SAANA ESKELINEN, ATTE VIENO, ELINA YRJÖLÄ, NINA LINDBERG

SOMATIC PHYSICIANS IN PSYCHIATRIC INPATIENT SERVICES: A NARRATIVE REVIEW

ABSTRACT

***Background**: Individuals with severe mental illness experience a high burden of somatic comorbidity, while psychiatrists in psychiatric settings may face challenges in providing adequate somatic care for their patients. Integrating somatic physicians (SPs) into psychiatric inpatient services has been proposed to improve the quality of care.* ***Methods**: This narrative review examines original research on SP involvement in psychiatric inpatient settings by a literature search from studies published between 1995 and 2026.* ***Results**: We identified twelve studies from four decades describing heterogeneous service models. SPs contributed to generating, reviewing and organizing information on patients' somatic health, management of acute and chronic somatic conditions, health promotion and coordination of follow-up and transitions to primary care. Staff and patient experiences were generally positive, highlighting collaboration and improved access to somatic expertise. SP involvement enhanced continuity and organization of care, and strengthened interprofessional collaboration. Findings regarding economic outcomes were limited and inconclusive. Patient-reported outcome measures were not assessed in the included studies. Psychiatric inpatients' need for support in somatic care, continuity of post-discharge somatic care and clarification of professional roles were considered as challenges.* ***Conclusion**: While research on integrated somatic care in psychiatric inpatient settings remains limited, the included studies report promising but scattered findings of integrating SPs to support holistic psychiatric inpatient care. The need remains for further research on the impact of different SP models for care processes and health outcomes. Establishing ongoing interprofessional dialogue and cultures of collaboration emerged as an important topic, both for further research and the practical work of adapting various SP models to different contexts of care.*

KEYWORDS: SEVERE MENTAL ILLNESS, SOMATIC COMORBIDITY, INTEGRATED CARE, QUALITY OF CARE, HEALTHCARE, INPATIENT, GENERAL PRACTITIONER, HOSPITALIST

INTRODUCTION

It is well known that somatic comorbidity shortens the lifespan among individuals with severe mental illness (SMI) (1,2). The interplay between psychiatric symptoms, health-related behaviour, medication side effects, difficulties in self-care, low socioeconomic status and experience of distress and stigma endanger somatic health and wellbeing in this group (3,4). In addition, individuals with SMI face numerous barriers in accessing healthcare and in getting adequate treatment for somatic illnesses (5,6). Accordingly, during their treatment in psychiatric services patients with SMI also present with several acute and long-term somatic illnesses and accumulated risk factors needing attention (7,8).

Attending psychiatrists are, by definition, responsible for the treatment of patients in psychiatric wards, including basic somatic care (9). However, psychiatrists may feel unfamiliar with providing treatment for acute and chronic somatic illnesses (10–12). Time constraints due to daily psychiatric practice and limited possibilities to update general practice skills make the call for holistic care hard to handle.

The inequity related to the burden of somatic comorbidity among individuals with SMI, and shortage of real-world solutions to tackle it, have been evident for a long time. Development of new health service models that would improve status praesens are urgently needed. While an integrated care model of consultation-liaison psychiatry offers care for patients in somatic units (13), somatic resources dedicated explicitly for psychiatric patients exist only sporadically (12,14).

In this review, we focus on an emerging service model in the delivery of healthcare for individuals with SMI: integrating somatic physicians into psychiatric inpatient settings. Research regarding integrated somatic care within psychiatric services has focused primarily on outpatient settings (15,16), whereas the unique review on inpatient studies dates back to 2010 and was able to include only four peer reviewed papers (17).

According to the literature, three types of somatic physicians (SPs) have been involved in psychiatric inpatient care: general practitioners, hospitalists and internists. Of these three categories, general/family practitioners and family doctors (hereafter GPs) work with hospitalized patients to some extent. The second category, hospitalists, usually refers to physicians specialized in hospital medicine, a medical specialty practiced predominantly in North America. Hospitalists typically consult and coordinate care in both somatic and psychiatric wards, and are involved in systems-level improvement in large hospitals (18). Third, physicians specialized in internal medicine have been involved in the treatment of psychiatric inpatients. In this review, we use the term SP to refer to GPs, hospitalists and internists.

PURPOSE OF THIS REVIEW

*SP*s may have potential in improving the quality of care for psychiatric inpatients and in alleviating the workload of psychiatric staff. In this review we summarize, to the best of our knowledge, existing publications of empirical studies regarding SP services in psychiatric inpatient settings. We aim at offering evidence-based support for considering integrated somatic inpatient services in psychiatry and formulating new research questions.

METHODS

During the project, we conducted multiple unsystematic literature searches addressing SPs working within psychiatric inpatient settings. In addition, we conducted reference list screening and forward citation tracking. In order to find possibly missed studies, we also executed literature searches from PubMed, CINAHL, Web of Science and Scopus AI of studies published between 1995-2026 (see *Supplement* for further information).

Since the articles retrieved in the preliminary searches with our search term combinations yielded a large quantity of material with no connection to our scope, we used AI to select suitable search terms. Scopus AI- and ChatGPT-assisted database search term query development resulted in having one category for the role of the somatic physician/model and another for the clinical setting, which was eventually used as the search term combination: *hospitalist* OR gp* OR "general practitioner*" OR physician* OR "generalist physician" OR "medical comanagement" OR "collaborative care" OR "somatic care" OR "medical consultation" OR "somatic consultation" OR "collaborative care" OR "integrative care" AND ("psychiatric inpatient" OR "psychiatric hospital" OR "psychiatric inpatient unit" OR "mental health ward")*. The term gp* was omitted when the searched database rejected it as too short a search term.

We assessed the relevance of publications identified by the searches based on their titles and abstracts. Criteria for inclusion were: 1) original empirical peer-reviewed articles and conference papers, 2) published between 1995–2026, 3) written in English, 4) focused on SP clinical work and its outcomes, 5) within a psychiatric inpatient setting. All study designs were allowed. Policy papers and grey literature were not included. Articles were excluded if they did not meet the inclusion criteria. In unclear cases, the relevance of articles was discussed jointly by the research team.

LITERATURE REVIEW

We identified twelve original studies, including one conference paper (19), examining SP services in psychiatric inpatient settings (*Table 1*). There were two qualitative papers (20,21) and one randomized controlled trial (22), while most were descriptive quantitative studies. Four studies included comparisons of outcomes/features before and during SP involvement (22–25).

Half of the included papers reported a piloting phase of the service, while two (21)(25) examined a modification of a permanent model. The hospital environment was specified as free-standing psychiatric hospital in three studies (21,23,26) and as a psychiatric ward residing in somatic campus in two (27,28). All studies, except two (26,29) were conducted at university hospitals.

After identifying the included studies, we conducted an initial summarization of the studies, focusing on research context, study topics, the scope of the SP role, and findings related to experiences and effects of implementing the SP model (*Table 2*). Through further rounds of inductive content analysis, we identified six relevant themes in the original studies regarding SPs in psychiatric inpatient settings: context, resourcing and role; SP responsibilities in the care process; staff and patient experiences of services; systems-level changes; economic

aspects and challenges in implementing the service (*Table 3*). Our review of these themes is reported in the following sections.

Table 1. Twelve original studies that were included in the review

Author, year	Country	Method	Data source	Setting
Fisher and Roberts 1998 (26)	UK	Descriptive quantitative study.	Medical records from four years of residing patients in the unit*.	GP visiting a psychogeriatric long-stay unit twice a week.
Welthagen et al. 2004 (29)	UK	Descriptive quantitative study.	Medical records from 84 appointments, 18 patient interviews.	GP visiting three acute wards and a small psychogeriatric service three hours per week.
Rubin et al. 2005 (22)	US	Randomized controlled trial.	Records on elements of care and of hospital charges from 55 patients (+ 84 in the control group).	Internist working at two acute psychiatric wards full-time.
Saik et al. 2007 (25)	US	Descriptive quantitative study.	Survey of 24 psychiatrists and 65 nurses. Regulatory compliance reports	Internist responsible for patients' non-psychiatric medical care.
Behroozi et al. 2008 (27)	Canada	Descriptive quantitative study.	Medical records from 40 patients, surveys from 28 staff members.	FD visiting two acute wards and a short-stay area on weekdays.
Goh et al. 2015 (23)	Australia	Descriptive quantitative study.	Medical records from165 patients.	Medical resident working at an acute psychogeriatric ward half-time.
Tatreau et al. 2016 (24)	US	Descriptive quantitative study.	Medical records from 220 patients (+ 232 in the control group).	FP supervising a physician assistant, available remotely five days a week for one unit.
Mc Cracken et al. 2018 (28)	Canada	Descriptive quantitative study.	FD self-report from 104 consultations.	Four FDs from an outreach clinic, available four half-days a week for four wards.
Wolsing et al. 2024 (20)	Denmark	Qualitative study.	Interviews from 17 patients.	Medical doctors conducting health examinations in psychiatric wards.
Bloom-Feschbach et al. 2025 (21)	US	Qualitative study.	Surveys from eight (first round) and five (second round) hospitalists, ten psychiatrists and one nurse practitioner.	Full-time director hospitalist on weekdays and on call. Nine hospitalists, each one day a week at site and four days remotely. When the director hospitalist is absent, hospitalists on call. 24/7 coverage in a large psychiatric facility.
Mårtenson et al. 2025 (19)	Finland	Descriptive quantitative study.	GP self-report from 245 assessments.	Three GPs available for 17 wards part-time.
Nissen et al. 2025 (30)	Denmark	Descriptive quantitative study.	Questionnaires, anthropometric measurements and laboratory tests from 238 patients.	Internist conducting health examinations in psychiatric wards.

Note: GP=general practitioner, FD=family doctor, FP=family practitioner
* At the beginning there were 44 patients at the unit. During the period of four years 21 patients died, 14 new patients were admitted and three discharged

Table 2. Key findings of the included studies (n=12)

Author, year	Key findings relating to the review
Fisher and Roberts 1998 (26)	*SP role*: Assessment and management of physical health problems, with specialist referrals when needed. The SP mainly managed cardiovascular, dermatological, musculoskeletal and ENT conditions, conducted risk screening and health promotion, developed annual health checks and addressed medication overprescription. *Patient experiences of SP*: Patients valued the service, developed trust in the SP, and accepted physical examinations. *Effects of SP model*: Physical health summaries were prepared and regularly reviewed. *SP model feasibility*: The study highlighted the need for dedicated SP services in psychiatric wards and suggested they may be cost effective, particularly in larger units.
Welthagen et al. 2004 (29)	*SP role*: Referral-based service managing a broad range of physical health problems, especially endocrine, musculoskeletal, dermatological, genitourinary and cardiovascular conditions. The SP also managed hypertension and diabetes, identified serious undiagnosed illnesses, provided risk-factor screening, health promotion and educated both patients and staff. *Patient experiences of SP*: Patients were generally satisfied, valuing the SP's professionalism, kindness and accessibility, though some would have preferred their own GP and wanted better access to and information about the service. *SP model feasibility*: The study supported the need for primary care expertise in acute psychiatric units and found a weekly SP clinic to be a feasible model. Demand for the service may exceed available resources, highlighting the need for clear service criteria.
Rubin et al. 2005 (22)	*SP role*: Comprehensive admission assessment, including medical history, physical examination, medication review and communication with primary care providers. The SP developed health maintenance plans, addressed alcohol and tobacco risks, arranged vaccinations, participated in ward rounds, coordinated specialist referrals and supported post-discharge follow-up. *Effects of SP model*: Increased preventive health screening and improved continuity of care through collaboration with primary care physicians and follow-up after discharge. No significant impact on hospital charges or length of stay compared with usual care. *SP model feasibility*: Study demonstrated improved patient care with no overall difference in the cost of care.
Saik et al. 2007 (25)	*SP role*: Full responsibility for psychiatric inpatients' non-psychiatric medical treatment. *Staff experiences of SP model*: Psychiatrists and nurses overwhelmingly preferred the SP model to the previous model in which psychiatrists were responsible for non-psychiatric medical care. *Effects of SP model*: Citations for deficiencies in medical care by regulators were greatly reduced after the adoption of the model. *SP model feasibility*: Data suggests feasibility of SP service model, with potential benefits for quality of care and patient safety.
Behroozi et al. 2008 (27)	*SP role*: Assessment and treatment of common medical problems based on psychiatric staff referrals, with specialist referrals as needed and coordination of follow-up care after discharge through primary care providers. *Staff experiences of SP model*: Psychiatric staff reported satisfaction with SP consultations, daily ward involvement, continuity of care, and participation in patient management. *Effects of SP model*: The SP model reduced specialist referrals and supported collaboration between psychiatric and somatic services. Continuity of care was improved although patients lacking primary care providers remained an issue. The study highlighted ongoing service development and noted that employing GPs in hospitals may affect community GP availability, but also increase recognition of the value of GP services. *SP model feasibility*: Successful implementation of service with high staff satisfaction and observations of shorter length of stay and lower referral rates to specialists.
Goh et al. 2015 (23)	*SP role*: Comprehensive medical assessment on admission, including medical history, physical examination, somatic medication review. Management of new or ongoing physical health problems on the basis of referrals. *Effect of SP model*: Medical assessments increased significantly after implementation. While no clear changes in number of interventions or patient outcomes were found, the study asserts that the model improved management of physical comorbidities and allowed psychiatric staff to focus more on mental healthcare. Collaboration enhanced overall understanding of the needs of geropsychiatric patients. *SP model feasibility*: Achieved freeing up psychiatric staff time and enhanced interprofessional communication. *Other issues raised*: The study highlighted the need for more sensitive measures to evaluate service quality, awareness of comorbidities, outcomes at discharge, inter-specialist collaboration and post-discharge care.

Author, year	Key findings relating to the review
Tatreau et al 2016 (24)	*SP role*: Supervising a physician assistant for admission assessment of all patients and monitoring of patients with somatic comorbidities. Cardiometabolic issues were a significant concern. Facilitating primary care connection and appropriate prescriptions after hospitalization. *Effect of SP model*: Compared with usual care, the study found the model improved detection of hypertension, obesity, hyperlipidaemia, and tobacco use disorder. Patients with hypertension or hyperlipidaemia were more likely to receive appropriate medication at discharge, despite less laboratory testing. *Other issues raised*: Need to evaluate cost-effectiveness through measures such as treatment adherence, post-discharge care and rehospitalization. Proper documentation of chronic illnesses was considered valuable even when treatment was not initiated during hospitalization.
Mc Cracken et al. 2018 (28)	*SP role*: Consultation based on referrals from psychiatrists. Interpretation of laboratory results, clinical guidance, patient examinations and management of acute and chronic physical health problems. Common issues included musculoskeletal, dermatological, gastrointestinal, genitourinary, cardiovascular and respiratory conditions. SPs also coordinated with patients' primary care providers. *Effects of SP model*: Improved communication and continuity of care with primary care services, including follow-up after hospitalization. No effect on length of stay. Study suggests SP model may reduce unnecessary specialist referrals, overtreatment and costs. *SP model feasibility*: SP model is simple to replicate, providing a bridge between acute care and community family practice. *Other issues raised*: Lack of designated primary care providers threatened continuity of care. Further evaluation of cost-effectiveness, including rehospitalization rates, was recommended.
Wolsing et al. 2024 (20)	*SP role*: Somatic consultation in connection to the study, including evaluation and treatment of pre-existing and previously undiagnosed somatic health issues. *Patient experiences of SP model*: Patients valued access to physical healthcare during hospitalization. Interviews highlighted that psychiatric symptoms and treatment side effects could complicate somatic assessments, making timing and communication important. Collaboration between somatic and psychiatric staff was seen as essential for supporting ongoing care. *SP model feasibility*: Patients support SP model, but benefits depend on successful communication, timing of treatment and support of psychiatric staff.
Bloom-Feschbach et al. 2025 (21)	*SP role*: Reviewing new patient history, reviewing physical examinations conducted by nurses, providing consultation on acute and chronic disease management, medications and test results. Evaluation relating to ECT and ketamine treatment. Facilitating care transitions and continuity of care. Communication with patients' family members. *Staff experiences of SP model*: Psychiatrists valued SPs' medical expertise, communication and team-based approach. SPs found the role meaningful, particularly in identifying overlooked medical issues, opportunities for teamwork and learning and helping staff and patients navigate the healthcare system. Some challenges around role division and continuity were addressed through team discussions. *Effects of SP model*: Improved continuity of care, collaboration between psychiatric and medical staff, patient safety initiatives and quality improvement efforts. A partially remote service model supported service provision to multiple sites and enhanced SP work-life balance. The large SP team size influenced handoff continuity and team dynamics. Further research on cost-effectiveness and clinical outcomes was recommended. *SP model feasibility*: Model was feasible and helped address medical needs of psychiatric inpatients.
Mårtenson et al. 2025 (19)	*SP role*: Referral-based assessments and scheduled health checks addressing a wide range of physical health problems, particularly endocrine, cardiovascular, gastrointestinal, dermatological, musculoskeletal and genitourinary conditions. SPs also provided risk-factor screening, health promotion and specialist referrals when needed. *Effects of SP model*: SPs identified a variety of somatic conditions needing attention. SPs estimated their consultations to avoid a number of unnecessary referrals to emergency departments and somatic specialists. *SP model feasibility*: Model is a feasible solution to improve health of psychiatric inpatients and alleviate psychiatrists' workload. Great variety and prevalence of untreated diseases and somatic conditions identified by SP service, with treatment often time consuming.
Nissen et al. 2025 (30)	*SP role*: Somatic assessment in connection to the study, including health checks, screening, risk-factor management and health promotion. Key concerns included cardiovascular risk factors and vitamin D deficiency, with overall physical health found to be poor. *SP model feasibility*: Physical consultations should be routinely offered and adequate follow-up and support provided to ensure identified health problems are addressed. *Other issues raised*: The study recommended including a dedicated somatic health section in discharge summaries to improve communication with primary care.

Note: SP= somatic physician. ENT=ear, nose and throat, GP=general practitioner, ECT=electroconvulsive therapy

Table 3. Themes emerging in the included studies (n=12)

Themes	Key findings relating to the review
Context, resourcing and role of the SP	• mostly acute psychiatric wards in academic hospitals • visiting consultant or permanent member of the team, in one study remote supervisor of PA • from full-time to limited attendance at the wards • consultations, health examinations, screenings
SP responsibilities	• clinical summaries, medication reviews • evaluations of somatic issues • treatment of wide range of somatic illness (most common cardiovascular, gastrointestinal, musculoskeletal, dermatological, genitourinary and endocrine illnesses) • requesting referrals • health promotion • preventative tasks • assistance in navigating the healthcare system, including post-discharge care • education of the staff and patients
Staff and patient experiences of SP services	• psychiatric staff satisfied with consultations, better continuity of care, communication and teamwork, some challenges in delineating duties and from different expectations • SPs appreciated working with psychiatric inpatients and gaining expertise in a specific field • patients appreciated care, accessibility and quality of patient-doctor interaction in the SP service • patients need combined SP and psychiatric staff support due to SMI cognitive symptoms and side effects of psychiatric treatment
Systems-level changes	• improved rate of somatic diagnoses and treatment (but only 1 direct study) • better targeted specialist referrals • enhanced continuity of care • increased intra- and interprofessional collaboration • may energize further development in the quality of care • potential for improving regulatory compliance and patient safety (but only 1 study with limited evidence)
Economic aspects	• limited and inconclusive findings
Challenges in implementing the service	• psychiatric patients' need for support in care relationships • establishing role clarity and continuity of care during hospitalization • continuity of post-discharge care • resourcing the service • measuring impact

Note: SP=somatic physician, PA=physician assistant, SMI=severe mental illness

THEMES

Context, resourcing and role of the SP

SPs operated in a variety of inpatient contexts, which can be differentiated according to the patient population as well as in relation to the duration of the hospitalization. A number of studies were specifically concerned with either adult wards (20,27,28), psychogeriatric contexts (23,26) or a combination (28), with one study context also mentioning adolescents (25). One study noted that patients were of all ages , whereas many did not specify a particular age group (19,20,22,30). Four studies specified they were concerned with acute wards and short-stay areas (22,23,27,29), whereas in contrast the earliest study in the review came from a ward where the mean length of stay was 30 years (26). Three studies reported focusing on mostly patients with schizophrenia (24,26,29), and three on mostly patients with affective disorders (20,22,30).

The staffing and resourcing of the SP service were configured in various ways. Most common was a daily service, either on a part-time basis of 3-4 hours (19,23,27,28), or as a full-time service (22,25) on site or remotely (24). One study provided an example of a 24/7 service model (21). As an alternative to a

daily service, in one study the somatic service was configured as a weekly 3-hour session (29), and in another the SP visited the ward twice a week for an unspecified amount of time (26). Most typically the somatic service was provided by a single physician per facility (19,22,23,26,27,29), but in three studies the service was provided by a team of SPs (21,25,28). One study described a model involving a physician assistant on the ward, supervised by a SP (24). Instead of an established service model, two studies were concerned with arranged health evaluations conducted by visiting SPs (20,30).

Our analysis of the studies revealed different ways in which the SP role was configured. During the hospitalization period, most of the studies mentioned SPs acting as visiting consultants for psychiatric staff regarding the treatment of new or chronic somatic issues (19,26–29). Four studies specifically mentioned psychiatric doctors and nursing staff as the initiators of these consultations (19,27–29), with one of them also mentioning patients themselves as initiators (29). In three studies SPs were working at the wards, hence involvement in somatic issues was most probably requested without consultation, e.g. during daily hospital rounds (21–23). In one study, internists took full responsibility for the non-psychiatric medical care of inpatients (25). It is useful to appreciate that the role of the SP might be conceptualized in different terms, on a continuum from a visiting consultant to patients' attending somatic physician at the ward.

Responsibilities of the SP in the care process

Generating, reviewing and organizing information on patient health

Many of the studies noted how the SP service had improved the quantity, quality and organization of information relating to patients' somatic status. A central first step in achieving this was arranging medical assessments with SPs. These assessments were arranged in various ways, most commonly based on referrals by psychiatric staff or patient requests (19,21,27–29). In some settings, all admitted patients were offered an assessment on admission (23), a process which sometimes involved communicating with the patient's primary care provider as well (22). In one study the evaluation on admission was presumably carried out by a physician assistant supervised by the SP (24), and in another the SP would review the history of new patients and the results of physical examinations conducted by nurses (21). Information on patients' medical status could also be collected by scheduling examinations or health checks (19,26). Two studies were based on somatic assessments offered to inpatients in connection to the study (20,30).

Beyond their role in forming an initial picture of inpatients' somatic health based on assessment and review of medical history, SPs were noted as working to develop accessible summaries of physical health problems (26), reviewing medication (22,26) and drawing up plans relating to health maintenance (22). One study provided a detailed account of an SP working with a physician assistant to assign diagnoses for patients fulfilling criteria (24).

Diagnosis and treatment of somatic illness during hospitalization

SPs engaged in the diagnosis and treatment of a wide range of both acute and chronic somatic illnesses, although different categorizations of conditions in the studies complicated the analysis. Cardiovascular illnesses were reported as commonly addressed by SPs in the studies (19,24,26,28,29), as were musculoskeletal and dermatological conditions (19,26,28,29). Gastrointestinal (19,26) and genitourinary (19,28,29) conditions were also reported as a common issue of concern in multiple studies. Ear, nose and throat (26), respiratory (28) and endocrine issues (19) were reported as a common concern in single studies. In relation to chronic diseases, one study specifically mentioned poorly controlled hypertension and diabetes; this study also noted that the SP was engaged with diagnoses relating to critical health issues, such as a previously undiagnosed breast tumour and a severely anaemic patient requiring an emergency blood transfusion (29). Another study described several life-threatening cases with SP involvement (e.g. acute cardiovascular presentations) (21). One study mentioned the overprescription of somatic medication as a relatively common issue for the SP to encounter at the ward (26).

Health checks and health promotion

Studies also concerned the ways in which somatic physicians engaged in screening and interventions relating to risk factors and health promotion (19,20,22,26,29,30). This was achieved particularly through more or less comprehensive health checks conducted by the SP (19,20,22,26,30). In studies where details were given, two studies mentioned that a comprehensive medical history was obtained from the patients, and the physician conducted a physical examination (22,26). Another study mentioned blood tests, measurement of vital signs and the use of a health questionnaire (30).

Cardiovascular risk factors, especially smoking, were specific concerns in several studies (22,24,26,30). Two studies mentioned the role of the SP in nicotine replacement therapy (22,24). One study gave a detailed account of the somatic physicians' health promotion activities, including drawing up

alcohol and smoking cessation plans, lipid screening, organizing the collection of stool cards, mammograms, pap tests, prostate examinations and arranging for vaccinations (22). Elevated BMI was mentioned in two studies (24,30), and vitamin D deficiency in one (30). Health promotion could involve educating patients on their specific illnesses, such as the management of diabetes, as well as addressing patients' anxieties relating to somatic health and advising them on exercise (29).

Coordination and the continuity of care

Finally, some of the studies pointed to the role of the SP in coordinating communication and the continuity of care. This involved both onward referrals to specialists as needed (19,22,26,27), and communicating with the patients' primary care provider during the hospitalization period (22,24,28). One study mentioned communication with the patients' family members (21). Additionally, SPs were involved in facilitating follow-up care after discharge (27), which might necessitate further communication with the patients' primary care provider (22,24). In one case, the physician supervising the somatic team on the wards also provided outpatient primary care in the same facility, providing a primary care contact for patients discharged without a primary care physician (24).

Staff and patient experiences of SP services

Staff experiences: satisfaction, teamwork and points of friction

Three of the studies were concerned with staff experiences related to a SP service in psychiatric inpatient settings (21,25,27). Behroozi reported psychiatric ward staff respondents to a survey as being highly satisfied with the timeliness and appropriateness of consultations, provided by the SP on daily visits to the wards (27). Staff respondents were also highly satisfied with the continuity of care in relation to the service. A lesser but still notable proportion of respondents were very satisfied with the SP's communication and involvement of staff related to patient management plans (27).

Saik investigated the experiences of psychiatrists and nursing staff regarding the implementation of an SP model where internists took full responsibility for the non-psychiatric medical care of psychiatric inpatients, finding overwhelmingly positive experiences among both groups (25). Psychiatrists preferred this model because it reduced their concerns of missing serious medical problems, allowed them to focus on psychiatric issues and reduced their feeling of exposure to legal risks. They described their working relationship with the SPs as excellent or good. Nurses felt more comfortable with SPs addressing medical issues, and found it simpler to contact the physician tasked with addressing the problem in the SP model (25).

Bloom-Feshbach examined in detail the experiences of both psychiatric staff and SPs themselves in relation to a 24/7 somatic physician service provided to a psychiatric hospital by a team of hospitalists, finding a variety of positive experiences reported by both psychiatrists and SPs (21). They reported that psychiatrists valued not only the medical expertise provided by the SPs, but also their proactive communication and the possibility of engaging in team-based problem solving. The authors reported SPs as taking pride and finding meaning in their work role, particularly in relation to attending in detail to medical problems which might have otherwise been missed. SPs saw their role not only as contributing expertise in clinical medicine, but also helping both patients and psychiatrists in navigating the health system to meet the, often complex, needs of psychiatric inpatients. SPs valued the way in which the role allowed them to expand the scope of their practice, allowing them to learn from their psychiatric colleagues and gain clinical experience in a new setting. They also valued the work-life balance and support for family life afforded by the hybrid SP work in psychiatry, particularly in relation to opportunities to work fewer weekends, more day shifts and the ability to work remotely. Both psychiatrists and SPs valued opportunities for teamwork and found meaning in caring for a vulnerable patient population (21).

Bloom-Feshbach also noted points of friction in interdisciplinary teamwork. In the implementation of the new hybrid model with several SPs, frequent handoffs between the team of SPs could negatively impact continuity with patients and teams. The high level of medical support led some psychiatrists to feel uncertain of the division of duties between psychiatrists and SPs. Psychiatrists and SPs had different expectations in some areas of care, such as the adequate patient history and physical examination on admission. Furthermore, in their setting, nurse practitioners were required to be supervised by physicians, and the division of this responsibility was another potential source of friction. SPs sought to mitigate these issues by engaging in discussions with nurses and psychiatrists to determine issues of anticipated length of stay, the scope of medical issues to pursue during the admission period and outpatient follow-up (21).

Patients' experiences: accessibility, trust and the need for ongoing support

Welthagen interviewed patients seen by the SP during their inpatient stay, finding very positive experiences (29). All the interviewed patients were satisfied with the care provided

by the SP, whom they described as professional, kind and understanding. Most of the patients seen by the SP also felt that their physical needs were taken seriously by their psychiatric teams. Half of the patients stated that they preferred to see the SP rather than their own general practitioner during their hospitalization, due to ease of access and easy communication between the SP and ward psychiatrists. Some patients nevertheless preferred to see their own GP, due to their greater familiarity with the patients' health. Regarding improvements to the SP service, some patients suggested a greater number of weekly clinics and better information regarding access to the service for new patients (29).

Wolsing interviewed hospitalized psychiatric patients who had received a health examination by the SP (20). Similar to Welthagen, they found that patients held a mostly positive attitude to the service, with many of them perceiving advantages of the appointment relating to issues such as evaluating and treating pre-existing medical conditions and confirming the absence of somatic disease. The interviews revealed how patients' acute psychiatric symptoms during psychiatric treatment need to be considered in the timing of health checks. Memory impairment made recollecting the medical consultation difficult for many of the patients. The interviews highlighted the importance of the patient-doctor relationship for patients' experiences, with the doctors' attentiveness, empathetic listening and prior preparation relating to understanding the patients' situation emerging as significant. Patients expressed a wish for support from staff in initiating somatic assessments and treatment by the SP, as well as broader support in relation to issues such as physiotherapy, dietary consultations and smoking cessation. The interviews also pointed to patients' dependence on staff proactivity in sustaining the continuity of somatic treatment (20).

One further study included a short note according to which the SP service was valued by patients, who were able to develop trust in the physician, which allowed for procedures such as intimate physical examinations (26). This was in contrast to a prior model in which somatic care was entrusted to junior doctors on six-month assignments.

Systems-level changes

Improving rates of diagnosis and treatment

Three of the studies were concerned with comparisons between an implemented SP model and usual treatment (22–24). One of these studies concerned a service model where a physician assistant was supervised by the SP, demonstrating the achievement of higher rates of diagnosis for patients fulfilling criteria for diagnoses of hypertension, obesity, hyperlipidaemia and tobacco use disorder (24). On discharge, patients in the intervention group diagnosed with hypertension or hyperlipidaemia were more commonly on appropriate medication, suggesting the information collected by the SP and their assistant was used in adopting appropriate medical treatment (24). Another study did not concern diagnoses, but showed how the implementation of the SP model led to lipid screening, stool card collection, mammograms, pap tests and prostate examinations, all of which were practically missing before the implementation of the model (22). One study was concerned with the number of various medical interventions as well as patient outcomes prior to and after the implementation of the SP service (23). This study found practically no difference in interventions and outcomes, but the authors propose that this may be due to insufficiently sensitive indicators (23).

Better targeted specialist referrals

Three of the studies proposed that the SP service might avoid unnecessary referrals to specialist services (19,27,28), with one of these connecting this to a potential reduction of overtreatment and care costs (28). One of these studies demonstrated a decreased rate of referrals to specialists after the initiation of the SP service, noting also that referrals by the SP might be more appropriate than those by psychiatric staff, thus improving the overall use of specialist services (27).

Continuity of care

Many of the studies were concerned with efforts to improve the continuity of care between the psychiatric wards and primary care. SPs' efforts in communicating with primary care providers were cited as improving the continuity of care through better follow-up of medical issues identified during hospitalization (22,24,27,28). One study asserted that the treatment of physical comorbidities in the hospital ward was achieved with no loss in the continuity of care (23). Maintaining a list of patients with attached summaries and task lists was noted as a measure for enhancing continuity of care (21). SPs were also noted as taking an active role in navigating the health system, particularly in relation to emergency services and general hospital physicians (21). In the case of long-stay inpatients, one study noted that the distance to primary care can only be remedied by dedicating the resources of a primary care specialist to this patient group (26).

Increased intra- and interprofessional collaboration

Some of the studies examined ways in which the implementation of a SP service led to increased intra- and interprofessional collaboration. One study mentioned the education provided by SPs to psychiatric staff in relation to specific patients and their medical conditions (29). Another study related practical experiences of the somatic service, noting that psychiatric staff had been better able to focus on psychiatry after the implementation of the service, although these observations were not based on a systematic analysis (23).

Several of the studies noted how the practical work of implementing a SP service had helped to create new infrastructure and catalyse a culture of collaboration between somatic and mental health practitioners, with ongoing learning between somatic and psychiatric staff (21,23,27). In one study, the somatic service was described as reorienting geropsychiatric staff to develop a more comprehensive understanding of patients' somatic needs, with the team engaging in discussions which had heightened awareness of medical interventions in relation to dementia patients and types of the more frequently necessary interventions (23). More collaborative cultures were described as holding potential for the practitioner-driven development of further initiatives, such as shared care models in the community (27), as well as scholarly collaboration (21).

Job quality and staff retention

One US study noted physician burnout to be prevalent in general internal medicine (21). In this context, the study noted that a SP service for psychiatric inpatients utilizing virtual medicine can provide a more sustainable job quality for SPs, allowing for work-life balance and improving the meaningfulness of work through opportunities for interprofessional communication and involvement of the patients' family in care. This in turn can benefit the retention of SPs in psychiatric services (21).

Regulatory compliance and patient safety

One study compared the amount of citations by regulators related to deficiencies in medical care at the studied hospital, finding the amount of these citations to have fallen from 10 to one when comparing periods before and after the implementation of the SP service model (25).

Further improvement, formalization and expansion

Some of the studies involving newly implemented SP services noted how experiences of these services had sparked further improvement efforts. SPs were described as involved in new initiatives relating to patient safety, quality improvement and electronic medical record optimization in the mental health settings (21). In a psychogeriatric context, the experience of utilizing a SP was reported as enabling the consultant geriatrician to be present on ward rounds, while links between psychogeriatric and geriatric care were strengthened (23). One issue is developing ways to measure the effects of newly implemented services, which can involve measuring medical outcomes at discharge, inter-specialist collaboration and/or post-discharge care (23).

Some of the studies noted efforts toward formalization and expansion of the SP service, such as in the formalization of a somatic consultation service so that it might be offered to more departments (27), or in the collaborative creation of new clinical guidelines, such as those relating to obesity medication prescriptions (21). The study by Bloom-Feschbach noted that the implementation of the service in a virtual mode held potential for its expansion into multiple sites across the psychiatry line, which would also support the standardization of the medical protocols of the service (21). In addition, one study reported collaboration with the emergency department to connect patients without primary care physicians with these contacts (27).

Economic aspects

Two studies in the review examined the costs of the SP service (22,24). Rubin found no difference in patients' hospital charges between the usual care group and the SP group (22). The other study described an SP service where less laboratory tests were taken compared to treatment as usual, while nevertheless achieving simultaneous higher rates of treatment for hypertension and hyperlipidaemia, interpreting this outcome as a cost saving (24).

In evaluating effects of the SP service on patients' length of stay at the hospital, one study showed a decrease of length of stay during the study period, however, the author reasoned that the effect was probably not solely attributed to SP services (27). Two other studies found no difference (22,28).

Challenges in implementing the service

The studies uncovered a variety of both potential and practically encountered issues worth considering in the implementation of SP services for psychiatric inpatients.

Supporting psychiatric patients in care relationships

As previously noted, one study provided significant in-depth information on psychiatric inpatients' experiences of medical assessments by an SP during their hospitalization (20). Psychiatric inpatients often experienced memory and cognitive problems complicating the treatment of their somatic issues. Attaining trust between SPs and patients was noted as dependent on the quality of interaction in patient-doctor relationship. Additionally, the support of psychiatric staff emerged as highly important in initiating and following up on somatic assessments, including a preparedness to coordinate the timing of psychiatric and somatic treatment (20).

Continuity and role clarity during hospitalization

One of the studies provided details of challenges in implementation related to continuity and role clarity (21). In the case of a team of SPs providing the service, the impact of the frequency of patient handoffs between these SPs needs to be considered, and the size of the team has an impact on team dynamics. Virtual medicine can be employed in establishing the SP service, but this entails recognizing its limitations, which can be mitigated by a hybrid model with collaboration between on-site and virtual clinicians. Role clarity between specializations and professions needs to be established, necessitating ongoing discussion between psychiatric staff and SPs, as well as between physicians and nurses, in order to avoid problems such as medication reorders and missed lab results. This involves practical work such as establishing shared conceptions for proper procedures regarding patient history and examination on admission (21).

Continuity of post-discharge care

The post-discharge connection to primary care was noted as a problematic point in two of the studies, with patients' lack of designated primary care providers jeopardizing the continuity of care (27,28). One study recommended the dedication of a section in the epicrisis to the somatic status of the patient to improve handovers from hospitals to primary care (30).

Resourcing

The resourcing of the SP service is potentially more feasible when patients with physical comorbidities are concentrated, and less so in contexts where patients with fewer physical health problems are dispersed in small units (26). When the service is implemented, demand may exceed resources, requiring the adoption of service criteria, disappointing some patients (29). Particular contexts may present a great variety and amount of untreated diseases and somatic conditions, treatment of which may be time consuming even for SPs (19). Finally, if GPs are in short supply, utilizing them in hospitals may have an impact on community services, although this may also serve to improve recognition of the value of skilled generalists (27).

Measuring impact

Several of the studies noted a need for more information regarding the measured effects of the implemented SP service models (21,23,24,28). A variety of potential measurements relating to different points in care processes were proposed in the studies.

In relation to the hospitalization period, one study proposed prospective studies measuring length of stay, transfers to local emergency departments and number of patients sent out for examinations, as well as clinical metrics such as diabetic and blood pressure control (21). Another study noted that rare events such as emergency medical transfers may not function as sufficiently sensitive indicators of the effects of the SP service (23). This study proposed measuring medical outcomes at discharge, as well as inter-specialist collaboration, such as increased communication between disciplines and increased awareness of comorbidities (23).

Beyond discharge, some of the studies proposed measuring post-discharge care (23,24). The rate of rehospitalization was noted as an interesting measure in multiple studies (21,24,28). Some studies noted the overall importance of developing an informed understanding of the potential cost savings and cost-effectiveness of SP services for psychiatric inpatients (24,28).

DISCUSSION

Since the previous review examining SPs within psychiatric inpatient context from 2010, the topic has gained some interest, e.g. four publications in 2020s, indicating the relevance of this study field. Over the past thirty years, major changes in the care of individuals with SMI have taken place, including deinstitutionalization, task shifting of SMI outpatient care from psychiatrists to GPs and the introduction of second-generation antipsychotics. Despite these developments, the studies in our review highlight persistent challenges regarding somatic health and care of patients with SMI over four decades: multimorbidity, under-resourcing of services, difficulties in accessing primary care, discontinuities between secondary and primary care and the importance of improving service quality.

Range of SP service models

This review identified a range of models for integrating SP services into psychiatric inpatient settings. These ranged from full-time, even 24/7 availability, to limited attendance via electronic medical record contacts and phone calls (19,21). The most common model was SPs consulting inpatients' somatic concerns, although health examinations and screenings were common SP activities as well. In one study, the SP remotely supervised a physician assistant (24). The variability of service models reflects a variability of care settings in different healthcare systems.

SP role in care

SPs were shown to execute numerous tasks contributing to the evaluation, treatment and prevention of somatic illness, as well as improving continuity of care. SPs also generated clinical summaries, reviewed medications, facilitated referrals and assisted both patients and psychiatric staff in navigating the healthcare system. Continuity with primary care is an area in which SPs have contributed, even though potential for improvement seems to remain (27,28).

Most studies in this review assessed the spectrum of somatic illnesses encountered in consultations and health checks by SPs. The range of somatic problems encountered was wide, and diagnoses fell predominantly in the category of general practice, aligning with the extensive literature on somatic comorbidity in SMI (4,31). The somatic care of psychiatric inpatients is complicated by both SMI itself as well as the process and effects of psychiatric treatment (20). This places great demands on physicians entrusted with managing and coordinating psychiatric inpatients' somatic care.

Psychiatrists have been encouraged to take responsibility of the somatic care of their patients (32,33), but this can be impractical, as they often lack opportunities for maintaining up-to-date general medical skills. A lack of appropriate equipment and infrastructure forms one constraint (11,26), as does time pressure relating to a shortage of psychiatrists (32). Gathering information from medical records, examining patients, diagnosing and treating somatic illnesses and coordinating care pathways towards primary care are demanding and time-consuming tasks even for experienced GPs (19). Younger doctors specializing in psychiatry have typically been relied upon in somatic issues emerging in psychiatric wards (10). In Finland, doctors specializing in general practice and rotating irregularly for a couple of months in psychiatry have been a valuable resource in the services. However, lack of continuity and difficulties in engaging in long-term quality improvement is problematic in this kind of task allocation.

Experiences of SP services

In studies evaluating experiences, both staff and patients appreciated SPs for their medical expertise and for the support they offered in patient care. Effective collaboration between psychiatric and somatic staff was seen as essential, particularly in managing fluctuating psychiatric states, coordinating psychiatric and somatic treatments and ensuring follow-up when patients themselves lack the capacity to do so (20). Staff also appreciated new opportunities for teamwork and shared learning (21,23,27), whereas SPs themselves reported satisfaction derived from working with vulnerable patients and gaining special expertise (21). Distributing the workload of caring for psychiatric inpatients between psychiatrists and SPs may help create space for patient-doctor relationships founded on communication, trust and familiarity with the patients' situation.

Different contexts of SP service

Most studies in this review focused on acute psychiatric wards. Nevertheless, the need for somatic care is evident also in the case of long term-psychiatric inpatients, nowadays typically in forensic units. Interestingly, only two studies in this review reported activities from forensic units (19,25). In the UK, the availability of GPs in forensic units has been established, at least to some extent (34). The wide work fields of SPs and the high level of satisfaction reported by both patients and the staff suggest that the burden of somatic problems requiring attention is substantial in both acute and long-term psychiatric inpatient care.

Residing in a general hospital campus bears a promise of flexible collaboration with other medical specialties, the availability of a hospital's medical emergency team and 24/7 diagnostic services. Interestingly, both Canadian studies were conducted in such an environment and reported high contentment of the SP service and improvement/decrease in referrals to medical specialties (27,28). This suggests that somatic (sub) specialty consultants in general hospitals can be distant from the daily practice in psychiatry, including roles such as education and patient safety/quality improvement. In contrast to dedicated SPs, somatic (sub)specialists would also lack opportunities to deepen their expertise in relation to psychiatric patients (21). They would also be missing the wide spectrum skillset of a GP.

Implementing and developing new services

Introducing SP services requires careful design, including clear delineation of roles and responsibilities. However, the reviewed studies emphasize implementation as an ongoing, interprofessional process (see also 35,36). As practical issues emerge, ongoing discussion is necessary in developing the service, tackling emerging issues and mitigating frictions (21). This process can in itself foster a collaborative culture of care between different professionals, which in turn serves to mitigate implementation issues and to drive further development (21,23,27). In the phase of establishing permanent SP services within psychiatric settings, formulating and reassessing policies and protocols accordingly is worthwhile.

User involvement is critical in shaping services, although engaging psychiatric inpatients in research remains challenging due to symptom severity, consent processes and resource constraints. Forensic and involuntary patients may be particularly difficult to include in study groups (20,30). In addition, limited participation rate in the most recent Danish study highlights the need for improved strategies in enrolling participants (30).

Economy and effectiveness

In the light of constraints on healthcare resources, demonstrating cost-effectiveness for new initiatives appears increasingly important. While hospitalist models in somatic inpatient care suggest potential benefits such as reduced length of stay and unnecessary testing (37,38), these outcomes are difficult to capture in small-scale studies of SP services. Developing sensitive indicators for patient outcomes is a challenge (23). One possibility could be to evaluate opportunity costs by "time savings", as SP involvement can free psychiatrists' time and enable more efficient use of specialist referrals. As shown by Mårtensson (19), two-thirds of SPs' patient assessments took longer than half an hour, demonstrating the time-intensiveness of somatic care.

Possible drawbacks of the SP model should be considered. Concerns about narrowing psychiatrists' clinical scope appear less relevant given the shortage of SPs in psychiatric services. Another concern is the possibility of increased somatic investigations by SPs leading to somatic overtreatment and inappropriate resource allocation from psychiatry to somatic care.

STRENGTHS AND WEAKNESSES IN THE REVIEW

The primary strength in our review is in developing a comprehensive overview of the research themes identified in the diverse and scattered studies on SPs in psychiatric inpatient services. The most recent review we identified dates to 2010 and provides only a limited descriptive analysis of its findings (17). In addition to executing a thematic analysis, we were able to include four recent publications from 2020s (19–21,30). Revealing the scarcity in this research field by being able to identify only twelve papers over the past thirty years is a significant finding in itself.

A flexible search strategy incorporating multiple literature retrieval methods allowed us to identify, to the best of our knowledge, the available empirical studies published over the past four decades, across diverse psychiatric inpatient settings and healthcare systems, despite substantial variation in research methodologies and terminological usage.

However, heterogeneity and a limited number of typically small-scale studies, executed often in pilot phases of the service and in diverse health care systems prevent the creation of an exhaustive picture of the phenomenon and can surely be considered as weaknesses. In addition, the large time span in the identified articles downgrades the contemporariness of this review.

Regarding weaknesses, the absence of findings regarding direct, individual patient-reported health outcome measures is evident. In addition, it is plausible that included studies were able to show just a narrow view of the SP activities and effects in the healthcare ecosystem, leaving probably meaningful tasks of improving the quality of care, patient safety and work flows unreported and unpublished.

In generalizing the findings of our review, caveats especially related to features in healthcare systems need to be considered. Half of the included studies came from North America and Australia, with diverse healthcare systems compared to Europe. Especially in the US, financing/billing structures, professional roles (e.g. hospitalist, physician assistant) and mandatory procedures (e.g. before neuromodulation therapy and on hospital admission) differ from European ones. In addition, the role of GP and patients' attachment to her/him differs even across Europe. For instance, in some countries primary care GPs are sometimes involved in the treatment of her/his patient during the hospitalization (39).

FUTURE DIRECTIONS IN RESEARCH

Several phenomena occur simultaneously in and outside healthcare settings where the effects of an intervention ought to be studied, leading to difficulties in evaluating the effects of a single piece in the puzzle. However, in considering new healthcare services, scientific foundations are mandatory and consequently, the justification to study this topic further is evident.

Measuring the effects of SP involvement for inpatients' somatic illnesses and risk factors is a challenging exercise, but could be possible in large scale, permanent settings established over long time frames. In addition to outcomes regarding patients' health and wellbeing, nuanced evaluation of multiprofessional collaboration, including hidden work and effects that arise from the embedded presence of a SP in psychiatric services, is fundamental in order to understand and foster probable positive effects on patient care and work wellbeing. The importance of research of user experience in relation to feasibility and communication can't be overestimated.

Somatic patient safety in psychiatric inpatient settings is surprisingly under-researched, e.g. only infection prevention has gained minimal interest so far (40). Examining SPs´ roles and impact in patient safety outcomes is a meaningful direction in research as well.

To our knowledge, permanent SP models in psychiatric inpatient settings exist sporadically (14,39,41,42). Descriptions of these "hot spots", and of possible "hidden gems" as well, especially concerning the formation phase and resourcing, would be beneficial.

All except for two (26,29) studies in this review were made at university hospitals, presumably reflecting scientific infrastructure, know-how and incentives available in academic environments. Interestingly, the majority of the first authors of the included studies were non-psychiatrists. The study of SPs in psychiatry necessitates the involvement of services users, SPs themselves and collaboration between medical and other academic disciplines.

IMPLICATIONS

The amount of high-quality research and guidelines produced over the decades on somatic comorbidity in SMI is overwhelming, but modifications in psychiatric services to address this Gordian knot remain few. Hence, both users of the psychiatric services and their carers, as well as clinicians and administrators, have suggested engaging somatic expertise within mental health settings in order to diminish health disparities in individuals with SMI (12,43). The Lancet Psychiatry Physical Health Commission recently called for more efforts in psychiatric settings to deliver holistic care: effective and feasible lifestyle interventions and prevention/management of psychotropic medication side effects (44,45). Health examinations and screenings for medication side effects and risk behaviours make needs for preventative interventions visible. Typical obstacles for implementation of holistic care, such as shortage of resources, lack of training and unclear roles and responsibilities highlighted by the Commission, could be alleviated to some extent by the involvement of SPs.

Reflecting the findings of this review, and national/international experiences (34,39,42), it seems that GPs may have the most suitable skillset for the task of fostering somatic services and systems-level improvement in psychiatric inpatient settings. Management of various acute and chronic, often complex somatic problems, as well as prevention of diseases and health promotion are the core competencies of a GP (46). GPs are often aware of primary and secondary care pathways and able to ease transitions between secondary and primary care as well. In addition, collaborating with citizens and healthcare partners from different backgrounds is familiar for GPs metaphorically "speaking several languages".

Ultimately, several possible models exist in bringing SPs to psychiatric inpatient settings for the best of patients and the staff. The implementation of such models needs to consider differences in contexts of care and national healthcare systems. In our review, establishing ongoing interprofessional dialogue in a collaborative culture of care quality improvement emerges as the key to developing SP services tailored to the needs of psychiatric inpatients.

**

Use of generative AI in the article process: AI-assisted search term creation has been described in the methods section. Additionally, Microsoft Copilot was used to support the summarization process for the Abstract, and to streamline language and reduce word count of the manuscript.

Supplementary Material

Supplementary data are available at Psychiatria Fennica online.

Authors

Saana Eskelinen[1]
Atte Vieno[2]
Elina Yrjölä[1, 2]
Nina Lindberg[1]

[1]University of Helsinki and Helsinki University Hospital,
Department of Psychiatry, Helsinki, Finland
[2]University of Helsinki, Faculty of Social Sciences, Sociology

Correspondence

Saana Eskelinen
saana.eskelinen@hus.fi

References

1. Kugathasan P, Wu H, Gaughran F, Nielsen RE, Pritchard M, Dobson R, et al. Association of physical health multimorbidity with mortality in people with schizophrenia spectrum disorders: Using a novel semantic search system that captures physical diseases in electronic patient records. Schizophrenia Research. 2020;216:408–15.

2. Keinänen J, Mantere O, Markkula N, Partti K, Perälä J, Saarni SI, et al. Mortality in people with psychotic disorders in Finland: A population-based 13-year follow-up study. Schizophrenia Research. 2018;192:113–8.

3. De Hert M, Cohen D, Bobes J, Cetkovich-Bakmas M, Leucht S, Ndetei DM, et al. Physical illness in patients with severe mental disorders. II. Barriers to care, monitoring and treatment guidelines, plus recommendations at the system and individual level. World Psychiatry. 2011;10(2):138–51.

4. Firth J, Siddiqi N, Koyanagi A, Siskind D, Rosenbaum S, Galletly C, et al. The Lancet Psychiatry Commission: a blueprint for protecting physical health in people with mental illness. The Lancet Psychiatry. 2019;6(8):675–712.

5. Björk Brämberg E, Torgerson J, Norman Kjellström A, Welin P, Rusner M. Access to primary and specialized somatic health care for persons with severe mental illness: a qualitative study of perceived barriers and facilitators in Swedish health care. BMC Fam Pract. 2018;19(1):12.

6. Malogianni E, Alenezi MF, Renwick L. Barriers and facilitators of accessing primary healthcare for patients with severe mental illness: a mixed-methods systematic review using framework synthesis. BMC Psychiatry. 2025;25(1):1131.

7. Eskelinen S, Sailas E, Joutsenniemi K, Holi M, Koskela TH, Suvisaari J. Multiple physical healthcare needs among outpatients with schizophrenia: findings from a health examination study. Nord J Psychiatry. 2017;71(6):448–54.

8. Busk N, Jentz C, Terkildsen MD, Kennedy H, Sandbæk A, Andersen A, et al. Somatic health perception among in-patients with severe mental illness: a comparison of self-rated and clinically assessed health. Nord J Psychiatry. 2026;80(1):18–26.

9. Moore S, Shiers D, Daly B, Mitchell AJ, Gaughran F. Promoting physical health for people with schizophrenia by reducing disparities in medical and dental care. Acta Psychiatr Scand. 2015;132(2):109–21.

10. Robinson L. Are psychiatrists real doctors? A survey of the medical experience and training of psychiatric trainees in the west of Scotland. Psychiatr Bull. 2005;29(2):62–4.

11. Kohn L, Christiaens W, Detraux J, De Lepeleire J, De Hert M, Gillain B, et al. Barriers to somatic health care for persons with severe mental illness in belgium: a qualitative study of patients' and healthcare professionals' perspectives. Front Psychiatry. 2022;12:798530.

12. Ambreen M, Canning C, Lo B, Agarwal SM, Burhan AM, Castle D, et al. Strengthening the delivery of integrated care for individuals experiencing serious mental illness within mental health settings: a qualitative description of health provider perspectives. BMC Psychiatry. 2025;25(1):129.

13. Pesonen, Tuula; Hakko, Helinä; Härkönen, Leena-Kaisa; Räsänen, Sami. Consultation-liaison psychiatry in Finland today and challenges for the future. Psychiatria Fennica. 2022;53:240-51.

14. De Lasa C, Lam E, Mesfin E, Ramirez A, Chambers S, Tajirian T. Building capacity for integrated health care—nursing education initiatives in a Canadian mental health setting. BMJ Open Qual. 2026;15(1):e003595.

15. Rodgers M, Dalton J, Harden M, Street A, Parker G, Eastwood A. Integrated care to address the physical health needs of people with severe mental illness: a mapping review of the recent evidence on barriers, facilitators and evaluations. International Journal of Integrated Care. 2018;18(1):9.

16. Ambreen M, Zhang S, Melamed OC, Canning C, Lo B, Agarwal SM, et al. Strengthening the delivery of integrated physical health care for adults experiencing serious mental illness: a scoping review of interventions in mental health settings. Front Health Serv. 2025 Jun;5:1570100.

17. Cerimele JM, Strain JJ. Integrating primary care services into psychiatric care settings: a review of the literature. Prim Care Companion J Clin Psychiatry.2010;12(6):PCC.10r00971.

18. Kulkarni SA, Wachter RM. The hospitalist movement 25 years later. Annu Rev Med. 2024;75(1):381–90.

19. Mårtenson K, Kojoukhova M, Hallvar-Halonen E, Talaslahti T, Honkasalo M, Rehnberg-Laiho L, et al. General practitioner hospitalists in psychiatry – may we help you? Eur Psychiatr. 2025;68(S1):S906–7.

20. Wolsing SK, Hjorth P, Løkke A, Hilberg O, Frølund JC. Experiences of receiving a medical consultation – an interview study among hospitalized psychiatric patients. Nord J Psychiatry. 2024;78(7):583–90.

21. Bloom-Feshbach K, Berger RE, Evans AT, McNairy ML, Lopez LV, Parish SJ. Hospitalists caring for behavioral health inpatients: a hybrid consultation model. J Gen Intern Med. 2025;40(16):4051–8.

22. Rubin AS, Littenberg B, Ross R, Wehry S, Jones M. Effects on Processes and costs of care associated with the addition of an internist to an inpatient psychiatry team. Psychiatr Serv. 2005;56(4):463–7.

23. Goh AMY, Westphal A, Daws T, Gascoigne-Cohen S, Hamilton B, Lautenschlager NT. A retrospective study of medical comorbidities in psychogeriatric patients. Psychogeriatrics. 2016;16(1):12–9.

24. Tatreau JR, Harris S, Sheitman B, Steiner BD. Cardiometabolic Assessment, diagnosis, and treatment of chronic medical illnesses during an inpatient psychiatric hospitalization: colocated medical care versus treatment as usual. Prim Care Companion CNS Disord. 2016;18(6).

25. Saik S, Sheitman BB, Mann S, Stelle WW, Osberg JW. Providing medical care in state psychiatric hospitals. N C Med J. 2007;68(2):95–8.

26. Fisher N, Roberts J. Primary health care service for long-stay psychiatric in-patients. Psychiatr Bull. 1998;22(10):610–2.

27. Behroozi D, Mazowita G, Davis MD. Collaboration in caring for psychiatric inpatients: Family physicians team up with psychiatrists and psychiatric nurses. Can Fam Physician. 2008;54(1):57.

28. McCracken RK, Fung L, Stratis AK, Cottick KR, Dobson S. Family doctors providing primary care to patients with mental illness in a tertiary care facility. Can Fam Physician. 2018;64(10):e440–5.

29. Welthagen E, Talbot S, Harrison O, Phelan M. Providing a primary care service for psychiatric in-patients. Psychiatr Bull. 2004;28(5):167–70.

30. Nissen L, Løkke A, Frølund JC, Hilberg O, Højlund M, Ejlersen E, et al. Medical consultation to identify somatic disorders and abnormal paraclinical findings in hospitalized psychiatric patients is feasible and worthwhile. Nord J Psychiatry. 2025;79(3):249–58.

31. Bendayan R, Kraljevic Z, Shaari S, Das-Munshi J, Leipold L, Chaturvedi J, et al. Mapping multimorbidity in individuals with schizophrenia and bipolar disorders: evidence from the South London and Maudsley NHS Foundation Trust Biomedical Research Centre (SLAM BRC) case register. BMJ Open. 2022;12(1):e054414.

32. Fiorillo A. A roadmap for better and personalized mental health care in Europe: the priorities of the European Psychiatric Association. Eur Psychiatr. 2025;68(1):e60.

33. Nielsen RE, Taipale H, Cortese S, Dragioti E, Du Rietz E, Firth J, et al. Integrating physical healthcare into psychiatry for severe mental illness: A narrative review and position statement from the ECNP PAN-Health group. Neuroscience Applied. 2026;5:106993.

34. Walker K, Yates J, Dening T, Birgit Völlm, Tomlin J, Griffiths C. Quality of life, wellbeing, recovery, and progress for older forensic mental health patients: a qualitative investigation based on the perspectives of patients and staff. International Journal of Qualitative Studies on Health and Well-being. 2023;18(1):2202978.

35. Lunkka N, Jansson N, Mainela T, Suhonen M, Meriläinen M, Puhakka V, et al. Professional boundaries in action: Using reflective spaces for boundary work to incorporate a new healthcare role. Human Relations. 2022;75(7):1270–97.

36. Jansson N, Lunkka N, Suhonen M, Meriläinen M, Wiik H. Developing a new medical identity through institutional work: a hospitalist in a Finnish university hospital. SJPA. 2023;27(3):73–86.

37. Hamada O, Tsutsumi T, Tsunemitsu A, Fukui T, Shimokawa T, Imanaka Y. Impact of the hospitalist system in Japan on the quality of care and healthcare economics. Intern Med. 2019;58(23):3385–91.

38. Kurihara M, Kamata K, Tokuda Y. Impact of the hospitalist system on inpatient mortality and length of hospital stay in a teaching hospital in Japan: a retrospective observational study. BMJ Open. 2022;12(4):e054246.

39. Jespers V, Christiaens W, Kohn L, Savoye I, Mistiaen P. Somatic health care in a psychiatric setting. KCE Reports 338. Health Services Research (HSR) Brussels: Belgian Health Care Knowledge Centre (KCE). [Internet]. 2021 [cited 2026 Sept 1]. Available from: https://kce.fgov.be/sites/default/files/2021-11/KCE_338_Psychosomatic_Report_2.pdf

40. Thibaut B, Dewa LH, Ramtale SC, D'Lima D, Adam S, Ashrafian H, et al. Patient safety in inpatient mental health settings: a systematic review. BMJ Open. 2019;9(12):e030230.

41. De Hert M, Van Winkel R, Silic A, Van Eyck D, Peuskens J. Physical health management in psychiatric settings. Eur Psychiatr. 2010;25(S2):S22–8.

42. Eskelinen S. Skitsofreniapotilaiden somaattisten terveysongelmien ehkäisy [Preventing somatic comorbidity in schizophrenia]. Duodecim. 2018;134(15):1449-57.

43. Ambreen M, Canning C, Lo B, Agarwal SM, Castle D, Konkolÿ-Thege B, et al. Strengthening the delivery of physical healthcare for adults living with serious mental illness – a qualitative description of patient and family member perspectives. Health Expectations. 2025;28(2):e70224.

44. Teasdale SB, Machaczek KK, Marx W, Eaton M, Chapman J, Milton A, et al. Implementing lifestyle interventions in mental health care: third report of the Lancet Psychiatry Physical Health Commission. The Lancet Psychiatry. 2025;12(9):700–22.

45. Halstead S, Yap CX, Warren N, Agarwal SM, Brand BA, Chan SKW, et al. Holistic prevention and management of physical health side-effects of psychotropic medication: second report of the Lancet Psychiatry Physical Health Commission. The Lancet Psychiatry. 2025;12(9):673–99.

46. WONCA Europe 2023 Edition. The European definition of general practice/family medicine. [Internet]. 2023 [cited 2026 Sept 1]. Available from: https://www.woncaeurope.org/file/41f61fb9-47d5-4721-884e-603f4afa6588/WONCA_European_Definitions_2_v7.pdf.