped to recover their abilities to live a meaningful life [4,17,18]. In many regions implementation of interventions for psychiatric rehabilitation have not been successful, even though evidence and regulation might support it [19,20], and this is also the case in Finnish psychiatric care [3,20].

Psychiatric rehabilitation's core features are its process and structured evidence-based interventions [21,22]: psychoeducation [23], cognitive remediation therapy (CRT) [24–26], individual placement and support (IPS) [27,28], cognitive behavioural therapy (CBT) [29] and social skills training (SST) [23]. All of these increase meaningful activities and can enhance functional capacity and recovery. Peer support has been included in many interventions as it may have a positive effective on personal recovery from mental illnesses, but according to a recent meta-analysis it does not seem to have an effect on psychiatric symptoms [30]. To our knowledge, these interventions have not been studied in combination with residential services.

There is a need for studies on the effectiveness of residential service models and practices [7]. Severe mental illnesses are a major burden individually, socially and financially. Residential services are especially costly, but scientific, statistical and clinical knowledge shows that they are still needed in the 2020s [5,7,31,32]. Combining residential services and psychiatric rehabilitation might be one solution to make these services more effective economically and, especially for individual people suffering from severe mental illness, by improving the prognosis of recovery. Thus, this an important area that needs further investigation.

AIMS OF THE STUDY

The aim of this study was to explore the changes in several outcomes of functioning and psychiatric symptoms in young adults with severe mental disorders at the end of residential psychiatric rehabilitation. To our knowledge, there are no studies of residential psychiatric rehabilitation combining evidence-based interventions for young adults with severe mental disorders.

MATERIAL AND METHODS

STUDY DESIGN, SETTING AND POPULATION

The data were gathered from a residential psychiatric rehabilitation facility for young adults aged 18-29 in Northern Ostrobothnia, Finland. The young adults came to psychiatric rehabilitation mainly from hospital or from their home, where they were no longer able to cope due to social isolation and lack of functional capacity (e.g., not able to take care of one`s home, not able to participate in studies or working life). The target population consisted of rehabilitees between the ages of 18-29 years that had been in rehabilitation between 1/2011–12/2017 (n = 114). Rehabilitees who had only been in the day programme of the rehabilitation services and one rehabilitee who was under 18 years of age were excluded. Of the study population, 39 (35%) persons gave their informed consent (*Figure 1*). The data were collected from the register of the residential psychiatric rehabilitation unit during 4/2018-12/2019. The study has been approved by the Northern Ostrobothnia Hospital District Ethical Committee 1/2018 (49/2017) and carried out in accordance with the Declaration of Helsinki.

CONTENT OF PSYCHIATRIC REHABILITATION

The main goal of the studied psychiatric rehabilitation programme was for the participant to be able to attain independent and meaningful living. Furthermore, participants had individual aims for the psychiatric rehabilitation [33]. The psychiatric rehabilitation combined active engagement of the individual in evaluating and planning the rehabilitation with a multi-disciplinary team. The team consisted of nurses and practical nurses, Bachelor of Social Services, community educator, occupational therapists and psychiatrist or adolescent psychiatrist. Rehabilitation consisted of individually planned week and day programmes including individually tailored components and amounts of intervention (*Table 1*). For example, a participant might participate in rehabilitative work for two hours a day and leisure activities three times a week.

Figure 1. Flow chart of the study participants

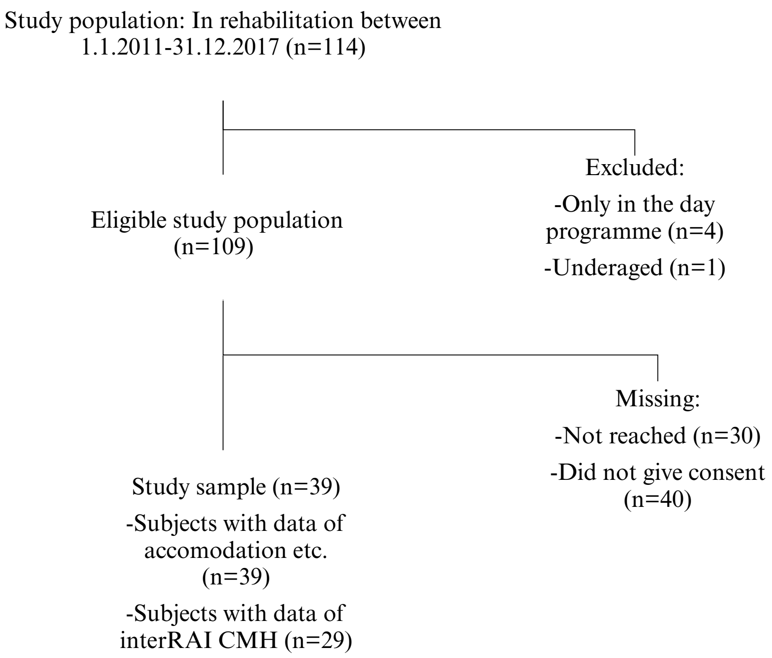

Table 1. Components of studied residential psychiatric rehabilitation

Components of the studied residential psychiatric rehabilitation	Description	Additional information
Accommodation	Accommodation departments 1-2: Staff on site 24h, staff patient ratio 0.59, high/moderate support, congregate setting, strong emphasis on move-on Accommodation departments 3-4: No staff on site, staff patient ratio 0.19, low/moderate support, department 3 congregate setting and department 4 individual accommodation, strong emphasis on move-on	Support for accommodation gradually decreased over the course of rehabilitation
Individual coaching	Support for mental health disorders and life skills minimum 1h per week with a nurse or a Bachelor of Social Services	E.g. psychoeducation, managing finances, education plans
Psychiatrists' services	One to two times per month	Consultation, prescriptions, individually planned meetings
Guidance for medication	Daily guidance by the staff for taking medication	Guidance for taking care of medication gradually decreased over the course of rehabilitation
Rehabilitation groups	Two times per week for one to one and a half hours by an occupational therapist accompanied once a week by a nurse or Bachelor of Social Services	E.g. Social and Interaction Training Groups, psychoeducation groups
Social rehabilitation	Daily active participation in community activities and activities in the residential facility	E.g. meeting for all residents every morning on the daily schedule and common matters
Cognitive remediation therapy	Individually implemented by a trained Cognitive Remediation Therapist	Three times per week altogether 40-44 hours
Functional rehabilitation in activities of daily living	Daily by the staff	Guidance for shopping, cleaning, etc.
Rehabilitative work/studies	Four times per week for three hours by a vocational counsellor	E.g. arts and crafts, studies online
Leisure activities	Guided by the staff five times per week and at least two times per week outside of the residence	E.g. gym, bowling
Sleep guidance	Staff available 24h	For accommodation departments 3-4 by phone

BACKGROUND AND OUTCOME VARIABLES

The data consisted of clinical register information of: i) day-to-day records, ii) rehabilitation plans, and iii) interRAI community mental health (CMH) evaluations. From the day-to-day records and rehabilitation plans we gathered and analysed information on age, gender, status of accommodation (before and at end of rehabilitation), psychiatric diagnoses, medication and length of rehabilitation for background information.

For statistical analysis the psychiatric diagnoses were categorized according to the International statistical classification of diseases and related health problems version 10 [34] on their severity as: i) any type of psychotic disorder (e.g., schizophrenia, psychotic depression, bipolar disorder with psychotic features), ii) affective disorder (e.g., non-psychotic bipolar or depressive disorder), iii) personality disorder (e.g., borderline personality disorder), and iv) anxiety disorder (e.g., social phobia). If the study subject had several diagnoses the most severe was considered as the main diagnosis and the other diagnoses were considered secondary. Medication records were categorized primarily using the Anatomical Therapeutic Chemical Classification System as: i) antipsychotics (N05A), ii) antidepressants (N06A), iii) psychostimulants (N06B), iv) psycholeptics and psychoanaleptics in combination (N06C), v) drugs used in addictive disorders (N07B), vi) benzodiazepines and related drugs, vii) antiepileptics (N03A), and viii) any other medication for psychiatric symptoms.

INTERRAI COMMUNITY MENTAL HEALTH (CMH)

interRAI CMH is one of the holistic evaluation instruments developed by the interRAI collaboration that measures health, psychiatric symptoms and functional capacity [35]. It was used in the present study at the beginning and end of psychiatric rehabilitation. The aim of the interRAI instrument family is to support the assessment and planning of care with the elderly, disabled and psychiatric service users [35] and, most recently, with children and youth [36]. In the development of the interRAI instruments for mental health the underlining principles have been rehabilitation, recovery and empowerment [37]. Evidence indicates that the interRAI instruments consider different issues relevant and suitable for service users in different care settings and in different cultures and languages [35,38,39]. The instruments base their trained-rater evaluation on multiple sources of information: observational data, clinical records, and communication with the service user, care givers and healthcare staff. Some items are restricted to self-report by the service user (e.g., self-reported depression). Items are evaluated on the absence or presence of a condition and its frequency or severity in the timeframe [35,39]. Evaluation is based on a limited timeframe of three days, but for service use the look-back period is seven days and 30 or 90 days, or even lifetime estimates are possible for certain items [38]. A higher score on a scale means inferior functioning or more severe symptoms [40]. Further information on the original scales is presented in supporting information (online supplement 1).

From the interRAI CMH instrument we gathered and analysed the following 14 (of 23) scales: Cognitive Performance (CPS_6), Depression Rating (DRS_14), Pain (PAIN_4), Activities of Daily Living Hierarchy (ADLH_6), Addictions and Substance Use (CAGE_4), Negative Symptoms (NSS_12), Positive Symptoms (PSS_24), Anhedonia (ANHEDONIA_12), Mania (MANIA_20), Severity of Self-Harm (SoS_6), Risk of Harm to Others (RHO_6), Communication (COMM_8) and Instrumental Activities of Daily Living (IADL_42 and IADL_21). Of the latter, IADL_42 measures a person's functional capacity in instrumental activities of daily living and IADL_21 their performance of these activities. The number after the scale refers to the sum of the scale. Scales that were not included were either shorter scales of the same subject, scales of the same subject from a different point of view, or scales that were primarily developed for a different population, e.g., the elderly. Regarding the psychometric properties of the instrument, inter-rater reliability has been shown to be excellent, internal consistency good to excellent, and validity from moderate to good [38]. For example, in a previous study the interRAI CMH Depression Severity Index (DSI) and Cognitive Performance Scale have been found to be feasible assessments of service delivery outcomes and effectiveness [41].

MISSING DATA

At the end of rehabilitation interRAI CMH evaluations were not available for 10/39 subjects. Also, there was missing data for one participant in five scales: Activities of Daily Living Hierarchy (both scales), Communication, Severity of Self-Harm, Mania and Pain.

We compared participants (n = 29) with at least two interRAI CMH instrument evaluations to participants with at most one evaluation (n = 10) with Pearson's chi-square test on gender and diagnoses of mood disorders and psychosis and, with an independent samples t-test, on age. We found no differences between groups in any of the tested variables: sex (p>0.999), affective disorder (p=0.711), psychosis (p=0.462) and age (p=0.971).

STATISTICAL METHODS

Frequencies with proportions were calculated for gender, diagnoses, accommodation and use of medication. Mean and range were calculated for age at the start of the rehabilitation and median with interquartile range (IQR) was calculated for the length of rehabilitation. Change in interRAI CMH scales from baseline to end of rehabilitation was calculated by comparing means. For all variables normal distribution was tested with SPSS. Variables with a normal distribution were tested with a parametric paired samples t-test and other variables with a non-parametric Wilcoxon signed rank test. Paired samples t-test was performed on Depression Rating Scale, Activities of Daily Living Hierarchy, Pain, Addictions and Substance Use, Positive Symptoms, Mania, Risk of Harming Others and Communication scales, and independent living between the start and end of rehabilitation. For these variables means and 95% confidence intervals were presented. A Wilcoxon signed rank test was performed on Cognitive Performance, Negative Symptoms, Anhedonia, Severity of Self-Harm and Instrumental Activities of Daily Living scales to compare values at the start and end of rehabilitation. For these variables, medians and IQR were presented. All statistical analyses were performed with SPSS 26.0 software [42]. Cohen's d values were used to measure effect sizes (ES) of t-test outcomes. Cohen describes d values as 0.2 small, 0.5 medium and 0.8 large [43]. Effect sizes for Wilcoxon signed rank tests were calculated using the formula: r equals Z divided by squareroot of N [44] in Microsoft Excel [45]. A two-tailed p-value of <0.05 indicated a statistically significant change. When analysing the differences in means of the scales we did not adjust for length of rehabilitation.

RESULTS

CHARACTERISTICS OF THE SAMPLE

At the start of the rehabilitation the mean age of the participants (n = 39) was 22.28 years (range 18-33). The median length of rehabilitation was 29 months (IQR = 15;42). Over half of the participants (64.1%) were women. Most had several diagnoses (64.1%), and as a primary diagnosis affective disorder (48.7%) and psychotic disorder (30.8%) were the most common. Other diagnoses in the sample were anxiety or personality disorder, substance abuse and eating disorder (*Table 2*). Antipsychotics were the most used medication, by 71.8% of the participants (*Table 2*) and over half of the participants (64.1%) were using antidepressants. Benzodiazepines and related drugs (41.0%) and antiepileptics (33.3%) were also commonly used. Most participants had co-medications: concomitant use of two medications 28.2%, three medications 25.6% and four medications 17.9%.

CHANGE OF SYMPTOMS AND FUNCTIONING

The interRAI CMH scales showed statistically significant decreases with medium effect sizes in the Depression Rating Scale (p=0.001, ES -0.67), Mania Scale (p=.009, ES -0.53) and Risk of Harm to Others (p=0.10, ES -0.51) from baseline to the end of rehabilitation. There were statistically significant decreases with small effect sizes in the Negative Symptoms Scale (p=0.017, ES -0.44), Anhedonia Scale (p=0.012, ES -0.47) and Severity of Self-harm Scale (p=0.015, ES -0.45) from before to the end of rehabilitation. The Instrumental Activities of Daily Living scale (performance) (mean difference (p=0.016, ES -0.45) decreased, indicating an improvement in functioning, although with a small effect size. There were no statistically significant changes in the means of the other interRAI CMH scales (*Table 3*).

In addition, the number of persons living independently increased statistically significantly (mean difference (p=0.001, ES 0.61) from start to end of rehabilitation. At the start of the rehabilitation of participants 33% lived independently and 23% lived with their parents. At the end of rehabilitation 69% lived independently and 3% with their parents. From residential care to rehabilitation came 8% and to residential care after rehabilitation transferred 18%. For more details on accommodation see *Table 4*.

Table 2. Participant's diagnosis and medication according primarily to ATC classification system† (n = 39)

Diagnosis	**n (%)**
Psychotic disorder	12 (30.8%)
Affective disorder	24 (61.5%)
Anxiety disorder	16 (41.0%)
Personality disorder	9 (23.1%)
Substance abuse	3 (7.7%)
Eating disorder	2 (5.1%)
Primary diagnosis	
Psychotic disorder	12 (30.8%)
Affective disorder	19 (48.7%)
Personality disorder	2 (5.1%)
Anxiety disorder	6 (15.4%)
Medication ATC category †	**%**
Antipsychotics (N05A)	28 (71.8%)
Antidepressants (N06A)	25 (64.1%)
Psychostimulants (N06B)	2 (5.1%)
Psycholeptics and psychoanaleptics (N06C)	1 (2.6%)
Drugs used in addictive disorders (N07B)	3 (7.7%)
Benzodiazepines and related drugs ‡	16 (41.0%)
Antiepileptics (N03A)	13 (33.3%)
Other medication for psychiatric symptoms §	20 (51.3%)
Use of antipsychotics (NO5A) by primary diagnosis	
Psychosis	11 (91.7%)
Affective disorder	12 (63.2%)
Personality disorder	2 (100.0%)
Anxiety disorder	3 (50.0%)

† The Anatomical Therapeutic Chemical Classification System

‡ Included medication temazepam, clonazepam, lorazepam, oxazepam, chlordiazepoxide, diazepam, zopiclone

§ Included medication melatonin, metoclopramide hydrochloride, metoprolol succinate, propranolol hydrochloride, hydroxyzine hydrochloride and bisoprolol fumarate.

Table 3. Change of interRAI CMH scales and accommodation from beginning to the end of rehabilitation

	Mean, baseline	**Mean, end**	**Mean Difference (95% Confidence Interval)**	**Effect size (Cohen's d)**	***t***	***p*-value (t test)**
Depression Rating Scale	3.28	1.41	-1.86 (-2.91; -0.81)	-0.67	-3.63	0.001*
Pain	0.61	0.25	-0.36 (-0.80; 0.08)	-0.32	-1.67	0.106
Activities of Daily Living Hierarchy	0.21	0.07	-0.14 (-0.32; 0.03)	-0.32	-1.69	0.103
Addiction and Substance Use	0.55	0.45	-0.10 (-0.62; 0.41)	-0.08	-0.41	0.682
Positive Symptoms Scale	3.09	1.79	-1.28 (-2.71; 0.16)	-0.39	-1.82	0.079
Mania Scale	3.54	2.18	-1.36 (-2.35; -0.36)	-0.53	-2.79	0.009*
Risk of Harm to Others	1.86	1.24	-0.62 (-1.08; -0.16)	-0.51	-2.77	0.010*
Communication Scale	0.86	0.57	-0.29 (-0.66; 0.09)	-0.29	-1.55	0.133
Instrumental Activities of daily living (performance)	2.53	1.00	-1.53 (-2.75; -0.31)	-0.45	-2.56	0.016*
Independent living	1.31	1.69	0.39 (0.18; 0.59)	0.61	3.79	0.001*
	Mean, baseline	**Median, end**	**Median of difference (inter quartile range)**	**Effect size (R)**	**Z**	***p*-value (Wilcoxon test)**
Cognitive Performance Scale	1	0	0 (-1.00; 0.00)	-0.24	-1.29	0.198
Negative Symptoms Scale	3	0	-1.50 (-4.50; 0.00)	-0.44	-2.38	0.017*
Anhedonia Scale	3	0	-1.50 (-4.50; 0.00)	-0.47	-2.52	0.012*
Severity of Self-Harm	3	1	0.00 (-2.50; 0.00)	-0.45	-2.44	0.015*
Instrumental activities of Daily Living (capacity)	3	0	-0.50 (-6.25; 0.75)	-0.33	-1.79	0.073

*Statistically significant change in p-value

Table 4. Accommodation status of the participants at baseline and at the end of rehabilitation

Accommodation	Baseline (n = 39)	End of rehabilitation (n = 39)
With parents	9 (23.1%)	1 (2.6%)
Individually/with partner	13 (33.3%)	27 (69.2%)
Supported housing	2 (5.1%)	1 (2.6%)
Residential Care	3 (7.7%)	7 (17.9%)
Other/Not known †	12 (30.7%)	3 (7.7%)

† Included those that were in inpatient care in a psychiatric hospital and there was no information on accommodation

DISCUSSION

MAIN RESULTS

In this study of residential psychiatric rehabilitation of persons aged 18-29 with severe mental disorders, clinical psychiatric symptoms decreased and functioning improved during rehabilitation. Depression and mania symptoms and risk of harming others decreased statistically significantly from start to end of rehabilitation with a medium effect size. Also, negative symptoms, anhedonia and self-harming conduct decreased statistically significantly with a small effect size. Performance in instrumental activities in daily living also decreased statistically significantly, with a small effect size, indicating an improvement in functioning. In addition, the proportion of persons living independently increased from 33% to 69%. Even though the sample size was small, using an unselected clinical sample is to be considered an important advantage.

COMPARISON TO EARLIER STUDIES AND CLINICAL IMPLICATIONS

In this study, the Depression Rating Scale scores decreased statistically significantly. There were also statistically significant decreases in negative symptoms and anhedonia. These two scales include partly the same items (online supplement 1), such as questions about withdrawal from activities of interest and decrease in motivation and/or social contacts. Also, severity of self-harm had decreased. Severity of self-harm measures self-destructive thoughts and behaviours. To our knowledge there are no studies that compare self-harming thoughts and behaviours before and after psychiatric rehabilitation and/or residential services. Previous studies have shown a connection between fewer depressive symptoms and an increase in subjective quality of life [46] and mental health recovery [47]. Unfortunately, we did not have a measure of quality of life in our sample. One may nevertheless hypothesize that decrease of symptoms and increase of functioning positively influence quality of life. Participants may have found ways to cope with their symptoms better, and thus they do not cause as much psychological distress.

The studied residential psychiatric rehabilitation did not have an effect on positive symptoms or cognitive and communication abilities. For positive symptoms, antipsychotic medications (ES 0.26-0.49) [48] and CBT (ES 0.65) are the most effective available interventions [49]. A systematic review of people with severe mental illness in supported accommodation showed mixed evidence on psychiatric symptoms: three studies showed improvements, two no change and two worsening of symptoms [7]. In recent studies of psychiatric rehabilitation, one study found no effect on positive symptoms [50] and in two studies positive symptoms decreased statistically significantly [51,52]. CBT was not available in the rehabilitation analysed in our study. In our sample for cognitive and communication deficiencies CRT and Social Cognitive and Interaction Therapy (SCIT) were offered based on individual assessment. These are considered to be efficient interventions [24–26]. It has also been proposed that more scientific evidence is needed for recognizing individuals who benefit from cognitive rehabilitation, the timing and amount of the interventions [26] and the maintenance of results [53].

Independent living was the primary target of the studied rehabilitation. The study sample had markers of poor mental health and functional capacity: more than half of the sample had several diagnoses (64%), several co-medications (54%) and prior to rehabilitation over one third (36%) was either in supported accommodation or psychiatric inpatient care. We found that at the end of rehabilitation 69% of participants attained independent living, and of all participants, assisted (24/7 support) or supported living was needed by only 13%. The Boston psychiatric rehabilitation (BPR) is one approach to psychiatric rehabilitation and it has been studied in Europe [54–56]. A Swedish study found that while BPR outpatient care was effective regarding the goals of societal participation and contacts (including work and educational goals), it was not effective at improving living conditions [57]. An English cohort study of residential services found that most people did not move on to a more independent accommodation. From the compared residential service types the most statistically significantly effective service type in increasing move on was floating outreach [58]. Floating outreach is comparable to the studied rehabilitation's time point where there was less support for accommodation (e.g., staff not on site, staff patient ratio 0.19, congregate or individual accommodation, for more details see *Table 1*). Thus, our study result of a significant increase in individual living is a clinically meaningful result.

Good performance in IADL is needed in independent living and practised at all stages of the studied rehabilitation. In our study, performance in instrumental activities of daily living (IADL) improved. Notably however, a change was found only in performance (IADL_21 scale) and not functional capability (IADL_42 scale), although both IADL scales measure the same activities, such as taking medication or shopping. The interRAI CMH is based on the rater´s evaluation of observations and interview. In the studied rehabilitation the last interRAI CMH evaluation was in most cases performed at a time point where there was less support in accommodation (See *Table 1*). It could be that in functional capability of IADL skills, raters had less observations and that for performance they relied on the interview of the person evaluated.

Even though psychotic disorders were diagnosed in 31% of the participants, antipsychotic medication was used by 72% of the participants. Use of antipsychotics is also common in other than psychotic and bipolar disorders and, based on one systematic review, 45-70% of all use of antipsychotics is off-label [59]. In general, antipsychotics are used, e.g., in affective and anxiety disorders if other treatments have not been effective enough [59,60]. In clinical practice personality disorders and insomnia may also be reasons for antipsychotic use [59], although there is little evidence of their efficacy in these conditions [60]. Our sample had severe symptoms, comorbid conditions and low functioning, which may be one of the reasons behind the high use of antipsychotics.

Our study results point out that combining evidence-based psychiatric rehabilitation interventions with residential services can be beneficial. In residential services individuals are present at the intervention site and can get support for attendance, hence increasing the effect of the intervention. As mentioned in the introduction these interventions might not be implemented enough. There are many possible reasons for this such as the lack of economic, time and personnel resources in the public sector to organize psychiatric rehabilitation interventions. In the future it would be interesting to study long-term cost-effectiveness of psychiatric rehabilitation and residential services combined. It would be important to study and identify what elements of the combined residential services and psychiatric rehabilitation are effective, e.g., for gaining independent living, for decreasing symptoms and self-harm. In addition, it would be important to analyse the effect of residential services in different countries.

STRENGTHS AND LIMITATIONS

A major strength of our study is that this is one of the few studies on residential psychiatric rehabilitation. Our study was a clinical real-world sample of young persons with severe mental disorders, followed over a long period. This kind of study and population is difficult to perform as a randomized controlled trial (RCT) because the length of rehabilitation was on average 2.5 years. A RCT design would be very difficult and expensive to administer for so long. This was the first Nordic study considering outcomes of psychiatric rehabilitation using the interRAI CMH evaluation instrument, among other measures. We had a large amount of data on the participants, and we were able to study several outcomes. Analysed outcomes included both functioning and mental health-related outcomes.

There are limitations to this study. Firstly, considering the sample, the sample size was small (n = 39), although this is comparable to other European studies of psychiatric rehabilitation [46,52,61]. The lack of statistical significances may be partly due to small sample size. It was not possible to determine the sample size prior to the study, since this sample was not originally collected for research purposes. The study population was 114 persons of which only 39 (34%) gave their informed consent, limiting the generalizability of the results. It can also be considered a limitation that some of the outcome variables may measure the same phenomena from a different perspective (e.g., anhedonia, negative symptoms), and while the goal of the psychiatric rehabilitation was independent living and good quality of life, quality of life was not measured in our sample. In addition, there was missing data in the interRAI CMH evaluation: for most of the scales data was available for 28-29 persons, and for IADL (performance) the data was available for 32 persons. Finally, the study design was retrospective and there was no comparison group. The changes found in outcomes might be a caused by some other undetected factor than the psychiatric rehabilitation.

FUNDING

This work was supported by Oulu University Hospital funding; Academy of Finland (grant number 316563); Juho Vainio Foundation (author JM); Yrjö Jahnsson Foundation (author JM). The funders had no role in the study design, data collection, data analysis, interpretation of the results, or the decision to publish the article.

DATA AVAILABILITY STATEMENT

The data that supports these findings contains sensitive personal data and cannot be made publicly available because of restrictions imposed by the EU and Finnish General Data Protection Regulation (GDPR). However, the restricted data can be applied for directly from the corresponding author in order to make the data as FAIR as possible. All requests will be accordingly replied to and the data will be made available if the request is adequate, responsible and reasonable.

Declaration of interests

We declare the following conflicts of interests:
Jonna Tolonen has been a minority owner (2011-2018), a member of the board of directors (2011-2018) and working for Sähäkkä Ltd. (2008-2020). As of 2021 Tolonen has been a freelancer of occupational therapy and irregularly works for the company. Virpi Leppänen has given professional guidance in Sähäkkä Ltd. (2017-2019). Erika Jääskeläinen, Marianne Haapea and Jouko Miettunen declare no conflict of interest. Kristiina Moilanen has worked for Sähäkkä Ltd. (2012-2019).

Supplementary Material

Supplementary data are available at Psychiatria Fennica online

Acknowledgements

We want to give a warm thank you to all the study participants. We want to thank nurse Marjo Typpö for resource help and public health nurse Jaana Riekki for participating Investigation. We also want to thank Raisoft Ltd. for their software assistance.

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PROTOCOL FOR A PARTICIPATORY SURVEY TO INVESTIGATE THE LONG-TERM EFFECTIVENESS OF ADULT PSYCHIATRIC SERVICES (PSILEAPS): A PROSPECTIVE EXPLORATORY COHORT STUDY

ABSTRACT

Mental health research and practice is currently moving beyond a focus on group-level symptom reduction models. Hence, research and treatment increasingly emphasize the real-life individual needs of service users and their social networks. One example is the Open Dialogue approach (OD), which has demonstrated promising outcomes in the Finnish Western Lapland (WL) catchment area. Nevertheless, it is unclear how OD-based services have so far been maintained in WL. It is also unclear how the experiences of multi-disciplinary care teams, service users and their social network members differ, with regard to differing approaches to mental health treatment. More generally, there is a global need for information on factors associated with the long-term treatment outcomes of real-world mental healthcare. This project – a participatory survey to investigate the long-term effectiveness of adult psychiatric services (PSILEAPS) – aims to address these questions. The survey will take place over a two-week period. It will be aimed at all five WL catchment area adult mental health units, and will cover care team members, service users and members of their social network. These will be asked to share their thoughts on (i) why mental health services have been needed in the case in question, and (ii) what factors in the treatment have been helpful or unhelpful. The service users who participate will form a research cohort, which will be followed over five years. Information on demographic and clinical characteristics will be obtained from social and healthcare registers at baseline, and at two- and five-year follow-ups. The primary outcome variables at follow-up will be treatment contact at follow-up, disability allowance at follow-up and death during follow-up. Exploratory statistical analyses will be used to study how different variables (including the main principles of OD) are associated with different outcomes. The information can be used to create new hypotheses to guide future research, and to develop mental health services. The participatory design will enable service users to join in the co-production of knowledge. This has the potential to immediately guide and improve their mental healthcare.

KEY WORDS: COMMUNITY MENTAL HEALTHCARE; COST-BENEFIT ANALYSIS; LONG-TERM FOLLOW-UP; NEED-ADAPTED APPROACH; OPEN DIALOGUE APPROACH; PATIENT INVOLVEMENT; SERVICE USERS; TREATMENT OUTCOME

BACKGROUND

In evidence-based psychiatry (EBP) the aim is primarily to produce group-level information in order to guide general treatment procedures (1). The main focus in EBP is usually on measurable symptom reduction, with the possibility of subsequent confirmatory efficacy studies on specific and predefined treatment methods via randomized controlled trials. Nevertheless, although EBP has indeed produced generalizable information to support medical decision making, in practice the way in which it is sometimes (mis) understood and applied may neglect the more existential factors in mental healthcare, including long-term social functionality, personal causal beliefs regarding mental distress, service users' own treatment preferences and the real-world effectiveness of mental health treatment (1,2).

The World Health Organization (WHO) (3) and the United Nations (4) have recently expressed concern regarding the current state of global mental healthcare. There has been no improvement in long-term treatment outcomes, and many countries have witnessed a significant growth in mental health disabilities (3). Moreover, in many countries the longevity gap between people with severe mental disorders and the general population has been widening (3,5,6). WHO (3) has urged radical changes in the global practice of mental health treatment and research. It takes the view that in addition to EBP group-level symptom reduction models, research should pursue methods that take better account of the actual causes of human suffering, and the individual needs of both patients and their social networks.

One example included in the WHO (3) guidance is the *Open Dialogue approach* (OD), which originated in the Finnish Western Lapland (WL) catchment area (Länsi-Pohjan sairaanhoitopiiri). Within this area, on the basis of naturalistic research integrated with everyday clinical practice, a new way to organize and practise mental health treatment was introduced (7). Thus, instead of structured diagnostic procedures and predetermined standardized treatment methods (aimed at immediate symptom reduction), the mental health services in the WL catchment area aimed to gather all relevant people together as soon as possible, in order to a create a shared understanding of each situation within reciprocal dialogue (7). After a dialogical response to the mental health crisis, various treatment approaches were integrated, according to the actual and current needs of each individual and their social networks, crossing organizational boundaries as necessary (8).

In naturalistic studies, OD has demonstrated improvements in mental health treatment outcomes and in social functioning in comparison with standard care (7,8,9,10,11,12,13,14). However, uncertainty remains concerning the elements of OD that are beneficial in different situations (15), and the extent to which the treatment approach has been maintained in WL mental health services after the original research projects (8). Moreover, there is a lack of information on how clinicians, service users and their social network members experience different treatment approaches, including the main principles and other characteristic features of OD. More generally, there is a global need for information on how different baseline characteristics, treatment strategies and personal treatment preferences are associated with long-term outcomes in real-world clinical settings.

These questions will be addressed via the prospective exploratory cohort study entitled *a participatory survey to investigate the long-term effectiveness of adult psychiatric services* (PSILEAPS). The study will use structured questionnaires in conjunction with actual treatment outcomes from current psychiatric services in the WL catchment area. The study design will apply a participatory research approach, including grass-roots treatment evaluation, integrated with everyday clinical practice.

METHOD

OBJECTIVE

The general and detailed research questions in the PSILEAPS study are framed as follows:

1. What is the nature of the mental health treatment applied in the current services of Western Lapland?
    1. How are OD principles generally applied?
    2. How are the different baseline characteristics (e.g., unit, care team characteristics, and service users' demographic and clinical characteristics) associated with different treatment strategies?
2. What is the opinion of mental healthcare *professionals* in the Western Lapland catchment area regarding mental health problems and their treatment?
    1. Do the professionals view biological, social or psychological factors as dominant in terms of causality?
    2. How are the different baseline characteristics (e.g., work experience, on-the-job-training, profession)

    associated with causal beliefs?
    3. In what ways are causal beliefs and other baseline characteristics associated with treatment preferences?
    4. Are care team members able to work according to their own preferences? If not, what are the main obstacles to this?
3. What is the opinion of mental healthcare *service users* and their social network members regarding mental health problems and their treatment?
    1. Do they view biological, social or psychological factors as dominant in terms of causality?
    2. How are baseline variables (e.g., clinical and demographic characteristics) associated with their causal beliefs?
    3. How are causal beliefs and baseline variables associated with treatment preferences?
    4. Are there differences in causal beliefs and treatment preferences between service users, social network members and care team members?
    5. What kind of treatment have service users received, and has the treatment related to their personal treatment preferences? If not, what are the main obstacles to this?
4. What is the long-term outcome of mental health treatment, and what factors are associated with it?
    1. How are different baseline variables (e.g., unit, care team characteristics, and service users' demographic and clinical characteristics) associated with long-term outcomes?
    2. How are different treatment strategies and methods associated with long-term outcomes when adjustment is made for potential confounders (e.g., service users' demographic and clinical characteristics)?

It is anticipated that exploratory data analysis will generate new hypotheses on factors associated with (i) service users' and service providers' treatment preferences, (ii) real-life community-based mental health treatment practice, and (iii) the long-term outcomes of real-life mental healthcare. At the same time, it will be possible to obtain descriptive information on how the main premises of the Open Dialogue approach are maintained in the WL region, and the factors associated with this. The data can be used to create new hypotheses on the effectiveness of community mental health services in general, and on OD in particular.

On the basis of earlier studies, it is expected that three-year on-the-job OD training will be associated with psychosocial causal beliefs, and with an emphasis on the principles of OD, at least partially independent of the work unit and the service users' demographic and clinical characteristics. It is also expected that the service users will show a general preference towards psychosocial causal beliefs and participatory mental health treatment strategies, rather than towards biological causal beliefs and symptom reduction treatment methods. It is expected that the network-oriented treatment will be associated with more favourable long-term outcomes, and that the association will be partially independent of confounding factors, including baseline demographic and clinical characteristics.

As this is participatory research, most of the information will be immediately available to service users and care team members, with possibilities to guide the actual mental health treatment. This in itself has the potential to immediately improve the quality and effectiveness of mental health treatment. All the information gathered during the project will assist in planning the research and development of future mental healthcare services, with a view to better addressing the actual needs of service users and their social networks.

In addition to above goals and expected results, the information on care team members' experience, in-house training and treatment orientations (low threshold services, continuity of treatment and inclusion of social networks) are used to assess each mental health unit's readiness to participate in the global HOPEnDialogue project. The aim of HOPEnDialogue is to globally evaluate the effectiveness of Open Dialogue approach by following similar research frameworks and outcome evaluation as used in ODDESSI trial in United Kingdom (16).

DESIGN

Finland is a Nordic country with a population of 5.5 million. The Finnish mental healthcare system is publicly funded, and the municipalities are responsible for providing services to all their residents. The WL catchment area consists of the south-western parts of Finnish Lapland with a population of 61 172 in 2018. Data for the PSILEAPS study will be gathered within two-week periods from four local psychiatric outpatient units, and from one psychiatric ward.

The PSILEAPS applies a participatory research design that engages community stakeholders, including mental health workers, peer experts, service users and their family members to work alongside academics in different phases of the research process (17). The project was initiated in 2019 by arranging open community meetings for all workers and peer experts from WL mental health services. In these meetings the initial goals for the project were determined, and first drafts were made of the structured research questionnaires for care team members, service users and their social network members. The questionnaire for care team members was first piloted in Kemi outpatient clinic in December 2019. On the basis of experiences from the pilot, the questionnaire was further developed.

In the spring of 2020, the questionnaire was presented to all care team members in WL (18). At the same time, feedback on the questionnaire and on its relevance for actual clinical work was obtained. After the data collection, several new community meetings were arranged to finalize the questionnaire on the basis of the results from the pilot, paying attention to both the psychometric properties of the questionnaire and to feedback from care team members. The final version of the questionnaire was also reviewed in meetings with service users in Keropudas Psychiatric Hospital, in order to ensure that the questions were relevant and understandable from the service users' perspective.

The North Ostrobothnia Hospital District ethical committee approved the questionnaire and the participatory study design in 2020. The first pilot (19) of the participatory survey was conducted in 2020, in Keropudas hospital's outpatient clinic. Within it, all care team members gave their own responses, and also obtained responses from service users and their social network members pertaining to each treatment process within the given time frame. The pilot showed that it was possible to integrate participatory research within everyday clinical practice. Moreover, as indicated by care team members, it acted as an evaluative platform for treatment which fitted well with everyday clinical practice. However, some care team members found that the survey took too much time, especially if they had drawn up particular treatment plans prior to the outpatient meeting. The service users and their social network members found the questionnaire to be both meaningful and useful, and no harmful aspects were reported. The pilot study indicated that remote meetings associated with the COVID-19 pandemic would lead to a loss of potential candidates. Hence, the full-scale study was postponed from 2021 to 2022.

In the full-scale study, all care team members from all five adult mental health units in WL will collect the information (see above) via a questionnaire aimed at all persons who use the services within a two-week time frame. From existing case note data, it is estimated that within this two-week time frame, there will be 200-300 treatment processes/meetings from the five adult psychiatric units in the catchment area.

During the two-week inclusion periods, the data will be gathered via structured questionnaires designed especially for this study (*Table 1*). The first part of the questionnaire is based on the biopsychosocial model of mental health problems. It consists of three questions with examples on why mental health services are needed (or not needed) for a particular service user. The second part consists of three questions on how the service users' situation should be approached. The third part includes a list of all the service and treatment approaches that currently exist in WL mental health services. Care team members, service users and their social network members will each indicate which of these treatment methods and approaches have been or may be helpful in a given treatment process. In the final part of the questionnaire, there are questions concerning the service users' current mental wellbeing, functionality and the improvement/decline in their mental health and social functioning over the last month.

Table 1. Baseline information: to be obtained for all treatment processes from each Western Lapland adult mental health unit in the two-week inclusion periods

	Demographic	Clinical	Questionnaire
Service user	Age; Gender; Education; Residence; Civil status; No. of children; Working; Sickness leave; Disability allowance	Diagnoses (ICD-10); BPRS-scores; How was treatment initiated?; How quickly was the first meeting arranged?; How frequently are meetings arranged?; Have there been changes in the treatment team members?; Is there ongoing rehabilitation psychotherapy?; Has the patient met the doctor?; No. of treatment contacts; Overall duration of mental health treatment; Drug problem; No. of re-admissions; Total duration of hospital treatment; Medical treatment (past; ongoing; type of medication(s); dose; off-label); Duration of medication (separately for each group); Medication harm? (if yes, what?); Deprescribing attempts	**Section 1: Causal belief on why I (the client) am using mental health services:** • Psychological (e.g. emotions, thoughts/ cognitions, personality) (0=disagree–10=agree) • Biological (e.g. functions of the brain, genes, other functions of the body) (0–10) • Social (e.g. interpersonal relationships, life events, and co • Other, what? **Section 2: I (the client) may benefit if help is arranged on the basis of:** • my subjective experiences and views (0–10) • other persons' expert knowledge and opinions (0–10) • the influence of environmental factors (other people, living conditions, etc.) (0–10) **Section 3: What helps: (0–10) (mark if the treatment method/approach has been implemented)** • Meetings with the care team members; Continuity of care; Rehabilitation psychotherapy; Teamwork model; Psychiatric hospital care; Supported housing; Body-oriented exercise; Home visits; Electroconvulsive therapy; Occupational therapy; Medical treatment; Social work and assistance; Peer work; Expert opinion; Social network involvement; Health advice/ psychoeducation; Addiction care; An expertise network involvement; Group therapy • Something else? If so, what? • The treatment has followed my own treatment preferences (if not, what could be done differently?) **Section 4: My (client's) wellbeing** • Current mood (low–high) • Current level of functioning (low–high) • Current social relationships (poor–good) • Changes in psychological wellbeing in last month (declined–improved) • What factors are decreasing wellbeing? • What factors are increasing wellbeing?

→

	Demographic	Clinical	Questionnaire
Social network members	Relationship to service user	Not applicable	Corresponding questions about service user's situation as above
Care team members	Age; Gender; Work experience; Contract type; Profession; Work unit; In-service training; OD training	Not applicable	Corresponding questions about service user's situation as above

All the predetermined questions will be measured via a visual analogue scale (rated from 0 (disagree) to 10 (agree)). It will be emphasized that the questions and responses are not mutually exclusive. All parts of the questionnaire will also include open-ended questions enabling the respondent to provide their own perspective.

If the service users are willing to participate, they, their care team members and possible social network members, will each provide their own responses via a questionnaire regarding the treatment process in question. All service users will also be offered the opportunity to go through all the responses regarding their situation in joint meetings with their care team members and/or with the principal investigator. These will offer instant feedback on the actual treatment for all persons who participated in that particular treatment process. During the data collection, experiences pertaining to this participatory treatment evaluation will be collected from care team members and service users, and these will be analysed via qualitative methods. To ensure a participatory design (20), care team members, service users and their social network members will be given the opportunity to review the analyses and to participate in compiling research articles.

Background information on demographic and clinical characteristics, including the somatic and psychiatric morbidity prior the participation, will be obtained directly from service users, and – with their informed consent – from their health and social registers. Psychiatric symptoms and their severity are also assessed via Brief Psychiatric Rating Scale (BPRS). Care team members will collect all questionnaires and background information from each treatment process, and deliver them to the principal investigator for saving and pseudonymization of the data.

The primary and secondary outcome variables presented in *Table 2* will be formed from the two- and five-year follow-ups. Secondary outcome variables are also used to evaluate the cost-effectiveness of treatment. The two- and five-year follow-up data for each participating service user will be obtained from social and healthcare registers in Finland. Aligned with the exploratory design, combined outcome variables are used to produce more comprehensive information on participants' life situation at follow-up.

Table 2. Primary and secondary outcome variables at the follow-up phases

Primary outcome variables	Treatment contact (yes: if there is ongoing treatment contact or psychiatric medication treatment at the follow-up) Disability allowance (yes: if there is an ongoing mental health disability allowance at the follow-up) Death (if participant has died during follow-up)
Secondary outcome variables	Working at the follow-up (yes/no) Income during the follow-up Time (days) to relapse after jointly ended treatment process Disability allowances during follow-up No. of hospital admissions during follow-up No. of hospital days during follow-up No. of outpatient visits during follow-up Medication treatment during follow-up Family relations (N of children, civil status, living alone (yes/no))

PROPOSED STATISTICAL ANALYSES

It should be noted that the envisaged survey is a non-confirmatory exploratory study, the aim of which is to create new hypotheses rather than to test them. Nevertheless, for register-based follow-up the goal is to reach adequate statistical power ($1-ß > 0.8$), in order to detect correlative trends and associations from the data sets. To this end, for the purposes of the correlation analyses, the minimum sample size has been calculated as 130 service users, and for the regression analyses 140 service users. These numbers will be sufficient to detect correlation coefficients higher than 0.5 and odds ratios higher than 1.7. As there may be loss to register-based follow-up due to death, the proposed sample size for PSILEAPS is 150 service users. If a sample size of 150 service users is not reached within the two-week periods (due to a loss of candidates or refusal), new data collection periods will be set until the sample is large enough. Note that the necessary sample sizes could differ according to the sub-question and minimum association we wish to detect.

Non-confirmatory exploratory statistical approaches (21,22) will be used to analyse the data. The sample characteristics and group differences will be studied via descriptive statistics, chi-square test, and parametric or non-parametric tests, depending on the properties of the data. Associations and observable trends will be studied via descriptive statistics, correlations, factor analysis and regression analysis (questions 1–3). Regression models with stabilized inverse probability of treatment and/or other adjustment will be used to study how demographic and clinical baseline characteristics are associated with the long-term outcome (question 4).

DISCUSSION

Participatory research design engaging the clinicians, peer experts and service users to work alongside academics, from problem identification to the dissemination of results, develops a community capacity to be co-producer of the research process and outcomes (17). This may in itself help to develop research-based mental health services, although more collaborative research-process also sets some challenges to the generalizability of both the research design and results. For example, as both the research questions and measurements were drafted in joint process with clinicians and peer experts in one catchment area, they may not be directly transferable to other settings. Nevertheless, the participatory design is transferable, and re-conducting the process in other catchment areas would provide information on both the participatory research process and treatment outcomes, that could be further used to estimate the generalizability of the main outcomes of PSILEAPS project.

Even though the research will be collaboratively planned with care team members, it is possible that some workers will not be willing to participate in the data collection. There may also be uncontrollable selection in how they collect the data. To minimize this, all phases of the research will be planned and tailored together with all the care team members in each unit. The main goal is to conduct all the phases of study so that the research does not cause any extra burden on care team members. The design of the data collection is based on the co-creation of knowledge which would in any case take place in real-world treatment meetings. The differences will lie mainly in the more systematic documentation of information.

By using clinical case note data, it will be possible to conduct attrition analyses. If the attrition analyses indicate that there is loss or selection of participants as compared to the overall sample space (all the service users of the unit), it will be possible to re-conduct data collection in a different time frame. Moreover, if some care team members are unwilling to participate, there is the possibility that the principal investigator can collect data from their clients. To minimize loss and selection in follow-up, permission will be asked of all participants, so that their follow-up information can be obtained directly from social and healthcare registers.

It should also be noted that register-based variables, including the use of services and disability allowances, do not necessarily indicate better treatment outcomes in terms of, for example, life satisfaction, personally defined recovery from mental distress and general health. Nevertheless, the explorative design and the use of personal identification numbers allow us to combine and observe primary and secondary outcome variables side by side, in order to estimate more comprehensively participants' life situation at follow-up, and also the validity of singular outcome variables. To further increase the validity of main conclusions, service users and clinicians from the Western Lapland catchment area are openly invited to comment on the results and draft the research articles together with academics.

The WL hospital district has officially approved the design, and will support the research by allowing care team members to conduct the research within their working hours. As WL mental health services is part of Finnish public healthcare services, and is funded by a consortium of municipalities, this support is non-commercial. In line with the bottom-up study design, the research board of the PSILEAPS project will include both clinicians and peer experts within the catchment area. The principal investigator (TB) of the PSILEAPS project works as a clinical psychologist in the catchment area, and the co-investigator (HM) has a position as a peer expert. These positions could allow unique insights into the actual clinical practices of WL; nevertheless, it is recognized that having these positions could bring elements of subjectivity to the topic, with vulnerability to researcher allegiance bias. These issues will be openly discussed during the project.

The overall aim of PSILEAPS is to produce ecologically valid information on real-world mental health treatment and the factors associated with different treatment outcomes. The study design is also expected to have a direct impact on the quality of care, as it will provide instant feedback on treatment and treatment preferences.

It is expected that the PSILEAPS project will function globally as an example for other mental healthcare units on how participatory research can take place within everyday clinical work, and can shape mental health services in a bottom-up manner. The project will also provide new hypotheses on the effectiveness of real-world mental health treatment. It is likely that these hypotheses will be further tested via more structured confirmatory research designs. All of these outcomes will directly assist the development of more effective and more research-based mental healthcare services and practices.

Acknowledgements

The research protocol was approved by the ethical committee of North Ostrobothnia hospital district (EETTMK: 38/2020). All participants will be informed on the conduct of the study, and will sign the appropriate informed consent forms.

Disclosure statement

The authors have no competing interests to declare.

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JONNA LEVOLA

PREMATURE MORTALITY DUE TO ALCOHOL AND SUBSTANCE USE DISORDERS IN FINLAND - A REVIEW

ABSTRACT

Alcohol and substance use disorders (AUD and SUD, respectively) are associated with an increased risk of premature death. AUD/SUD also often co-occur with other psychiatric disorders, which in themselves, and combined with AUD/SUD may contribute to increased mortality. Suicide is a devastatingly prominent cause of death in AUD/SUD, as are unintentional overdoses and poisonings. Even though AUD/SUD have among the highest standardized mortality ratios of all psychiatric disorders, this is not reflected in how evidence-based treatment for these disorders is available in Finland. This review focuses on the risk of premature death due to all causes and suicide associated with AUD/SUD (excluding nicotine) in Finland and provides suggestions as to what could be done to decrease this risk.

KEY WORDS: ALCOHOL USE DISORDER, SUBSTANCE USE DISORDER, ALL-CAUSE MORTALITY, SUICIDE, YEARS OF LIFE LOST, DRUG POLICY

Alcohol and substance use disorders (AUD and SUD, respectively) are known risk factors for early death both globally (1) and in Finland (2). AUD/SUD are among the disorders with the highest standardized mortality ratio (SMR) of all psychiatric disorders (3). In high-income countries, such as Finland, the contribution of AUD and SUD to years of life lost (YLL) is close to 50% (1).

In 2020, some 1 700 persons in Finland died of alcohol-related diseases and alcohol poisonings, with the share of alcohol-related deaths of all causes of death being three per cent (five per cent for men and one per cent for women) (2). The connections between alcohol use and increased mortality rates have been widely studied. According to Kendler et al. (2016), the excess mortality associated with AUD is the result of a combination of the direct effects of AUD and personal factors (such as the personality traits of impulsivity and novelty seeking), which predispose the individual to develop an AUD and may also contribute to the increased risk of premature mortality (4).

SUD are also strongly associated with excess mortality from both medical and non-medical causes, such as accidents and suicide (5). Treatment-seeking individuals with illicit drug use in Finland have been found to have an increased risk for premature death (6,7). In 2020, Finland saw 258 overdose deaths, and had one of the highest relative overdose rates in Europe (8). As in the case of AUD, the excess mortality due to SUD arises from a combination of the direct effects of the SUD and the characteristics which predispose the individual to develop the SUD (5).

The mortality risk of individuals seeking treatment for AUD/SUD has been found to be increased among individuals who sought treatment later in life (6). Individuals who seek treatment for AUD are typically older than those who seek treatment for other substance use, and the direct effect of the AUD on mortality becomes progressively more important as an individual ages and the duration of AUD is prolonged (4). Older age of treatment seeking for AUD is likely to do with the typical course of AUD development over a time span of years or even decades, whereas, e.g., opioid use disorder (OUD) can develop over months or even weeks. Overall, harm due to illicit substance use can also occur quite quickly, and drug-related mortality is pronounced in younger adults compared to alcohol-related mortality (6).

DIFFERENCES ACCORDING TO SEX

Men and women differ with regard to AUD/SUD-related mortality (4-6). According to the Global Burden of Disease study in 2010, AUD/SUD explained 39 per cent of YLL in men and 16 per cent in women globally (9). The more prominent YLL in men compared to women is largely due to the higher male vs. female prevalence of AUD/SUD (lifetime prevalence for any AUD/SUD excl. nicotine ca. 21% vs. 7% among young Finnish adults; 10). It seems, however, that the mortality hazard ratio due to alcohol and substance use is stronger for women compared to men, i.e., AUD/SUD relatively increase mortality more among women than men (4,5).

In Finland, male gender has been found to be significantly associated with mortality risk among treatment-seeking individuals with AUD/SUD (6,11,12). This mortality risk has further been shown to be increased for men who lived in the urban Capital area (6), which is in concordance with previous research, where males living in big urban areas have had an increased risk for premature death (13).

SUICIDE DEATHS

AUD/SUD are significant risk factors for suicide deaths and suicides have been found to account for an average of ca. one tenth of all premature deaths among individuals seeking treatment for AUD/SUD in Finland (11). Among treatment-seeking individuals with illicit drug use in Finland, suicide along with accidental drug overdose have been found to be leading causes of death (7,11,14). However, there is much variation in how prominent suicide is as cause of death according to age and gender. Suicides are more common among men than women when addressing the absolute number of deaths, however, the ratio of deaths due to suicide have been found to be disproportionately large among younger women seeking treatment for AUD/SUD (11).

THE ROLE OF PSYCHIATRIC COMORBIDITY ON ALL-CAUSE MORTALITY AND SUICIDE DEATHS

Psychiatric comorbidities are important risk factors for premature death among individuals with AUD/SUD (11,15-17). A recent large population-based study (n > 7.5 million) on psychiatric comorbidities and their impact on mortality in Denmark found that the largest excess mortality was observed for combinations of psychiatric disorders that included SUD (18).

The comorbidity of AUD/SUD and other psychiatric disorders has often been studied from the perspective of specific psychiatric disorders, e.g., comparing mortality associated with major depression with or without comorbid AUD/SUD. Schizophrenia spectrum disorders have been studied most extensively and, e.g., recent results in the Nordics have shown that SMRs are highest for individuals with comorbid schizophrenia spectrum disorders and AUD/SUD compared to either disorder alone (19). In Finland, the additional risks of SUD in 30 860 individuals with schizophrenia or schizoaffective disorder were studied, and a 65% increased risk of all-cause mortality was found when compared to individuals without comorbid SUD (20). The risk was most elevated for external causes other than suicide (301% increase) and suicide (65% increase).

The role of SUD in mortality amongst Finnish forensic psychiatric patients has been studied. The SMR of the patients with a history of SUD was 4.1 compared to 2.8 for those without. Further, 16% of all deaths and a majority (64%) of accidental deaths occurred under the influence of some substance. These findings would appear to indicate that even a very long period of abstinence of several years during forensic care is not enough to reduce the mortality risk of individuals who suffered from SUD before their treatment, and these individuals require more active SUD treatment during and after forensic psychiatric hospital care (21).

Among 10 605 Finnish adults, who had sought treatment for AUD/SUD, 53.2% had been admitted to psychiatric inpatient care and 14.1% had undergone involuntary psychiatric inpatient treatment for at least one day, with bipolar disorder being the most common diagnosis (16.0%). Having been admitted to involuntary psychiatric inpatient care was associated with a 42% increase in risk of suicide, but no significant association was found for all-cause mortality. Suicides were the leading cause of death among younger women, specifically those with a history of psychiatric inpatient care, among whom over a third of deaths were due to suicide. Bipolar disorder and unipolar depression were associated with a 57% and 132% increase in risk of suicide, respectively. Somewhat surprisingly, in this population of treatment-seeking individuals with AUD/SUD, those with hospitalization(s) for psychoses had a slightly lower mortality risk (compared to individuals without psychiatric hospitalizations). This could be because individuals with psychotic disorders may have better access to treatment as they very often are treated in specialized psychiatric care (11).

ADOLESCENT ALCOHOL AND SUBSTANCE USE AND SUBSEQUENT MORTALITY IN ADULTHOOD

The implications of adolescent alcohol and substance use on mortality in adulthood have been studied in the 1986 North Finland Birth Cohort (NFBC1986) (22). The NFBC1986 is an ongoing follow-up study of 99% of all births, including all live-born children (n = 9 432) with an expected birth between 1st of July 1985 and 30th of June 1986, from the two northernmost provinces of Finland.

Current and lifetime alcohol and substance use were assessed at age 15-16 via self-report. In this cohort, younger age (<14 years) at first alcohol intoxication (AFI), but not younger age at first drink (AFD), was found to be associated with increased mortality by age 30 (22). AFI was associated with a 133% increase in all-cause mortality and a 199% increase in death due to accidents or suicide (23). Past 30-day self-reported alcohol intoxication was also associated with all-cause mortality; a 105% increase was seen among those who had been intoxicated one to two times and 202% increase among those who had been intoxicated three or more times in the past 30 days compared with adolescents without intoxication (24). High self-reported alcohol tolerance, a subjective evaluation of how many drinks one needs to feel inebriated, (≥9 for males, ≥7 for females) during adolescence was also associated with a 208% increase in mortality compared with adolescents without alcohol use or intoxication (25).

In the same cohort, a history of any illicit substance use in adolescence was found to be associated with both all-cause mortality and mortality due to accidents or suicide (23-25). When looking specifically at cannabis use, a 106% increase in the risk for self-harm was found, but cannabis use was not associated with suicide deaths (25).

OVERDOSE DEATHS ARE RISING AT AN ALARMING RATE

A steep rise in overdose deaths has been observed in the past 10-15 years in Finland with deaths doubling in the past decade (2,26). In 2020, a total of 258 persons died from overdose in Finland, which was 24 more than in the year before (2,26), and more than there were deaths due to traffic accidents in the same time period. In recent years, overdose deaths have especially risen among young adults and overdoses in Finland occur at a younger age compared to, e.g., other Nordic countries (26). In 2020, among men, most drug-related deaths were recorded in the 20 to 24 age group and among women in the 40 to 44 age group (27). The median age at death caused by drugs in 2020 was 30 years for men and 37 years for women (27).

Excess mortality associated with opiate misuse has been reported to be substantially higher than that observed for other drug classes (5,28). The mortality associated with opioid use could arguably be subject to the types of opioids used. Estonia saw a steep increase in drug overdose deaths from the turn of the century onwards, which was very much related to the introduction of fentanyl, an extremely potent full opioid agonist, to the drug market (29). In Finland, the most commonly abused opioid is buprenorphine, a partial opioid agonist with a ceiling effect, rather than full agonists (30). In 2020, 28% of all patients entering drug addiction treatment programmes identified buprenorphine as their primary substance of use (31). Although buprenorphine as a partial agonist is characterized as having a better safety profile compared to full opioid agonists, it has been for years the most common substance found in individuals who died from overdose in Finland (2,26). Typical overdose deaths occur when buprenorphine is used in combination with other sedative agents, such as benzodiazepines, alcohol and gabapentinoids (26). In 2020, benzodiazepines were involved in approximately two-thirds of all overdose deaths (26).

OPIOID SUBSTITUTION TREATMENT REDUCES MORTALITY

Opioid substitution treatment (OST) is a treatment model in which the illegal use of opioids is replaced by opioids prescribed by physicians in a supervised setting. OST was authorized in Finland in 1997 following a change in official policies prompted by the steep rise in illicit substance use and related harm – including increased mortality - in Finland in the 1990s (32). Up until the 1990s, doctors were sanctioned for prescribing opioid agonists to individuals with OUD. One important aim of OST is to reduce the significant harms caused by OUD and OST has been found to significantly decrease the risk of death compared to individuals with non-treated OUD (33), as well as compared to those in addiction treatment with OUD but not engaged in OST (6). Access to OST has slowly improved in Finland since the beginning of the 21st century (31,34), but coverage remains low compared to, e.g., other Western European countries (35).

The studies on the effect of OST on mortality have typically been carried out in patients with full agonist opioid use (33,36), which has raised questions on whether the benefits of OST apply in settings where patients use prescription opioids, as is the case in Finland with buprenorphine abuse. This concern was addressed in a large real-life study of over 10 000 men and women seeking treatment for alcohol or substance use in Finland (6). The participants were followed up for up to 15 years after seeking treatment. Those individuals with OUD in OST had a lower risk of death than individuals with OUD not in OST, and also a lower risk than those with other AUD/SUD (6). These findings suggest that even in a country where buprenorphine abuse prevails, OST regimes have a significantly beneficial effect on mortality.

WHAT SHOULD BE DONE?

Decreasing alcohol consumption in the total population leads to reduced mortality and several randomized trials have shown that interventions that led to reduced alcohol use on the individual level also led to reduction of mortality (4,37). However, total alcohol consumption is heavily dependent on price and availability, which are politically controlled, and beyond the reach of the healthcare system. Still, there is also much to be done within the healthcare system. There are many psychosocial evidence-based interventions available for the treatment of AUD/SUD, such as cognitive behavioural therapy, therapies aimed at motivational enhancement and contingency management approaches (38), but they are not sufficiently in use. Despite official guidelines and recommendations on providing evidence-based psychosocial treatment (39,40), provision of these treatments is limited, and addiction treatment as a whole is fragmented and desperately under resourced. Medical management of AUD is underutilized in many countries according to research (41), and this is also the case in Finland, according to clinical experience.

A Finnish expert panel on decreasing drug-related deaths (HEAR) provided recommendations to reduce overdose deaths based on the best scientific knowledge and clinical experience from other countries (*Table 1*). Many of these are ready to put into use, such as improving access to OST and harm reduction services, but others require legislative changes. Finnish legislators need to provide a special enactment that would enable the piloting of overdose prevention sites (aka. drug consumption sites), which has

Table 1. The seven recommendations of the Finnish expert panel on decreasing drug-related deaths (HEAR)[1]

Opioid substitution treatment (OST) is an evidence-based form of treatment and one of the key methods to reduce drug-related deaths. It is pivotal to ensure rapid access to and retention in OST.
Finland needs a special enactment that would enable the piloting of overdose prevention sites (aka. drug consumption sites). These sites provide a safer and more hygienic environment for drug use under the supervision of medical personnel. This pilot would provide important information on the impact of this type of service on drug-related deaths.
Access to harm reduction services, such as needle and syringe exchange, should be made as easy as possible everywhere in Finland. Services should be widely available and should be flexible in order to take into account the varying needs in different regions.
Access to naloxone should be improved. Naloxone is an opioid antagonist, which is used to treat overdose of opioids, such as heroin and morphine. Both people who use opioids and the health and social professionals who are in contact with them, should have easy access to naloxone.
It is necessary to improve trust between people who use drugs and officials in order to lower the threshold for calling for help. Campaigns and dissemination of information for different target groups is needed. The key message should be that calling for emergency help is needed and results in getting emergency care.
Dissemination of factual information for different target groups should be strengthened. The goal of this is to generate behavioural change towards safer and less harmful ways of using drugs, which in turn will prevent drug-related deaths.
Cooperation between the police, municipalities, social and health services along with the third sector should be improved so that the police are aware of how a person who uses drugs can access treatment. The goal is also to better the humane interaction with people who use drugs, improve referral to treatment and improve the trust of people who use drugs in officials.

[1] Kailanto S, Viskari I (eds.). Huumekuolemien ehkäisyn Suomen malli. Suosituksia huumekuolemien ehkäisemiseksi. [The Finnish model for drug-related death prevention. Recommendations to reduce drug-related deaths.] National Institute of Health and Welfare. Working paper 6/2022. Helsinki 2022. ISBN 978-952-343-819-4 (e-publication)

been put forth by two large Finnish cities (Helsinki, Turku) at the time of writing this. Finnish experts in the field of addiction have also called for decriminalization of drug use, as countries such as Estonia and Portugal have had positive experiences in doing so with reduction of the stigma and discrimination associated with drug use, that hampers access to healthcare, harm reduction and legal services.

Recognizing the psychiatric comorbidity associated with AUD/SUD is vital and needs to be addressed within our treatment system. Treatment of addictive and other psychiatric disorders has traditionally been segregated from one another, and psychiatric know-how, e.g., on assessing suicidality in the context of AUD/SUD, may be lacking from services providing treatment for addictive disorders. On the other hand, addictive disorders are under-recognized and untreated within psychiatric treatment services, and alcohol and substance use may in worst case scenarios prevent individuals from accessing necessary psychiatric evaluation and treatment. Truly integrated treatment of co-occurring disorders is needed.

Education in understanding and treating AUD/SUD is currently not sufficient among healthcare professionals. This in turn can lead to negative attitudes and frustration among professionals and subpar care of afflicted individuals. Education of healthcare professionals on addictive disorders needs to be improved already in basic medical and therapeutic training to reflect the scope of the public health burden associated with addictive disorders.

A positive development in Finland is the new proposed legislature, which highlights the nature of AUD/SUD as health disorders which should be treated primarily within the healthcare system. This shift could pave the way for a change in attitudes towards AUD/SUD within the healthcare system to help reduce the negative stigma that is still unfortunately related to these health disorders and enable provision of treatment and rehabilitation based on the actual health needs of individuals afflicted with addictive disorders.

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CONSULTATION-LIAISON PSYCHIATRY IN FINLAND TODAY AND CHALLENGES FOR THE FUTURE

ABSTRACT

The ongoing health and social services reform in Finland will restructure the organization of public healthcare and social welfare to 21 wellbeing services counties. Organizational models within wellbeing services counties will differ from each other and psychiatric services are going to be placed differently. Reform has raised concerns about the role of CL psychiatry (consultation-liaison psychiatry) in the future. In this article we will discuss the challenges of collaboration and consultation between psychiatric services and somatic specialties in changing operating environment. As background information some statistics from medical units of two Finnish hospitals where somatically ill patients have been referred to CL psychiatric services is explored. Also, as a description of key patient groups in CL psychiatric services the statistics of the main ICD-10 diagnoses in CL psychiatric services is presented. Medical conditions are associated significantly with increased psychological symptoms and psychiatric disorders. Therefore, different medical specialties widely use CL psychiatric services. The patients referred from somatic units form an important psychiatric patient group, which differs from the patients in psychiatric services generally. The vast majority of these patients are of working age. Continual cooperation between psychiatry and medical services should be guaranteed in the current reform of the organization of public healthcare. High-level treatment of medically ill should be ensured by maintaining general hospital psychiatry units and also transferring their skills more widely to outpatient settings.

KEY WORDS: CONSULTATION-LIAISON, COLLABORATION, HEALTHCARE STRUCTURE REFORM, HEALTH AND SOCIAL SERVICES REFORM, GENERAL HOSPITAL PSYCHIATRY

INTRODUCTION

The ongoing health and social services reform in Finland will restructure the organization of public healthcare and social welfare. From the beginning of the year 2023 these services, including mental health services, are to be transferred and organized from municipalities and hospital districts to 21 wellbeing services counties (17). Currently, all future wellbeing services counties are preparing and forming their own individual organizational models as backbones to provide services required by the law. Consequently, these organizational models will differ from each other, and thus psychiatric services will also be placed differently within wellbeing services counties. For example, in North Ostrobothnia psychiatric services will be placed together with social services, apart from other fields of medicine. In Central Finland, the discussion of the placement of psychiatric services in the wellbeing services is still going on. Unlike North Ostrobothnia, current plans of Central Finland include an option to distribute psychiatric services by placing some key services under specialized healthcare, and the rest of the services to the local health and social services. These diversities raise different views of concern about psychiatric services.

Health and social services reform have also raised concerns about the role of consultation-liaison (CL) psychiatry in the future, especially in wellbeing service counties where psychiatric services will not be directly integrated with somatic services. In practice, there is a major concern that in the future patients undergoing somatic research and treatment will not get the skilled psychiatric examinations and psychiatric treatment they need. Further, along with organizational changes, the continual development of somatic treatments and their shift increasingly from hospitals to outpatient medical services jeopardizes realization of psychiatric evaluation and treatment of somatically ill people. This is because the know-how of the psychiatric treatment of this patient group is traditionally in general hospitals.

In medical treatment, consideration of mental condition and its treatment to some extent is a crucial part of good clinical practice. This is of essential importance because psychiatric morbidity is very common among somatically ill patients. For example, the prevalence of mental disorders in general hospital inpatients has been estimated to be very high, up to 46.5% (19,2,12). Psychiatric comorbidity has been found to complicate the delivery of medical care and is associated with poorer patient outcomes, longer hospital stays and higher healthcare costs (9,3). Mental conditions of the somatically ill during medical treatments are mainly handled as a natural part of somatic treatment and rates of referrals to psychiatry have been found to be generally low (13). However, in some cases, psychiatric expertise and specialized level services are needed, for example, in suspicions of psychiatric disorders, differential diagnostic problems, adherence difficulties caused by mental symptoms and in difficulties in adapting.

In this article we will discuss the challenges of collaboration and consultation between psychiatric services and somatic specialties in a changing operating environment. As background information, we present the statistics of medical units of two Finnish hospitals from which somatically ill patients have been referred to CL psychiatric services. We also present the statistics of the main ICD-10 diagnoses in CL psychiatric services and age distribution of the patients as a description of key patient groups.

WORKING METHODS IN CL PSYCHIATRY

CONSULTATION

Consultation psychiatry specializes in the diagnosing and management of psychiatric disorders that are associated with medical illness. In practice, consultations can be either direct or indirect. In direct bedside consultations, according to written or spoken request, the psychiatrist meets the patient, clinically evaluates the patient´s mental state and gives recommendations. In consultations, responsibility for care with respect to psychiatric issues remains in the medical unit from where the referral has been made, unless otherwise agreed (8,11).

Consultation may also take place indirectly. This means that clinical problems are addressed together with personnel of somatic unit, without the consultant psychiatrist meeting the patient. This can take place, for example, in clinical multidisciplinary groups, where the psychiatrist is one of the key members in e.g., the obesity or jaw surgery team and the pain team. For example, during the planning of a demanding surgical protocol or long-lasting rehabilitation process, the pre-consideration of the patient’s mental status and management of psychiatric disorder may be the critical point in achieving the goal.

There are also other types of meetings or “consultation hours” where patients are not present, but patient issues are consulted. An example of these are regular psychiatric consultations for multiprofessional teams of a specific unit, like rehabilitation unit.

Psychiatric consultation is based on the comprehensive psychiatric evaluation of the psychological, biological, medical and social causes of emotional distress and psychiatric comorbidity among somatically ill. Hence, the consulting psychiatrist needs special knowledge on somatic illnesses and their treatment. This requires regular collaboration with various specialties, because in addition to traditional matters, there are also continually changing practices and subjects with the development of medicine. For example, development of genetics in medicine or transplant surgery raises new issues in relation to mental health and psychosocial support.

In addition to special knowledge of illnesses, successful consultation is based on fluent practices between psychiatric and medical staff from different units. Also, extensive knowledge of and cooperation with different sectors and operators in the whole healthcare field is required.

In practice, regular collaboration provides education of medical issues to psychiatric personnel, and accordingly, of psychiatric issues to medical personnel. This also maintains and develops practices to provide care for individual patients with psychosocial problems (18). There is evidence that these services are cost-effective and may reduce length of stay (20).

COLLABORATION

Collaboration (liaison) with medical personnel at all levels is a crucial part of practice in consultation-liaison psychiatry. It is necessary for successful consultations of a high standard. It also helps medical teams to provide good care for their patients (18). Further, daily collaboration has been found to improve the ability of doctors in general hospital to recognize comorbid psychiatric conditions (10). This is very important, because psychiatric disorders have been found to be consistently underdiagnosed in general hospitals (15) and only less than half of psychiatric disorders are identified by primary teams (5). In consultation-liaison psychiatry, beneficial collaboration is seen broadly, including all kinds of cooperation from informal discussions in the corridors to official meetings between specialties. It may be focused on patient work, development of services or education. Basically, the purpose of all forms of collaboration is to enhance consideration of psychosocial issues of the patients in medical settings (1).

MEDICAL UNITS FROM WHERE THE PATIENTS ARE REFERRED TO CL PSYCHIATRIC SERVICES AND THE MAIN DIAGNOSES IN CL PSYCHIATRIC SERVICES

DATA SOURCES

In this article we have utilized register-based data of two somatic hospitals and their medical units which refer patients to CL psychiatric services. The data from the Oulu University Hospital includes information on specialty of the medical wards for patients with acute referrals to CL psychiatric services. In addition, the data of main diagnosis for patients during outpatient (all acute and non-acute) visits in the CL psychiatric unit were explored. The statistics from the Oulu University Hospital are from year 2019, before the organizational unification of general hospital psychiatry with other psychiatric outpatient services. The data from the Hospital Nova of Central Finland were gathered from 2021, which was the first year of the full weight of CL psychiatric services in the new hospital. From the Hospital Nova the data on specialty of medical units, from where the patients have been referred to CL psychiatric services, cover all somatic wards and outpatient units. The data of main diagnosis collected from all patients treated in CL psychiatric services (acute and non-acute).

REFERRAL UNITS IN THE OULU UNIVERSITY HOSPITAL CL PSYCHIATRY

As for acute psychiatric consultations requested from somatic wards of the Oulu University Hospital (*Table 1*), a fifth of them were from internal medicine units. In our data, 16% of the consultations were requested from neurological wards and from specialties of otolaryngology and ophthalmology. A notable proportion (15%) of consultations were requested from surgery. A tenth of consultations were requested from oncology wards and a small number from intensive care wards.

Table 1. Specialty of somatic wards of the Oulu University Hospital from where acute psychiatric consultations were requested, year 2019

	n	**%**	**number of patients**
Consultations, total	676	-	618
Specialty of the somatic ward (sorted by frequency)			
• Internal medicine	137	20 %	132
• Neurology and neurosurgery	110	16 %	105
• Otolaryngology and ophthalmology	106	16 %	101
• Surgery	100	15 %	92
• Obstetrics and gynaecology	75	11 %	69
• Oncology	73	11 %	66
• Rehabilitation	42	6 %	40
• Intensive care	23	3 %	23
• Pediatrics	8	1 %	8
Consultations, age-groups			
<30	119	18 %	111
30-39	115	17 %	104
40-49	90	13 %	81
50-59	119	18 %	108
60-69	141	21 %	128
70->	92	14 %	87

* If a patient had several consultations in year 2019, she/he can belong to multiple specialty categories. In total numbers, each patient is represented only once

REFERRAL UNITS IN THE HOSPITAL NOVA OF CENTRAL FINLAND CL PSYCHIATRY

In the Hospital Nova of Central Finland during the year 2021 a total of 686 patients were receiving psychiatric evaluation and clinical intervention in CL psychiatry by 5578 visits. This was 16% of all patients and 10% of all visits in outpatient psychiatric services of the hospital. The specialties requesting consultations (including wards and outpatient units) during the year 2021 were mainly (data not available) neurology, rehabilitation, internal medicine and surgery. In addition, the number of consultations requested from oncology and intensive care wards were relatively small.

DIAGNOSTIC CATEGORIES OF CL PSYCHIATRY PATIENTS IN THE OULU UNIVERSITY HOSPITAL

Regarding outpatient visits to general hospital psychiatry unit in Oulu University Hospital (*Table 2*), the most common diagnostic categories were mood disorders (39% of all visits), especially depressive disorders. Also, anxiety and stress-related disorders were common (17%). A fifth of the visits to general hospital psychiatry unit were related to factors influencing health status and contact with health services (Z-codes), and somatic diagnoses were also common (16%).

Table 2. Outpatient visits (acute, non-acute) in general hospital psychiatry unit of the Oulu University Hospital, year 2019

	n	**%**	**number of patients ***
Outpatient visits, total	**5737**	**-**	**1022**
Main diagnostic categories with the most common diagnoses (sorted by frequency)			
F3: Mood (affective) disorders	**2243**	**39 %**	**308**
F33.1: Bipolar disorder, current episode manic without psychotic symptoms	518		
F32.1: Moderate depressive episode	462		
F32.2: Severe depressive episode without psychotic symptoms	414		
F33.2: Recurrent depressive disorder, current episode severe without psychotic symptoms	315		
Z: Factors influencing health status and contact with health services	**1208**	**21 %**	**455**
Z00.4: General psychiatric examination, not elsewhere classified	754		
Z73.3: Stress, not elsewhere classified	401		
F4: Neurotic, stress-related and somatoform disorders	**977**	**17 %**	**176**
F43.2: Adjustment disorders	167		
F43.1: Post-traumatic stress disorder	166		
F41.9: Anxiety disorder, unspecified	97		

→

Somatic diseases (A-E, G-Y)	**908**	**16 %**	**274**
C-D: Neoplasms	207		
G: Diseases of the nervous system	197		
M: Diseases of the musculoskeletal system and connective tissue	95		
I: Diseases of the circulatory system	91		
F2: Schizophrenia, schizotypal and delusional disorders	**120**	**2 %**	**21**
F29: Unspecified non-organic psychosis	47		
F20: Schizophrenia	41		
F22: Persistent delusional disorders	28		
F0: Organic, including symptomatic, mental disorders	**70**	**1 %**	**20**
F06.3: Organic mood [affective] disorders	38		
F6: Disorders of adult personality and behaviour	**59**	**1 %**	**24**
F60.3: Emotionally unstable personality disorder	26		
F5: Behavioural syndromes associated with physiological disturbances and physical factors	**55**	**1 %**	**19**
F7-F9: Neurodevelopmental and behavioural disorders (inc. Mental retardation, Disorders of psychological development, Behavioural and emotional disorders with onset usually occurring in childhood and adolescence)	**54**	**1 %**	**10**
F1: Mental and behavioural disorders due to psychoactive substance use	**42**	**1 %**	**10**
Outpatient visits, age-groups			
< 30	809	14 %	146
30-39	1389	24 %	222
40-49	1494	26 %	234

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50-59	1099	19 %	233
60-69	647	11 %	134
70 ->	299	5 %	84

* If a patient had several outpatient visits in year 2019, she/he can belong to multiple diagnostic groups. In total numbers, each patient is represented only once

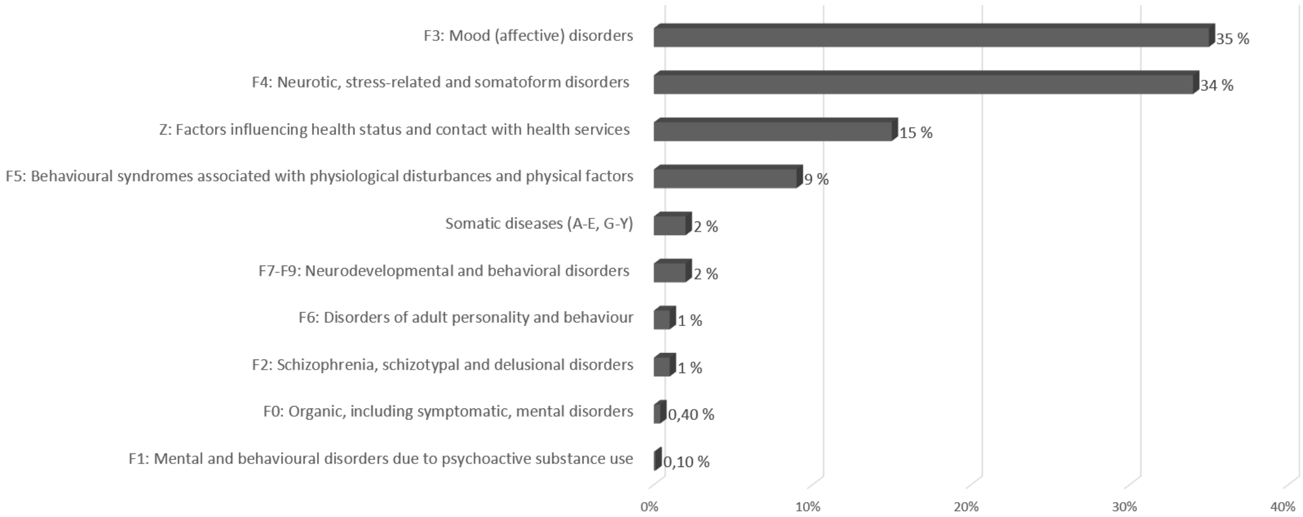
DIAGNOSTIC CATEGORIES OF CL PSYCHIATRY PATIENTS IN THE HOSPITAL NOVA OF CENTRAL FINLAND

In the hospital Nova of Central Finland, the two most common main diagnoses in CL psychiatric visits were mood disorders (35%) and neurotic, stress-related and somatoform conditions (34%). The factors influencing health status and contact with health services (Z-codes) was used in 15% and behavioural syndromes associated with physiological disturbances and physical factors in 9% of visits (*Figure 1*). Patients treated for psychiatric disturbances like psychosis or personality disorders were rare.

AGE GROUPS OF THE PATIENTS IN CL PSYCHIATRIC SERVICES IN THE OULU UNIVERSITY HOSPITAL

In the Oulu University Hospital 65% of acute consultations (*Table 1*) and 84% of outpatient visits (*Table 2*) consisted of patients aged under 60 years. In general, the distribution of patients to different age groups was relatively even.

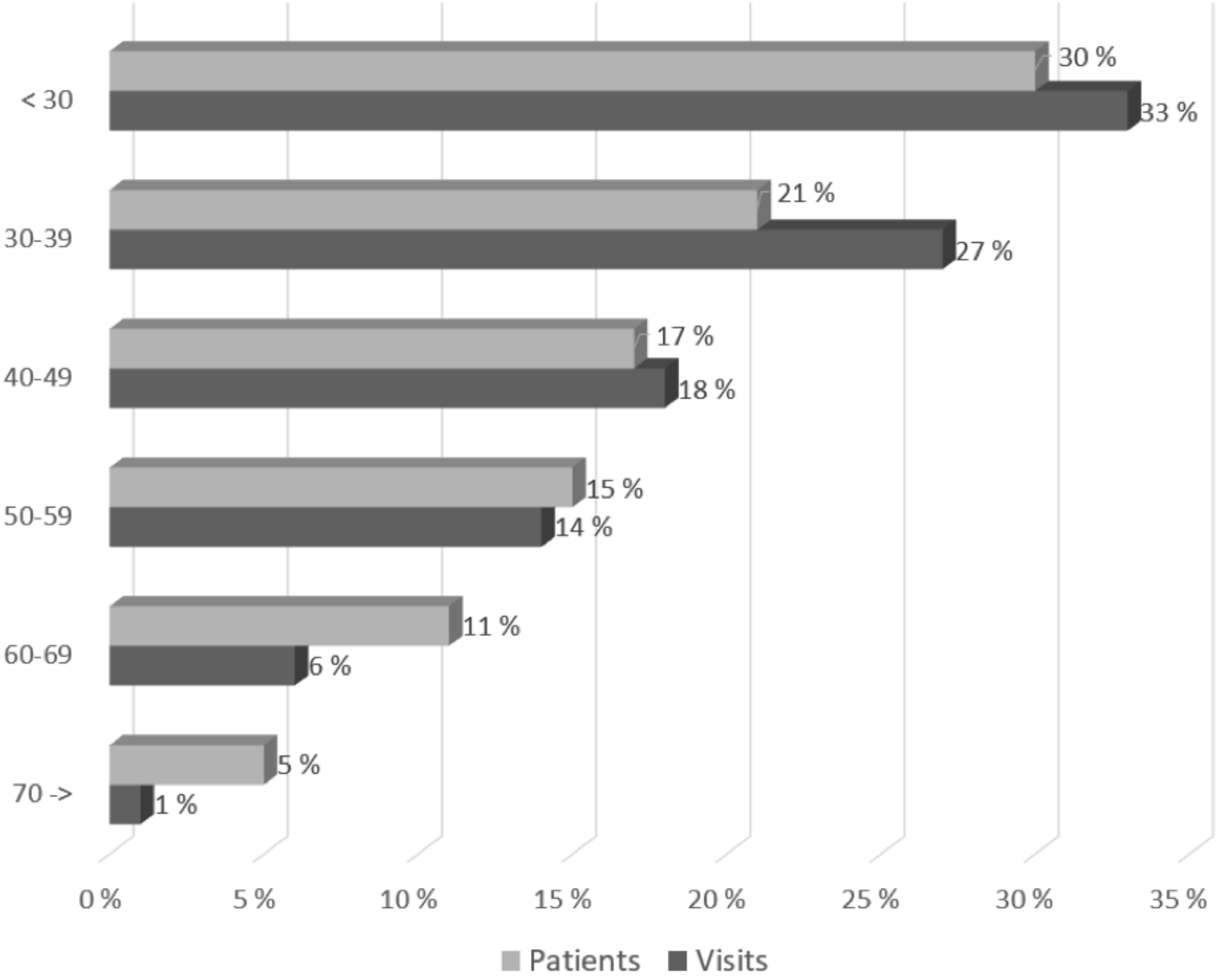
Figure 1. Main diagnostic categories of CL psychiatry patients in the Hospital Nova of Central Finland year 2021



AGE GROUPS OF THE VISITS AND PATIENTS IN CL PSYCHIATRIC SERVICES IN THE HOSPITAL NOVA OF CENTRAL FINLAND

In Central Finland the largest age group in CL psychiatry was young adults (under 30 years), in both number of patients and visits (*Figure 2*). 83% of patients and 92% of visits consisted of patients aged under 60 years.

Figure 2. Age groups of CL psychiatry patients (N = 686) and visits (N = 5578) in the Hospital Nova of Central Finland year 2021



DISCUSSION

As an overview, it is obvious that different medical specialties widely use CL psychiatric services. A wide distribution of medical specialties utilizing psychiatric services reflects the fact that regardless of the nature of somatic illnesses, persons suffering from them may also be in need of psychiatric evaluation. Different somatic illnesses treated at various specialties may have special features in relation to mental reactions and psychiatric disorders. Different specialties may also have a variety of specific questions for psychiatric services, e.g., about eligibility for a surgical treatment or assessment of work ability for patients in rehabilitation. Therefore, the maintenance and continual development of psychiatric know-how regarding these features and specific questions should be one of the main goals for future organizations.

CL PSYCHIATRY IS LARGELY NEEDED AMONG MEDICAL UNITS

According to our statistics, psychiatric consultations requested from somatic wards were often from internal medicine units. This is understandable, because internal medicine is a large specialty and the majority of the patients in these wards are acutely and seriously ill. Also, according to a wide range of literature, different medical conditions treated in internal medicine are associated with increased psychological symptoms and psychiatric disorders. For example, depression has been found to occur in 16–23% of patients with cardiovascular disease and an even larger proportion experiences subsyndromal depression (14). Further, patients with diabetes are three times more likely to have depression than those in the general population (4).

The relatively high number of consultations requested from neurological wards and outpatient units may be explained by significant psychiatric comorbidity of some neurological illnesses. For example, about 40% of stroke patients have been reported to be depressed (7). The severe, acute and burdensome nature of the conditions of the patients may explain the notable proportion of consultations requested from surgery or from otolaryngology and ophthalmology wards.

Consultations requested from oncology wards appear to be relatively small considering severity of illnesses they treat. However, in these units the patients are seriously, but often not acutely, ill and thus, psychosocial support for many of these patients may have already been organized. Also, multiprofessional teams at oncology wards have special competence for comprehensive treatment, and therefore specialized level psychosocial treatment from CL psychiatric services may not be needed to a larger extent.

A small number of consultations requested from intensive care wards may be explained by the relatively small number of patients receiving this care compared to the number of patients treated in other specialties. Also, patients in intensive care are often in a condition that they are not able to benefit from psychiatric consultations. Instead, psychosocial support for patients´ family members is emphasized, for which they are usually referred to services outside of the general hospital.

DIAGNOSTIC CATEGORIES OF CL PSYCHIATRY PATIENTS DIFFER FROM PSYCHIATRY IN GENERAL

Depression and anxiety were the most common main diagnostic groups in CL psychiatry patients. Notably, comorbidity of depression and anxiety with different somatic illnesses and conditions explains this. Excess of these disorders is in line with earlier literature where the most common referral reason has been reported to be suspicion of depression and agitation (10), and the most common diagnoses have been found to be adjustment disorders with depressed mood, organic brain syndrome and alcohol abuse (12).

Especially the diagnostic group of the factors influencing health status and contact with health services (Z00-ZZB) was emphasized in CL psychiatric patients. A plausible reason for this is the general need of CL psychiatric evaluation and intervention arising from acute psychological crises in relation to somatic illnesses. Further, the somatic specialties may often need CL psychiatric collaboration in diverse questions about how to enable the somatic care needed.

The exploration of most common patient groups does not give a comprehensive picture of the patients in medical settings, who need and would benefit from psychiatric evaluation and treatment in the context of medical treatment. As an example, patients with functional disorders or chronic pain patients burden medical services in practically all medical clinics. Typically, these patients find it difficult to agree to a psychiatric consultation that takes place outside the medical setting. Because of this, psychiatric services should be near somatic units. In addition to importance of placement, successful psychiatric treatment of these patients also requires special knowledge of the area. This expertise is a central part of CL psychiatry.

According to our statistics, CL psychiatric units provide services to patients from all age groups. Of essential importance is that in the CL psychiatric services of both hospitals, working age patients formed a significant patient population. Appropriate treatment of patients in this age group is very important from a personal and social point of view. Serious somatic illnesses are often psychosocially more burdensome for younger people than for older. Also, a disability to work primarily due to somatic illness is further complicated and prolonged by mental symptoms and disorders.

There were similarities in the distribution of diagnoses in CL psychiatry between the two hospitals under evaluation. It is notable that the diagnoses at CL psychiatric services differ from those of regular psychiatric outpatient settings where serious mental illnesses like schizophrenia are treated. It is important to accept that somatically ill patients form a significantly different patient group with specific psychosocial needs compared to patients in other psychiatric services. The diagnostic distribution of CL psychiatric patients indicates that psychiatric services in future organizations must be able to provide services not only for severe psychiatric disorders, but also for mental consequences of serious somatic illnesses. In addition, medically ill patients, especially with chronic illness and multimorbid conditions, form an important risk group for psychiatric disorders (6), and this group is relatively easy to reach already in medical settings for effective preventive actions. Recognition and treatment of these patients at an early phase of mental health condition obviously prevents the development of more serious states and thus, in the long run would reduce their later need for psychiatric services. This preventive perspective should also be considered in future plans of psychiatric services.

CONCLUSION

Medical conditions are significantly associated with increased psychological symptoms and psychiatric disorders. More than a third of medical inpatients have psychiatric comorbidity. Thus, somatically ill patients form an important psychiatric patient group and different medical specialties need broad collaboration with psychiatric specialty. Recognition and treatment of these disorders is important because it has a significant impact on health, functioning and quality of life of patients. It also prevents the development of more severe disturbances and reduces costs to society in the long run. In addition, an important role of psychiatric treatment is to help medical personnel to perform their tasks. Treatment of medically ill patients has plenty of special features in which CL psychiatry specializes.

Ongoing health and social services reform in Finland have raised concerns about the psychiatric treatment of medically ill and role of CL psychiatry in future organizations. The reason for this is that in some wellbeing services counties, psychiatric services are not integrated with somatic services. Continual development of somatic treatments and their shift to outpatient medical services may also impair psychiatric treatment of medically ill because of a lack of CL psychiatric specialty and resources in outpatient settings.

Continual cooperation between psychiatry and medical services is needed and must also be guaranteed in the future. This means that psychiatric services should be implemented more than at present in the context of medical settings. In addition, in specialty CL psychiatric units in connection with somatic services, it is necessary to maintain and ensure a high level of knowledge of the area so that consultations of particularly difficult cases will be successful. Otherwise at the individual level, psychosocial suffering associated with somatic illness may increase. Also, the whole service system will be strained and obviously costs to society in the long run will rise.

As a condition for extensive and successful collaboration between somatic and psychiatric services, they have to act under the same roof. Practically the only way is to be in regular contact and collaborate flexibly with personnel of medical units and create contacts with different medical specialties. Familiarity between service providers lowers the threshold for seeking advice. Currently in Finland there are CL psychiatric units or work groups comprehensively in general hospitals. In organizational reform in Finland, it should be ensured that these units will be maintained and enabled to develop further.

Along with maintaining CL psychiatric services in general hospitals, there is also an increasing need to implement know-how and models of operation from general hospital psychiatry to outpatient medical services. This know-how will be especially needed in primary care, where the seriously somatically ill are increasingly treated without hospitalization or after very short hospitalizations. A regular presence and availability of psychiatrists in these services, and also potential to collaborate in cases of somatically ill patients, should be developed along with organizational changes, and taken into account when allocating psychiatric resources.

It is important that in the future there will be enough psychiatrists who have a special competence in general hospital psychiatry. This qualification is needed not only to develop services and keep consultations for medical specialties at a high level, but it is also a prerequisite to officially educate psychiatrists in this area in Finland (16).

In conclusion, in future organizations, comprehensive treatment of medically ill should be guaranteed by maintaining general hospital psychiatry units and by taking know-how of this area more widely to medical outpatient units. This know-how, together with consultation and collaboration practices, will be especially needed in primary care.

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