ERFAN JAHANGIRI, TARUANNA KONTTAJÄRVI, JOEL KETOLA, ANN-SOFIE SILVENNOINEN, HELINÄ HAKKO, PIRKKO RIIPINEN, SAMI RÄSÄNEN

ASSISTED LIVING FOR THE MENTALLY ILL – FEASIBILITY OF THE SIMPLE TAXONOMY FOR SUPPORTED ACCOMMODATION (STAX-SA) IN FINLAND PORVOO ASPA-PROJECT

ABSTRACT

Although development and growth of assisted living (AL) services for the severely mentally ill (SMI) has lasted for decades, and is still ongoing, research on AL services is scarce. Furthermore, the broad variation in AL service models, lack of global taxonomy for AL services and inconsistent reporting of AL service habitants makes the evaluation and comparison of AL services challenging. The purpose of the current study was, for the first time in Finland, to evaluate the applicability of the international Simple Taxonomy for Supported Accommodation (STAX-SA) for recategorization of current national AL service categories for the mentally ill. Data for the study is obtained from the Porvoo ASPA-project. Our main finding was that the correspondence to STAX-SA categorization was good, as 64.7% of the AL service levels could directly be classified to certain STAX-SA types. The strength of STAX-SA categorization was the ability to describe the majority of the 24-hour and part-time service units. STAX-SA ability to describe AL services weakened as the level of AL service decreased but remained reasonable. STAX-SA as a methodological tool has potential in enabling comparative studies on AL services based on the level they provide. STAX-SA has strengths in describing AL units and the services provided in them, especially by differentiating custodial care units from rehabilitation units in AL.

INTRODUCTION

For decades, as part of the global deinstitutionalization process, asylums have been replaced by a complex network of community-based services for individuals suffering from severe mental illnesses (SMI) (1). Growth of specific assisted living (AL) units providing different levels of AL services for the mentally ill, and also specific AL units providing a good deal of these services, has occurred both globally as well as in Finland (2). These services constitute an essential part of the mental health rehabilitation care pathway, especially for those with complex needs. AL services strive to enable individuals with SMI to have an ordinary, inclusive and everyday life in the community by maintaining and practising their independence skills. AL services' purpose is not only to maintain but also to improve these skills for individuals with SMI, so they can manage with less support over time (2–5). Due to the deteriorating, long-lasting and often changing nature of mental illness, the need and level of supportive services may vary over time (3). Thus, AL services are also expected to cope with possible exacerbation phases of mental illness. Consequently, AL services are expected to provide appropriate types of support to respond to the needs of the SMI at different stages of their disorder´s lifespan. Recent studies have acknowledged the various benefits of AL services for their habitants, such as increased satisfaction in life compared to psychiatric inpatient treatment (5–7).

Although development and growth of AL services for the SMI has lasted for decades, and is still ongoing, research on AL services is scarce (5,6). For instance, two consecutive Cochrane Reviews by Chilvers et al. 2002 and in 2006 identified no significant randomized controlled trials with adequate quality (8,9). In the past decade, research on AL services has mainly been descriptive, and the need to develop appropriate tools for research purposes in order to evaluate AL service providers and AL habitants has been emphasized. Examples of these are QuIRC-SA for quality assessment of AL services and The Simple Taxonomy for Supported Accomodation (STAX-SA) for a global categorization of AL services (10,11). In the few studies published, the research methodology and data quality have been heterogeneous, which makes it difficult to perform trustworthy synthesis of AL services (5,6). Furthermore, the broad variation in AL service models, lack of global taxonomy for AL services and inconsistent reporting of AL service habitants makes the evaluation and comparison of AL services challenging (5,6,11).

In Finland, it is known that individuals in psychiatric inpatient treatment are often also living in AL units and receiving AL services. Also, the rapid dehospitalization process might have led to the placement of individuals to AL services based on availability rather than a need for specific AL services. Therefore, it is assumable that some habitants in AL services are inappropriately placed into AL services.

To be able to reliably compare evidence-based knowledge on AL services would be of essential importance for staff working in AL units, for researchers, and for policy makers when they evaluate what kind of AL services are effective, and for whom (6,11,12). This is crucial, especially now in Finland, where transition to wellbeing services counties from a previously municipality funded social and healthcare model has occurred (13). The goal of this Finnish health and social services reform is to improve the quality and availability of services, including mental health services (14).

In Finland, current categorization of AL units into three tiers is based on the social welfare act, which also describes the AL service level provided in each tier (15). The first and most supportive tier is sheltered housing, providing 24-hour service assistance (referred hereafter as 24-hour service). The second tier is sheltered housing, providing part-time assistance (referred hereafter as part-time service). The first and second tier are somewhat institutional in nature and shared with others with similar needs. The third tier is intended for those with the least need of AL services. It is named Supported living and supported accommodation (referred hereafter as supported living). This is an arrangement in which the habitant lives either in the rented or owner occupied flat or other similar type of housing, and is not moving in the separate housing unit.

The purpose of the current study is, for the first time in Finland, to evaluate the applicability of the international Simple Taxonomy for Supported Accommodation (STAX-SA) for recategorization of current national AL service categories for the mentally ill (16). The STAX-SA, with five types defined, is based on four domains (staffing location, level of support, move-on and physical setting) and is assumed to provide deeper insight into the content of AL services compared to the current three-level categorization based on the Social Welfare act (15). The data for AL services for this study are obtained from the Porvoo ASPA-project.

AIMS

First, the AL service units are recategorized following the STAX-SA criteria and taxonomy and the results are

Assisted living for the mentally ill – Feasibility of The Simple Taxonomy for Supported Accommodation (STAX-SA) in Finland Porvoo ASPA-Project

Jahangiri et al.

183

mirrored to the current three-level categorization of AL. Secondly, the feasibility of recategorization to STAX-SA is evaluated by the AL unit managers. Thirdly, the distribution of habitants in AL services according to gender and diagnoses are explored from the current three-level system to the STAX-SA five-level categorization. We will also present the detailed description of the protocol of the Porvoo ASPA-project.

MATERIAL AND METHODS

MATERIAL

The Porvoo ASPA-project was designed to enable a comparative longitudinal study setup to evaluate the outcomes and effectiveness of AL services in rehabilitation of the SMI in Finland.

As *Figure 1* shows, the Porvoo ASPA-project consists of four main phases: I) Planning, II) Recruitment and Collaboration, III) Data collection plan, and IV) Data analysis phase. For a detailed description of the rationale please see *Supplemental 1*. The current study will focus on the Data Analysis phase and the feasibility of the STAX-SA.

Figure 1. Porvoo ASPA-project phases and timeline part of the rationale

Planning 2/2020 – 4/2022	Back-ground	Assisted living (AL) for mentally ill—a systematic literature review and its recommendations. Ketola&Jahangiri et al. 2021 • There is a need for evidence-based longitudinal studies evaluating different types and costs of AL as well as quality of care and outcome for AL habitants.	AL in relation to use of psychiatric inpatient and outpatient care - A 23-year time-trend analysis of national indicators from Finland. Jahangiri et al. 2022 • The decrease of psychiatric inpatient treatment and simultaneous increase in AL habitant rates has not increased outpatient care in the same ratio. • For some reason the growth within AL services has concentrated in Supported living rather than 24-hour and part-time service.
	Screen-ing	Eligibility criteria for cities entering the study • Population of more than 50 000 • Minimum of 100 AL service habitants	20 eligible cities of total of 309 cities in Finland • Two cities contacted
	Enrol-ment	City of Porvoo agreed on participation to the study Research permits were obtained from Porvoo municipality and from the Northern-Ostrobothnia Hospital District, Oulu University hospital, Psychiatry	

$\longrightarrow$

Jahangiri et al.

Assisted living for the mentally ill – Feasibility of The Simple Taxonomy for Supported Accommodation (STAX-SA) in Finland Porvoo ASPA-Project

184

Porvoo ASPA project				
Recruitment and collaboration 5/2022 -7/2022	Recruitment	AL units (n=25) are categorized to: • AL with 24-hour service n=16 • AL with part-time service n=14 • Supported living n=14	**Two types of data sets identified**	Individual-level data of habitants from Porvoo residing in AL units (n=348) are categorized to: • AL with 24-hour service • AL with part-time service • Supported living
	Collaboration	Preliminary discussion on what type of data is available and necessary for the research		
		A research seminar on 3.6.2022 • 16 (67%) AL units attended seminar • 23 (92%) AL units participated in the study		Multiple meetings from 6-9/22 between authors EJ, JK and city of Porvoo employees
Methodology 7/2022 -8/2022	Questionnaires	Data 1 for AL service providers • Cross-sectional data • Filled by AL unit managers Research focus on: • Types and frequency of services provided in AL units • Habitant demographics • Use of staff and education and costs	The need of a global taxonomy was identified • The Simple Taxonomy for Supported Accommodation (STAX-SA) was chosen for the study Development of data collection forms	Data 2 for AL service habitants from Porvoo • Three-year (2020-2022) register-based data • Collected from electronic patient registers by city of Porvoo employees Research focus on: • Sociodemographic and clinical characteristics • Reason for AL and outcome of AL • Mortality in AL
Data collection 8/2022 - 4/2023 and analysis				
Data analysis 4/2023-onwards	Validation	STAX-SA feasibility from Data 1 Purpose of this study		
	Reporting	Several articles planned to be submitted to international, peer-reviewed scientific journals from Data 1 and 2		

Assisted living for the mentally ill – Feasibility of The Simple Taxonomy for Supported Accommodation (STAX-SA) in Finland Porvoo ASPA-Project

Jahangiri et al.

185

CURRENT CATEGORIZATION OF AL UNITS IN FINLAND

In Finland social services and health services are governed by the Social Welfare act and the Health Care act (15,17). The purpose of the acts is to secure the basic needs for individuals in their daily life and promote equality in society, as well as promoting health, welfare, function and social inclusion of the people. By law, the wellbeing services counties are obligated to secure social services, such as financial aid, food and cleaning support, clothing, social rehabilitation and housing, as well as healthcare services such as specialized and basic healthcare for all its inhabitants in an equal way. The wellbeing service counties can either provide AL services themselves or organize them by buying AL services from private businesses and/or non-profit organizations.

The current Social Welfare act categorizes AL services provided in AL units or AL services to habitants as follows:

Supported living and supported accommodation.

The habitant lives in his/her own apartment and the services such as social rehabilitation and financial support are provided to the person on a regular basis. The habitants must be able to take care of their basic daily needs such as hygiene. The staff is not in the immediate proximity of the unit. This type of AL service causes the least cost in Finland, both for the habitant and for society (15).

Sheltered housing with part-time service.

The habitant lives in an AL unit owned and governed by the AL service provider. The staff is available for the habitant on-site and on a daily basis, but not during night-time. In this type of living the AL service provider must produce the necessary food, cleaning, clothing, health and social services that the habitant's needs require. The staff is in the same AL unit as the habitant (15).

Sheltered housing with 24-hour service.

The habitant lives in an AL unit owned and governed by the AL service provider. The staff is available for the habitant 24/7. In this type of living the AL service provider has to produce the necessary food, cleaning, clothing, health and social services that the habitant's needs require (15). The staff is in the same AL unit as the habitant, and the staff is available 24/7 which makes it the most expensive type of AL service in Finland for the habitant and society.

THE SIMPLE TAXONOMY FOR SUPPORTED ACCOMMODATION

McPherson et al. 2018 developed a compact categorical taxonomy of AL services aiming to identify the key elements from different AL services: The Simple Taxonomy for Supported Accommodation (STAX-SA) (11). The taxonomy comprises five AL types according to the AL service level, presented in *Table 1*. These AL service levels are based on the key characteristics of four domains covering: staffing location, level of support, emphasis on move-on and physical setting.

Jahangiri et al.

Assisted living for the mentally ill – Feasibility of The Simple Taxonomy for Supported Accommodation (STAX-SA) in Finland Porvoo ASPA-Project

186

Table 1. The Simple Taxonomy for Supported Accommodation (STAX-SA) AL service levels and domains (11)

Domain	AL service level				
	Type 1	Type 2	Type 3	Type 4	Type 5
Staffing location	Staff on-site	Staff on-site	Staff on-site	No staff on-site	Staff on-site
Level of support	High support	High support	Moderate support	Low/moderate support	No support
Move-on	Limited emphasis on move-on	Strong emphasis on move-on	Strong emphasis on move-on	Limited emphasis on move-on	Limited emphasis on move-on
Physical setting	Congregate setting	Congregate setting	Congregate setting	Individual Accommodation	Congregate setting

METHODS

For the purposes of the current study, at the first stage, AL service units' provider-level data was collected from AL service managers from June to December 2022 using the structured questionnaire developed for this study (*Supplemental Table 1*). Each AL service manager answered the questionnaire in terms of each AL service level the unit provided to their habitants. Thus, the range of AL service levels per unit could vary from 1 to 3. The managers were asked to report aggregated data on habitants by their psychiatric diagnostic category using the following diagnostic hierarchy, starting from most severe: schizophrenia, other psychotic, affective and other disorders, as well as substance abuse.

At the second stage, the current three AL service levels, according to social welfare act, of the AL units were recategorized into five types, utilizing provider-level data following the criteria of STAX-SA, by authors EJ and TK (11). The four domains of the STAX-SA and their scoring are presented in *Table 2*. If the AL service level did not fit into STAX-SA unambiguously, the STAX-SA type was defined according to the current AL service level categorization. EJ and TK chose two domains from STAX-SA as the most important characteristics: 1) Staffing location and 2) Physical structure. These were chosen because they are also defined by law so it was possible to adjust the answers accordingly.

For example, if an AL service level was estimated to be between STAX-SA Types 2 and 3, and the current AL service level in the current three-level system was part-time assistance, the only differentiating domain is level of support. Therefore, it was assumed that because staff is available daily during the daytime the level of support is thus high, and the physical structure is a congregate setting, this AL service level would be recategorized to STAX-SA Type 2.

Assisted living for the mentally ill – Feasibility of The Simple Taxonomy for Supported Accommodation (STAX-SA) in Finland Porvoo ASPA-Project

Jahangiri et al.

187

Table 2. Domains and response options for The Simple Taxonomy for Supported Accommodation (STAX-SA) (11)

Domain	Guidance	Response options
Staffing location	Are support staff on-site or off-site?	1. Staff on-site 2. No staff on-site
Level of support	Level of support should reflect frequency, intensity and nature of support	1. High support 2. Moderate support 3. Low support 4. No support
Move-on	How much emphasis is placed on service users moving to another less supported unit?	1. Strong emphasis on move-on 2. Limited emphasis on move-on
Physical structure	Congregate setting = Communal facilities, with other mental health users Individual accommodation= independent community housing, not mental health specific	1. Congregate setting 2. Individual accommodation

At the third stage, to evaluate the feasibility of STAX-SA categorization, each AL unit manager was asked for their perception of how well the STAX-SA Type, defined in the second stage, captured the key characteristics of the current AL service level they provided. The AL unit managers filled a web-based questionnaire, either on their own or with author EJ's assistance. The evaluation of the feasibility of STAX-SA was performed with two questions. Firstly, the AL unit mangers evaluated the usability of STAX-SA in describing their services by using a 5-point Likert scale (1='Not at all', 5='Extremely') on every AL level depending on how many AL levels each manager worked with. Secondly, one open question inquired "Do you see this classification being useful in your everyday operation?" with the aim to get the AL unit manager's perception about the usefulness of STAX-SA in their AL service (11). The answers to this open question were scored into 3 categories (positive, neutral and negative) by authors EJ and TK.

RESULTS

AL UNITS PARTICIPATING IN THE STUDY

There were 25 AL units for the mentally ill in the study area, of which 23 units (92%) were willing to participate in the study. These 23 units provided a total of 34 AL services. The majority of these AL units provided AL services with 24-hour service (n=14) or part-time service (n=12), and eight units gave services for supported living (n=8).

RECATEGORIZATION OF AL SERVICE LEVELS ACCORDING TO STAX-SA (TYPES 1-5)

Of all 34 AL service levels provided by 23 AL units participating in this study, 64.7% (n=22) (24-hour service n=12, part-time service n=7, supported living n=3) fit perfectly to STAX-SA categorization. Further, 35.3% (n=12) of AL service levels (24-hour service n=2, part-time service n=5, supported living n=5) did not fit to STAX-SA categorization on the initial scoring.

Jahangiri et al.

Assisted living for the mentally ill – Feasibility of The Simple Taxonomy for Supported Accommodation (STAX-SA) in Finland Porvoo ASPA-Project

188

As *Figure 2* shows, the current AL service level with 24-hour service was recategorized to STAX-SA Type 1 (57.1%) and Type 2 (42.9%). The majority of the current AL service level for part-time service was classified to be STAX-SA Type 3 (83.3%). Supported living was recategorized as Type 3 (37.5%) and Type 4 (62.5%).

Figure 2. AL service level changes after recategorization to STAX-SA. None were recategorized to STAX-SA Type 5
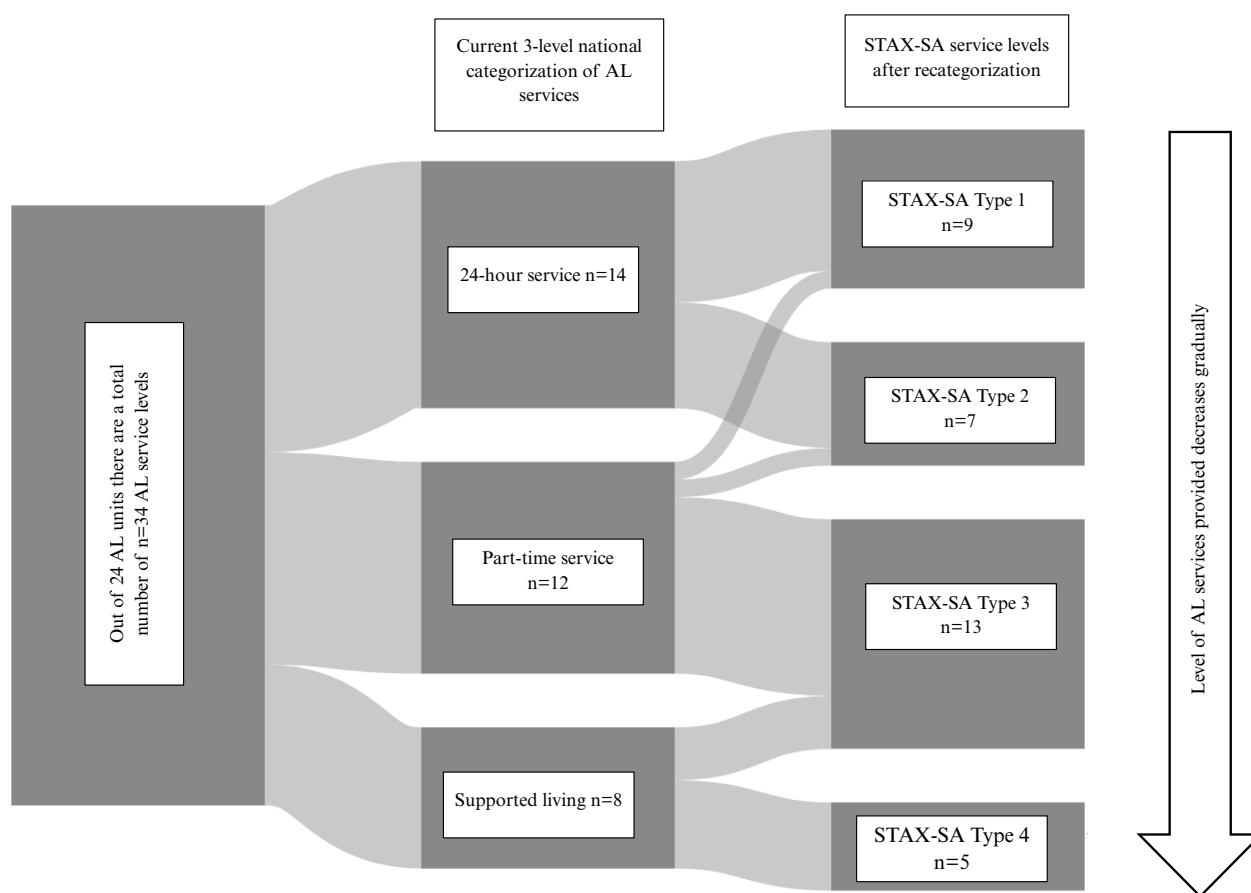
Note: AL: Assisted living. 24-hour service, AL level where staff is available constantly; part-time service, AL level where staff is available except during night-time; supported living, AL level where staff is available upon need. Type 1-5 are The Simple Taxonomy for Supported Accommodation (STAX-SA) categorization levels of support where Type 1 is the highest

Assisted living for the mentally ill – Feasibility of The Simple Taxonomy for Supported Accommodation (STAX-SA) in Finland Porvoo ASPA-Project

Jahangiri et al.

189

GENDER DISTRIBUTION OF HABITANTS IN AL SERVICES

In all of the 24 AL units participating in the study there were total of 505 habitants; 58.4% were men and 41.6% women. As *Table 3a*. shows, by the current AL service levels, there were 243 habitants with 24-hour service; 53.1% were men. 160 habitants were living with part-time service; 65.6% were men. There were 102 habitants in supported living; 59.8% were men.

Correspondingly, and based on the STAX-SA (*Table 3b*), STAX-SA Type 1 comprised 152 habitants; 50.7% were men. In STAX-SA Type 2, there were 95 habitants; 56.8% were men. 161 habitants were in STAX-SA Type 3; 65.2% were men. In STAX-SA Type 4 there were 97 habitants; 60.8% were men.

PSYCHIATRIC DIAGNOSES OF HABITANTS IN AL SERVICES

The distribution of diagnoses of habitants in different AL service levels and according to the STAX-SA types is presented in *Table 4*. A total of 684 diagnoses were collected among the habitants in AL services. As seen in *Table 4a)*, Schizophrenia was clearly the most common diagnosis as there was a total of 230 (33.6%) schizophrenia diagnoses and 60% of these were in 24-hour services. The second most common diagnoses were affective disorders, 20.5%, which were represented somewhat evenly from 24-hour services to supported living.

After applying the STAX-SA (*Table 4b*), most of the schizophrenia diagnoses were in Type 1 (36.2%) and the least in Type 4 (12.2%). Most affective disorders were in Type 3 (37.9%) and Type 2 (25.0%).

Table 3. The gender distribution of habitants in assisted living (AL) services for the mentally ill by: a) current AL service levels, and b) according to The Simple Taxonomy for Supported Accommodation (STAX-SA) types

a) Current 3-level categorization of AL services

Gender	N (%)	Level of AL services provided decreases gradually		
		24-hour service	Part-time service	Supported living
Men	295 (58.4)	129 (53.1)	105 (65.6)	61 (59.8)
Women	210 (41.6)	114 (46.9)	55 (34.4)	41 (40.2)
Total	505 (100)	243 (100)	160 (100)	102 (100)

b) Five types of AL services according to STAX-SA

Gender	N (%)	Level of AL services provided decreases gradually				
		Type 1	Type 2	Type 3	Type 4	Type 5
Men	295 (58.4)	77 (50.7)	54 (56.9)	105 (65.2)	59 (60.8)	0 (0.0)
Women	210 (41.6)	75 (49.3)	41 (43.1)	56 (34.8)	38 (39.2)	0 (0.0)
Total	505 (100)	152 (100)	95 (100)	161 (100)	97 (100)	0 (0.0)

Jahangiri et al.

Assisted living for the mentally ill – Feasibility of The Simple Taxonomy for Supported Accommodation (STAX-SA) in Finland Porvoo ASPA-Project

190

Table 4. The psychiatric diagnoses of habitants in assisted living (AL) services for the mentally ill by: a) current AL service levels, and b) according to The Simple Taxonomy for Supported Accommodation (STAX-SA) types

a) Current 3-level categorization of AL services

Diagnosis	N (%)	Level of AL services provided decreases gradually		
		24-hour service	Part-time service	Supported living
Schizophrenia	230 (33.6)	138 (60.0)	62 (27.0)	30 (13.0)
Other psychosis	75 (11.0)	41 (54.7)	17 (22.7)	17 (22.7)
Affective Disorders	140 (20.5)	56 (40.0)	53 (37.9)	31 (22.1)
Others	120 (17.5)	64 (53.3)	34 (28.3)	22 (18.3)
Substance Abuse	119 (17.4)	61 (51.3)	41 (34.5)	17 (14.3)
Total	684 (100)	360 (52.6)	207 (30.3)	117 (17.1)

b) Five types of AL services according to STAX-SA taxonomy

Diagnosis	N (%)	Level of AL services provided decreases gradually				
		Type 1	Type 2	Type 3	Type 4	Type 5
Schizophrenia	230 (33.6)	84 (36.5)	55 (23.9)	63 (27.4)	28 (12.2)	0 (0.0)
Other psychosis	75 (11.0)	19 (25.3)	23 (30.7)	18 (24.0)	15 (20.0)	0 (0.0)
Affective Disorders	140 (20.5)	24 (17.1)	35 (25.0)	53 (37.9)	28 (20.0)	0 (0.0)
Others	120 (17.5)	38 (31.7)	28 (23.3)	32 (26.7)	22 (18.3)	0 (0.0)
Substance Abuse	119 (17.4)	39 (32.8)	25 (21.0)	39 (32.7)	16 (13.5)	0 (0.0)
Total	684 (100)	204 (29.8)	166 (24.3)	205 (30.0)	109 (15.9)	0 (0.0)

There are more psychiatric diagnoses than habitants, because some may suffer from multiple psychiatric disorders

Assisted living for the mentally ill – Feasibility of The Simple
Taxonomy for Supported Accommodation (STAX-SA) in Finland   Jahangiri et al.
Porvoo ASPA-Project

191

EVALUATION OF THE FEASIBILITY OF THE STAX-SA

17 AL unit managers participated in the STAX-SA feasibility study, representing 22 AL service levels (24-hour service n=10, part-time service n=7, supported living n=5). 86.4% scored the feasibility of STAX-SA high (scores 4-5) and the mean score of evaluations was 4.23. When calculated by different AL service levels, the mean scores were 4.70 for 24-hour service, 4.57 for part-time service and 3.00 for supported living.

15 AL unit managers also answered an open question, "Do you see this classification being useful in your everyday operation?" 14 gave a positive response for STAX-SA categorization in Type 1 and 2. All perceived that STAX-SA is useful for them to be used in practice and particularly when there is a need to describe their service to others. The AL unit managers for Type 3 and 4 service levels evaluated STAX-SA as positive and neutral. The major criticism of the AL unit managers concerned the use of STAX-SA in supported living. In their opinion some of the supported living habitants do move-on but are in need of long-term AL services.

DISCUSSION

Despite the continuous growth of assisted living (AL) in the past decades there has been little research on the effectiveness of AL in general and, in particular, on the services provided in AL (4–6,10,18,19). One of the main problems regarding AL service research has been a lack of a global unified categorization of these services, which makes comparative research difficult (5,16). Also, a comprehensive and internationally usable methodological tool for categorization has been missing. In order to uniform the methods, research is needed in which the effectiveness of international measures is tested in relation to national categorizations. In this study we were able to recategorize the current national three-level system into the new international STAX-SA five-level categorization, and examine its feasibility and usability in Finnish AL services.

Our main finding was that correspondence to STAX-SA categorization was rather good, as 64.7% of the AL service levels could be directly classified to certain STAX-SA types. Our proportion is higher compared to the recent study by Lilliehorn and workgroup 2023, in which 48% of community-based accommodation service units were completely classified to STAX-SA types (20). The strength of STAX-SA categorization was the ability to describe the majority of the 24-hour and part-time service units. STAX-SA ability to describe AL services weakened as the level of AL service decreased, but remained reasonably in line with findings of previous studies (16,20). It is noteworthy that in our study, 86.6% of the AL unit managers perceived that STAX-SA perfectly or somewhat perfectly reflected their current AL service levels. This proportion is higher compared to 53.2% reported in the study of McPherson et al. 2018 (16). AL unit managers also suggested in open answers the usability of STAX-SA in daily operations. There are no other similar studies focusing on the feasibility of STAX-SA by using two different evaluation measures simultaneously, to the best of our knowledge.

STAX-SA categorization was able to describe the majority of the 24-hour and part-time service units. Also, the AL unit managers rated STAX-SA as very good (above 4.50) on 24-hour and part-time service. McPherson et al. 2018 findings were similar in 24-hour service (4.25), but lower in part-time service (3.9). The difference between Type 1 and 2 was solely on the domain "move-on" which indicates AL services' emphasis on moving onwards to lighter AL services. The majority of 24-hour service (64.3%) and a small portion of part-time service (8.3%) units were Type 1 with little emphasis on move-on

STAX-SA performed weakly in identifying supported living (Likert scale 3.0), in which the habitant has to manage more independently compared to 24-hour and part-time services. In our previous research we identified the growth of supported living (21). It seems that STAX-SA lacks the features of communal services, where it is not an institutional type of living, and the level of support is low or none with little to no emphasis on move-on (16,20).

By using STAX-SA categorization to examine the distribution of diagnoses of habitants, it seems that habitants with substance abuse as well as, schizophrenia and affective disorders are more evenly distributed compared to the current three-level system. Interestingly, we found that an equal proportion of males and females were living in the most supported Type 1 units, when in all the other Types the habitants were predominantly male. This gender distribution of Type I habitants differs from those in Finnish studies on dehospitalization, showing that the majority of discharged SMI patients from long-term psychiatric hospitals were male and assumed to be in need of more support (22). Also, Räsänen et al. 2000 reported that the gender distribution of the SMI in AL did not change from discharge up to 4-year follow-up (23). This matter needs to be studied further.

Jahangiri et al.

Assisted living for the mentally ill – Feasibility of The Simple Taxonomy for Supported Accommodation (STAX-SA) in Finland Porvoo ASPA-Project

192

The current three-level AL categorization in Finland is based on the social welfare act and aims to ensure that the severely mentally ill (SMI) receive the services they need (15). Unfortunately, it does not specify the needs of an individual suffering from mental illness or what type of service they may need in order to cope and rehabilitate from their disease, although it has been stated in national guidelines (24). STAX-SA might be a good tool to evaluate from an individual level, AL services to achieve equity for the AL service habitants.

The current national categorization has its benefits. It seems like Type 4 units, with less support, are better described in the current categorization compared to STAX-SA. Therefore, in the future there should be more research on Type 4 levels to examine what type of categorization is suitable for those units, because the growth of supported living is ongoing and there is a risk of growing custodial care in them. In this study it was not possible to examine the allocation of habitants in AL to answer whether they are in the correct AL service level or not. It is assumable that some of the habitants in Type 1, Type 2 and Type 3 could manage with less support, and there are likely also habitants in Type 4 in need of more support than they receive (7,25). It is also important to study those who have gone through AL services into independent living with no support to understand how that occurred. Nevertheless, STAX-SA comparative categorization enables a proper examination of the allocation of the SMI to AL services in a naturalistic setting to examine the effectiveness of AL services.

LIMITATIONS AND STRENGTHS

This study has several limitations. AL service unit data (Data 1) was collected from AL unit managers. The accuracy in reporting diagnoses varied from one manager to another, depending on their knowledge of mental health. This might have affected the accuracy of diagnoses. Also, the cross-sectional manner in which the data was collected raised some concerns as AL habitants' needs change over time. The feasibility of STAX-SA was based on the AL unit managers' subjective opinions. The major strength in this study is that the participation rate of AL service units was very high (96%) and also our data comprised AL units from all service providers (municipality, third-sector and private). The methodological strength is the structured questionnaires created for the purpose of gathering quantitative information on AL service units. The perception of the applicability of the STAX-SA was asked from AL unit managers by using a qualitative open-ended question. It gave deeper insight into the benefits and disadvantages of the STAX-SA if applied in everyday work.

CONCLUSION

STAX-SA as a methodological tool has the potential to enable comparative study on AL services based on the level they provide. STAX-SA has strengths in describing AL units and the services provided in them, especially by differentiating custodial care units from rehabilitation units in AL. Despite of our finding that STAX-SA showed incompleteness in ability to describe supported living services, we considered it to be a promising structured tool for classification of AL services. This kind of tool is needed at national and international level, since it enables conduct of comparative research of AL services. In this study we were able to recategorize 64.7% of the AL service levels by using only the domain questions in STAX-SA, and the rest were able to be recategorized by investigating their current AL service level. It is notable that although STAX-SA has been available since the year 2018, it is still quite rarely used for research purposes. In conclusion, we recommend its implementation in Finland after completing a few modifications. From the STAX-SA categorization we suggest the removal of Type 5, because in Finland there are no AL units with no support, congregate setting and staff on-site. We suggest to two modifications to the domains of STAX-SA: I) The response options for the level of support should range from High to No support, to suit AL services in Finland, II) the Physical setting domain should also include individual accommodation with communal setting, since that kind of accommodation is commonly used in Finland.

Supplementary Material

Supplementary data are available at Psychiatrica Fennica online.

*Assisted living for the mentally ill – Feasibility of The Simple
Taxonomy for Supported Accommodation (STAX-SA) in Finland
Porvoo ASPA-Project*

Jahangiri et al.

193

Authors and Affiliations

Erfan Jahangiri, MD, PhD student, Faculty of Medicine, Research Unit of Clinical Medicine, Psychiatry, University of Oulu

Taruanna Konttajärvi, Medical student, Faculty of Medicine, Research Unit of Clinical Medicine, Psychiatry, University of Oulu

Joel Ketola, M.D., B.Sc. in Economics and Business Administration.

Ann-Sofie Silvennoinen, RN, MNSc, PhD student, Faculty of Education and Welfare Studies, Åbo Akademi University, Vasa, Finland

Helinä Hakko, Ph.D., Biostatistician at Oulu University Hospital, Department of Psychiatry, and University of Oulu, Research Unit of Population Health

Pirkko Riipinen, M.D., Ph.D., Professor of Psychiatry at the University of Oulu, Research Unit of Clinical Medicine, Psychiatry

Sami Räsänen, M.D., Ph.D., Professor of Psychiatry at the University of Oulu, Research Unit of Clinical Medicine, Psychiatry

Correspondence

Erfan Jahangiri, MD, PhD student
Research Unit of Clinical Medicine, Psychiatry,
University of Oulu University of Oulu, P.O. BOX 5000,
90014, Oulu, Finland

erfan.jahangiri@oulu.fi

Jahangiri et al.

Assisted living for the mentally ill – Feasibility of The Simple Taxonomy for Supported Accommodation (STAX-SA) in Finland Porvoo ASPA-Project

194

References

1. Farkas M, Coe S. From Residential Care to Supportive Housing for People With Psychiatric Disabilities: Past, Present, and Future. Front Psychiatry. 2019;10.

2. Ketola J, Jahangiri E, Hakko H, Riipinen P, Räsänen S. Assisted living for mentally ill—a systematic literature review and its recommendations. Nord J Psychiatry [Internet]. 2021 Dec 28;1–20. Available from: https://www.tandfonline.com/doi/full/10.1080/08039488.2021.2001568

3. Dalton-Locke C, Marston L, McPherson P, Killaspy H. The Effectiveness of Mental Health Rehabilitation Services: A Systematic Review and Narrative Synthesis. Vol. 11, Frontiers in Psychiatry. Frontiers Media S.A.; 2021.

4. McPherson P, Krotofil J, Killaspy H. Mental health supported accommodation services: a systematic review of mental health and psychosocial outcomes. BMC Psychiatry. 2018 Dec 15;18(1):128.

5. Killaspy H, Priebe S. Research into mental health supported accommodation – desperately needed but challenging to deliver. The British Journal of Psychiatry [Internet]. 2021 Apr 23 [cited 2022 Jun 14];218(4):179–81. Available from: https://www.cambridge.org/core/product/identifier/S0007125020000744/type/journal_article

6. Ketola J, Jahangiri E, Hakko H, Riipinen P, Räsänen S. Assisted living for mentally ill—a systematic literature review and its recommendations. Nord J Psychiatry. 2021;

7. Dehn LB, Beblo T, Richter D, Wienberg G, Kremer G, Steinhart I, et al. Effectiveness of supported housing versus residential care in severe mental illness: a multicenter, quasi-experimental study. Soc Psychiatry Psychiatr Epidemiol. 2022;57(5).

8. Chilvers R, Macdonald G, Hayes A. Supported housing for people with severe mental disorders. Cochrane Database of Systematic Reviews. 2006;

9. Chilvers R, Macdonald G, Hayes A. Supported housing for people with severe mental disorders. In: Chilvers R, editor. Cochrane Database of Systematic Reviews. Chichester, UK: John Wiley & Sons, Ltd; 2002.

10. Killaspy H, White S, Dowling S, Krotofil J, McPherson P, Sandhu S, et al. Adaptation of the Quality Indicator for Rehabilitative Care (QuIRC) for use in mental health supported accommodation services (QuIRC-SA). BMC Psychiatry. 2016 Dec 14;16(1):101.

11. McPherson P, Krotofil J, Killaspy H. What Works? Toward a New Classification System for Mental Health Supported Accommodation Services: The Simple Taxonomy for Supported Accommodation (STAX-SA). International Journal of Environmental Research and Public Health 2018, Vol 15, Page 190 [Internet]. 2018 Jan 24 [cited 2022 Jan 28];15(2):190. Available from: https://www.mdpi.com/1660-4601/15/2/190/htm

12. Macpherson R, Shepherd G, Thyarappa P. Supported accommodation for people with severe mental illness: An update. Vol. 18, Advances in Psychiatric Treatment. 2012.

13. Ministry of Social Affairs and Health. Wellbeing services county [Internet]. 2021 [cited 2023 Sep 4]. Available from: https://stm.fi/en/wellbeing-services-counties

14. Health and social services reform [Internet]. [cited 2023 Apr 24]. Available from: https://soteuudistus.fi/en/frontpage

15. Social Welfare Act [Internet]. [cited 2023 Sep 4]. Available from: https://www.finlex.fi/fi/laki/ajantasa/2014/20141301

Assisted living for the mentally ill – Feasibility of The Simple
Taxonomy for Supported Accommodation (STAX-SA) in Finland
Porvoo ASPA-Project

Jahangiri et al.

195

16. McPherson Joanna; Killaspy Helen PK. What Works? Toward a New Classification System for Mental Health Supported Accommodation Services: The Simple Taxonomy for Supported Accommodation (STAX-SA). Int J Environ Res Public Health. 2018;15(2):190-NA.

17. Health Care Act [Internet]. [cited 2023 Sep 4]. Available from: https://www.finlex.fi/fi/laki/ajantasa/2010/20101326

18. Killaspy Stefan; Bremner Stephen; McCrone Paul; Dowling Sarah; Harrison Isobel; Krotofil Joanna; McPherson Peter; Sandhu Sima; Arbuthnott Maurice; Curtis Sarah; Leavey Gerard; Shepherd Geoff; Eldridge Sandra; King Michael HP. Quality of life, autonomy, satisfaction, and costs associated with mental health supported accommodation services in England: a national survey. Lancet Psychiatry. 2016;3(12):1129–37.

19. Gühne U, Stein J, Weinmann S, Becker T, Riedel-Heller SG. Housing Interventions in Severe Mental Illness - International Evidence from RCTs. Psychiatr Prax. 2017;44(4).

20. Lilliehorn S, Fjellfeldt M, Högström E, Markström U. Contemporary Accommodation Services for People with Psychiatric Disabilities – the Simple Taxonomy for Supported Accommodation (STAX-SA) Applied and Discussed in a Swedish Context. Scandinavian Journal of Disability Research. 2023;25(1):92–105.

21. Jahangiri E, Kannisto G, Hakko H, Riipinen P, Räsänen Sami. Assisted living in relation to use of psychiatric inpatient and outpatient care - a 23-year time-trend analysis of national indicators from Finland. Psychiatria fennica . 2022;53:190–203.

22. Salokangas RKR, Saarinen S. Deinstitutionalization and Schizophrenia in Finland: I. Discharged Patients and Their Care. Schizophr Bull. 1998 Jan 1;24(3):457–67.

23. Räsänen S, Hakko H, Herva A, Isohanni M, Nieminen P, Moring J. Community Placement of Long-Stay Psychiatric Patients in Northern Finland. Psychiatric Services. 2000 Mar;51(3):383–5.

24. Suomalaisen Lääkäriseuran Duodecimin ja Suomen Psykiatriyhdistys ry:n asettama työryhmä. Schizophrenia: Current Care Guideline [Internet]. 2022 [cited 2023 Jun 8]. Available from: https://www.kaypahoito.fi/hoi35050

25. Mötteli S, Adamus C, Deb T, Fröbel R, Siemerkus J, Richter D, et al. Independent Supported Housing for Non-homeless People With Serious Mental Illness: A Pragmatic Randomized Controlled Trial. Front Psychiatry. 2022;12.

Jahangiri et al.

Assisted living for the mentally ill – Feasibility of The Simple
Taxonomy for Supported Accommodation (STAX-SA) in Finland
Porvoo ASPA-Project

196

Assisted living for the mentally ill – Feasibility of The Simple
Taxonomy for Supported Accommodation (STAX-SA) in Finland   Jahangiri et al.
Porvoo ASPA-Project

197