Faculty of Medicine
Department of Psychiatry
Doctoral Programme in Population Health
University of Helsinki
Finland

MENTAL HEALTH SERVICES IN SOUTHERN FINLAND – DISPARITIES IN PERSONNEL RESOURCES, COSTS, AND REGIONAL ORGANIZATION

Minna Sadeniemi

DOCTORAL DISSERTATION

To be presented, with the permission of the Faculty of Medicine of the University of Helsinki, for public discussion in Lecture Room 3, Biomedicum, Helsinki, on the 19th of August, 2022, at 13 o'clock.

Helsinki 2022

Thesis supervisors:

Professor Grigori Joffe, PhD
University of Helsinki, Faculty of Medicine, Department of Psychiatry

and

Professor Sami Pirkola, PhD
University of Tampere, School of Health Sciences

Reviewed by:
Professor Jyrki Korkeila, PhD, University of Turku
Professor Kaisa Kotakorpi, PhD, University of Tampere,

Opponent:
Professor Juha Kinnunen, PhD

The Faculty of Medicine uses the Urkund system (plagiarism recognition) to examine all doctoral dissertations

ISBN 978-951-51-8357-6 (pbk.)
ISBN 978-951-51-8358-3 (PDF)

Unigrafia
Helsinki 2022

ABSTRACT

The mental health services in Finland have undergone large structural changes during the last decades. Comparable, systematic information on the personnel resources and service types and how they reflect the needs of the population has not been available. This lack of information has impeded the targeting of reforms. The aim of this study was to partially fill in this information gap. This study was part of the international REFINEMENT (Research on FINancing systems' Effect on the quality of MENTal health) project, which compared the financing and structure of mental health services in nine European countries.

The first aim of this study was to explore the relationship of primary care mental health personnel resources with the costs and use of specialized psychiatric services. The second aim was to compare the mental health service structure and personnel resources in the Finnish and Spanish study areas. The third aim was to investigate the relationship of personnel resource allocation in local vs. centralized mental health and substance abuse services. The fourth aim was to investigate how the personnel resource allocation to non-hospital residential services is associated with the total personnel costs of the mental health and substance abuse services.

The study areas were the hospital district areas of Helsinki and Uusimaa (HUS), South Karelia (Eksote), Kymenlaakso (Carea) and southwestern Finland (VSSHP); and in the European comparison study, the Girona area of Catalonia, Spain. In the service mapping, a standardized, open access classification instrument — the European Service Mapping Schedule – Revised (ESMS-R), was used. The mental health and substance abuse services were mapped cross-sectionally in the years 2012–14. Three levels of comparison were used: the municipal, hospital area and hospital district levels.

Large (even tenfold) regional differences in primary care mental health personnel resources were found. These differences were not explained by sociodemographic indicators of the need for services. The costs of specialized mental health services were associated with the mental health index, which is comprised of service need indicators but not the number of primary care mental health service personnel resources presumed to complement or substitute for specialized care. The relative number of psychiatric nurses in primary care mental health services was associated with a lower number of specialized psychiatric care outpatient visits. Local mental health service personnel resources without gatekeeping were associated with fewer personnel resources in local services with gatekeeping. A higher number of personnel in centralized services was associated with higher total personnel

resources. The non-hospital residential services were a significant predictor of total personnel costs, independently of sociodemographic indicators of need. The Finnish study area mental health care system showed 6.7 times more personnel resources than the Spanish study area. The greatest difference was in the residential services.

Finland still has an institutionally oriented service structure. Instead of true deinstitutionalization, transinstitutionalization to non-hospital residential services has also occurred. Fragmentation of the service organization among municipalities and social and health care organizations has led to unfounded differences in personnel resources in mental health services. To avoid suboptimization and double organization, horizontal and vertical integration of the services are needed. Continuous gathering of personnel resource and service structure data as well as outcome data from public, private and third-sector service providers is needed for informed planning and decision-making in the future. This would provide a basis for equitable, high-quality and cost-effective mental health and substance abuse services at both the low-threshold and highly specialized service levels.

TIIVISTELMÄ

Mielenterveyspalveluissa on tapahtunut suuria rakenteellisia muutoksia viime vuosikymmeninä. Vertailukelpoista tietoa hajautetun järjestelmän henkilöstöresursoinnista ja palvelutoimintotyypeistä ja siitä, miten hyvin ne heijastelevat väestön tarpeita, ei ole ollut saatavilla. Tämän tutkimuksen tavoitteena paikata tätä tietovajetta. Tämä tutkimus on osa kansainvälistä REFINEMENT (Research on FINancing systems' Effect on the quality of MENTal health) tutkimus- ja kehittämishanketta, jossa vertailtiin 9 eurooppalaisen maan mielenterveyspalvelujärjestelmiä ja niiden rahoitustapojen yhteyttä palvelujen laatuun.

Tutkimusalueena oli Helsingin ja Uudenmaan sairaanhoitopiiri (HUS), Varsinais-Suomen sairaanhoitopiiri (VSSHP), Etelä-Karjalan sairaanhoitopiiri (Eksote) ja Kymenlaakson sairaanhoitopiiri (Carea), sekä eurooppalaisessa vertailututkimuksessa Gironan alue Kataloniassa, Espanjassa. Palvelujen kartoituksessa käytettiin standardisoitua, avoimesti saatavilla olevaa eurooppalaista palvelujen kartoittamistyökalua: European Service Mapping Schedule -Revised (ESMS-R). Palvelujen kartoittaminen tehtiin poikkileikkaustutkimuksena vuosina 2012-14. Tutkimuksen osajulkaisuissa palvelujen alueen aikuisväestöön suhteutettuja henkilöstöresursseja tarkasteltiin eri tasoilla: kunta-, alue- ja sairaanhoitopiiritasolla.

Tutkimuksessa havaittiin suuria, jopa kymmenkertaisia eroja kuntien perusterveydenhuollon mielenterveyspalvelujen henkilöstöresursoinnissa. Erot eivät selittyneet tarvemuuttujilla. Psykiatrisen erikoissairaanhoidon kustannukset olivat yhteydessä mielenterveysindeksiin, mutta yhteyttä perusterveydenhuollon mielenterveyspalvelujen henkilöstöresursseihin ei havaittu. Perusterveydenhuollon psykiatristen sairaanhoitajien väestöön suhteutettu määrä oli yhteydessä pienempään määrään psykiatrisen erikoissairaanhoidon avohoitokäyntejä. Päihde- ja mielenterveyspalvelujen matalan kynnyksen lähipalvelujen suurempi henkilöstöresursointi oli niin ikään yhteydessä kynnyksellisten lähipalvelujen pienempään henkilöstöresursointiin. Keskitettyjen palvelujen suurempi henkilöstöresursointi oli yhteydessä suurempaan alueen kokonais-henkilöstöresursointiin. Asumispalvelujen henkilöstöresursointi oli merkittävä päihde- ja mielenterveyspalvelujen kokonaishenkilöstö-kustannuksia selittävä tekijä, sosiodemografisista tarvemuuttujista riippumatta. HUS alueella mielenterveyspalveluissa oli 6,7 kertainen väestöön suhteutetun henkilöstön kokonaismäärä verrattuna espanjalaiseen tutkimusalueeseen Gironaan. Suurin ero oli laitosmuotoisissa palveluissa.

Suomessa on edelleen laitoskeskeinen mielenterveys- ja päihdepalvelurakenne. Puhtaan deinstitutionalisaation sijaan on tapahtunut myös merkittävää transinstitutionalisaatiota sairaaloista muihin

laitosmuotoisiin päihde- ja mielenterveyspalveluihin. Palvelujen järjestämisvastuun hajautuminen kuntatasolle on johtanut perusteettomiin kuntien ja alueiden välisiin eroihin mielenterveyspalvelujen henkilöstöresursoinnissa. Osaoptimoinnin ja kaksoisorganisaation välttämiseksi palveluiden horisontaalinen ja vertikaalinen integraatio olisi tarpeen. Palvelujärjestelmän suunnittelun ja päätöksenteon tueksi tarvittaisiin jatkuvaa ajantasaista tiedonkeruuta palvelujärjestelmän rakenteesta, henkilöstöresursoinnista ja hoidon vaikuttavuudesta niin julkisen, yksityisen kuin kolmannen sektorinkin palveluntuottajilta. Tämä tarjoaisi pohjan tasavertaisille, laadukkaille ja kustannustehokkaille palveluille niin matalan kynnyksen palvelujen tasolla kuin vaativassa erikoissairaanhoidossa.

SAMMANDRAG

Mentalvårdstjänsterna har genomgått stora strukturella förändringar under de senaste decennierna. Jämförbar information om personalresurser och servicetyper i detta decentraliserade servicesystem, och hur dessa speglar befolkningens behov, har inte funnits tillgänglig. Den här studien siktar på att delvis fylla bristen på information. Studien är en del av det internationella REFINEMENT forskning- och utvecklingsprojektet, där mentalvårdssystem, deras finansiering och dess koppling till kvaliteten av mentalvårdstjänsterna jämfördes i 9 europeiska länder.
Studieområdet omfattade sjukvårdsdistrikten Helsingfors och Nylands sjukvårdsdistrikt (HUS), Eksote, Carea och Egentliga Finlands sjukvårdsdistrikt, och den europeiska jämförelsestudien omfattade Girona området i Katalonien, Spanien. I kartläggningen av mentalvårds- och missbruksvårds-servicen användes det standardiserade, öppet tillgängliga klassifieringsinstrumentet European Service Mapping Schedule-Revised (ESMS-R). Kartläggningen genomfördes som en tvärsnittsstudie under åren 2012-14. Personalresurserna riktade till vuxenbefolkningen granskades i delstudier på olika nivåer: kommunal-, områdes- och sjukvårdsdistriktsnivå.

Stora, även tiofaldiga, skillnader i primärhälsovårdens mentalvårdspersonalresurser mellan kommunerna upptäcktes. Skillnaderna förklarades inte av sociodemografiska indikatorer gällande behov av service. Kostnaderna för den psykiatriska specialsjukvården hade ett samband med mentalhälsoindexet, som reflekterar behovet av tjänsterna. Kostnaderna för den psykiatriska specialsjukvården hade inte ett samband med mängden av mentalvårdspersonalresurser inom primärhälsovården. En större mängd psykiatriska sjukskötare inom primärhälsovården hade ett samband med ett mindre antal öppenvårdsbesök inom den psykiatriska specialsjukvården. Större lokala personalresurser inom mental- och rusmedelsvård med låg tröskel hade ett samband med mindre personalresurser inom lokala mental- och rusmedelsvård med högre tröskel. Större personalresurser inom den centraliserade servicen associerade med större totalpersonalresurser inom området. Personalresurserna i andra anstaltstjänster än sjukhusvård, var en signifikant faktor som förklarade de totala personalkostnaderna inom mental- och rusmedelvårdstjänsterna, oberoende av indikatorerna för befolkningens behov av tjänster. HUS området visade sig ha 6.7 gånger högre relativ mängd av personalresurser inom mentalvårdstjänsterna jämfört med det spanska referensområdet Girona. Största skillnaden fanns i anstaltstjänsterna.

Finland har ännu ett anstaltsorienterat mental- och rusmedelsvårdsystem. I stället för en egentlig deinstitutionalisation, har en signifikant transinstitutionalisation till andra anstaltstjänster skett. Decentraliseringen av organiseringsansvaret av vårdtjänsterna till kommunnivån har lett till ogrundade skillnader mellan kommunerna och områdena. För att undvika

deloptimering och dubbelorganisation, skulle en vertikal och horisontal integrering av tjänsterna behövas. Med tanke på planering av mentalvården och beslutsfattningen, skulle en kontinuerlig och uppdaterad insamling av information över struktur, personalresurser och effektiviteten av tjänsterna behövas, både av den offentliga, privata och tredje sektorns serviceproducenter. Detta skulle erbjuda en bas för jämlika, högklassiga och kostnadseffektiva tjänster både för lågtröskeltjänsterna och inom den krävande specialsjukvården.

ACKNOWLEDGEMENTS

This thesis has been made as part of the national and international REFINEMENT project. First of all, I want to thank my supervisors, professor Grigori Joffe and professor Sami Pirkola. Prof Grigori Joffe always had time for me, whatever the matter was – commenting on my plans and writings, supporting me through difficulties, seeing that I was getting things done and being patient towards my stubbornness. Prof Sami Pirkola always had a clear vision with articles and showed high expertise in commenting and helping me through the process of writing them. Prof Kristian Wahlbeck was the head of the Finnish REFINEMENT research project and always showed an admirable mastery of knowledge in the field of mental health service system studies.

The meetings and seminars of the Finnish REFINEMENT research and development project group gave a great observation post overlooking the mental health service system in southern Finland. I want to thank Raija Kontio, who showed warm and firm practical leadership during the REFINEMENT project and participated in commenting on my articles. A warm thanks to Taina Ala-Nikkola, who was my fellow doctoral candidate and together with whom I had the honour of writing our articles and supporting each other on the way. I am thankful to Maiju Pankakoski and Johanna Seppänen for offering expert consultation on the statistics. Marjut Vastamäki, Susanna Gilbert, Vuokko Majoinen and Olli Oranta collected the service mapping data. I am grateful to all of them. They provided the data that this study is based upon. I am thankful to Dr Eila Sailas, Maili Malin, Peija Haaramo and other members of the REFINEMENT research and development project group who actively contributed to the discussions during the meetings and seminars that I learned so much from.

I am deeply grateful to professor Luis Salvador-Carulla for his immense input in the field of service structure studies, developing and using the DESDE-LTC/ESMS instruments, and his expert contribution to the Finnish-Spanish comparison study. I am also very grateful for the collaboration with Mencía Gutiérrez-Colosia and research associate professor Jose Salinas-Pérez during my research visit at Loyola University. While there, I also had the great pleasure to work closely together with Nerea Almeda; and later during this research project, we worked together in Helsinki during her stay here. She showed me what it means to work hard with a wise mind, and also how to have fun while working. I am also grateful to Jordi Cid and professor Carlos Garciá-Alonso for the collaboration with the Finnish-Spanish comparison study.

I want to thank also Dr Markku Paavola, who was my boss in the Porvoo hospital area when this project started, Dr Mikael Holma, who was my boss in the Southern Psychiatric Outpatient Clinic in Helsinki and Dr Henno Ligi, who was my boss while I worked at the Bipolar Centre in Helsinki. They all enabled

my research by allowing research leaves or shortened clinical working hours. I am thankful to all my patients and dear colleagues from all professional groups through all these years, who have taught me what psychiatric suffering and care are. It was this clinical grassroots working experience that was behind my decision to join the REFINEMENT research and developmental project. I am grateful to Helsinki city, HUS, the Finnish Psychiatric Association and the the EU's Seventh Framework Programme for funding this study.

For the language revision of the thesis, I kindly thank Steve Lipson. For the language revision of the Swedish abstract, I kindly thank Tove Hertzberg.

I want to thank my dear friends for supporting and sharing the ups and downs of life through the years of this PhD project. I want to thank my parents, Inkeri and Juhani, for giving me love, courage and inspiration in life. To my husband Matti, I am grateful for the love, endless intelligent discussions and support that I can rely on in whatever I do. To our children, Tuomas, Aino and Kara, I give thanks for being there and giving me the deepest joy and meaning in life.

CONTENTS

LIST OF ORIGINAL PUBLICATIONS

This thesis is based on the following publications:

I Does primary care mental health resourcing affect the use and costs of secondary psychiatric services?
Sadeniemi M, Pirkola S, Pankakoski M, Joffe G, Kontio R, Malin M, Ala-Nikkola T, Wahlbeck K. International Journal of Environmental Research and Public Health. 2014; 11(9), 8743.

II A comparison of mental health care systems in northern and southern Europe: A service mapping study
Sadeniemi M, Almeda N, Salinas-Pérez J A, Gutiérrez-Colosía M, García-Alonso C, Ala-Nikkola T, Joffe G, Pirkola S, Wahlbeck K, Cid, J, Salvador-Carulla L. International Journal of Environmental Research and Public Health. 2018; 15, 1133.

III Identifying local and centralized mental health services—The development of a new categorizing variable. Ala-Nikkola, T., Pirkola, S., Kaila, M., Joffe, G., Kontio, R., Oranta, O., Sadeniemi, M., Wahlbeck, K., Saarni, S. I. International Journal of Environmental Research and Public Health 2018; 15(6), 1131.

IV Residential services as a major cost driver in mental health and substance use services in southern Finland. Sadeniemi, Minna; Joffe, Grigori; Pirkola, Sami; Ala-Nikkola, Taina; Kontio, Raija; Wahlbeck, Kristian. Psychiatria Fennica, 2021, 52: 60–74.

The publications are referred to in the text by their roman numerals.
The republication of publications in this thesis has been approved by the publishers

ABBREVIATIONS

BSIC	Basic stable input of care. A stable service unit with defined personnel, budget, target population and patients, defined facilities and administrative autonomy
DESDE-LTC	Description and Evaluation for Long Term Care in Europe. A service mapping tool (same as ESMS-R below)
ESMS-R	European Service Mapping Schedule – Revised
FTE	Full-time equivalent, planned full-time vacancies
HUS	(Helsingin ja Uudenmaan sairaanhoitopiiri) The Hospital District of Helsinki and Uusimaa
Idescat	Official Statistic Website of Catalonia
i.e.	id est (Latin), that is
Kela	(Kansaneläkelaitos) The Social Insurance Institute of Finland
MHI	Mental health index
MHS	Mental health services (publications I and II), mental health and substance abuse services (publications III and IV)
MTC	The Main Type of Care provided by the service unit
OECD	Organization for Economic Cooperation and Development
REFINEMENT	Research on Financing Systems' Effect on the Quality of Mental Health Care in Europe
REMAST	Refinement Mapping Services Toolkit
Sotkanet	The Finnish Statistics and Indicator Bank

Stat	Statistics Finland
VSSHP	(Varsinais-Suomen sairaanhoitopiiri) The Hospital District of Southwestern Finland
WHO	World Health Organization

1 INTRODUCTION

Mental health disorders are very common, affecting at least 20% of the adult population each year (Markkula et al., 2015; Wittchen et al., 2011; Perälä et al., 2011; Pirkola et al., 2005). They contribute substantially to the global burden of disease, affecting the quality of life, physical health, the family and the working ability of the individual (Hewlett & Moran, 2014; Subramaniam et al., 2013, Saarni et al., 2007). Globally, mental health and substance use disorders are the leading causes of years lived with disability (Whiteford et al., 2013). In high-income countries, 11% of the disease burden measured by disease-adjusted life years is due to mental health disorders (Murray et al., 2012).
People who suffer from mental health disorders also have an increased risk of physical illnesses, receive less treatment and have a worse outcome of physical illness and shortened life expectancy (Westman, Gissler & Wahlbeck, 2012; Prince et al., 2007). Every year, globally at least 800,000 persons commit suicide, mostly attributable to mental health disorders (Prince et al., 2007). Mental health disorders have a great impact on society and the economy, leading to direct and indirect costs estimated to mount up to 4.1% of GDP in the EU countries (OECD Publishing, 2018). In Finland, the total costs of mental health disorders in 2015 were 5.3% of GDP, which is among the highest among the OECD countries (OECD Publishing, 2018).

Although mental health disorders are a major public health issue, less than 50% of those suffering from a mental health disorder receive any treatment, and less than 25% receive minimally adequate treatment for their disorder, even in high-income countries (Kasteenpohja et al., 2015; Wittchen et al., 2011; Hamalainen et al., 2009; Sihvo et al., 2006). Behind the undertreatment of mental health disorders may lie the fear of stigmatization, under-recognition of common mental health problems in primary care, and underprovision of easily accessible and affordable services and evidence-based interventions (Hewlett & Moran, 2014).

The mental health care systems have gone through great structural changes during the last decades, with the downsizing of psychiatric hospitals and a slow, uneven and uncoordinated development of community mental health services as the most common trend in high-income countries (Thornicroft, Deb & Henderson, 2016; Thornicroft & Tansella, 2013). A modern, balanced mental health care model should consist of outpatient care, mobile services, hospital beds and housing services. The provision of care at the primary care, general mental health care and specialized mental health care levels is recommended (Thornicroft, Deb & Henderson, 2016; Thornicroft & Tansella, 2013).

The Mental Health Action Plan for Europe promotes equal and affordable access to mental health services provided in the community, entitlement to safe, respectful and effective treatment, good quality physical and mental

health care for all, coordination of mental health care systems with other sectors and information-based governance and delivery of mental health care (World Health Organization, 2013). All strategies towards harmonization and equity of care, implementation of policies and interventions require standard comparison data on the structure and resources of the service system (Raine, Fitzpatrick & de Pury, 2016; Hewlett & Moran, 2014; Unger & Eder, 2012) . This information, however, has largely been lacking (Tuori, 2011). According to a recent study, the provision and structure of mental health services show wide variation among the European countries (Gutiérrez-Colosía et al., 2017). The degree of deinstitutionalization, personnel resources invested in community care and the output of services has been sparsely studied.

The European Service Mapping Schedule (ESMS) was developed for the standard description of mental health services (Johnson, Kuhlmann & EPCAT Group. European Psychiatric Assessment Team, 2000). The tool was later adapted and extended to long-term care and renamed as the Description and Evaluation of Services and Directories in Europe for Long Term Care (DESDE-LTC) (Salvador-Carulla et al., 2013; Salvador-Carulla et al., 2011). In the REFINEMENT study, the DESDE-LTC/ESMS-Revised (ESMS-R) tool and the REMAST toolkit (the Refinement Mapping Services Toolkit) were used to classify and describe the MHS in the study areas (Salvador-Carulla et al., 2012).

In search of the optimal balance and most cost-effective division of resources in primary and secondary care, outpatient and residential services, and social, health and third-sector services, comparison data on the structure, use and costs of the MHS are needed. Also, socioeconomic indicators of the need for services need to be taken into the analysis. In our study, we used as socioeconomic indicators the length of education, the unemployment rate, the number of single households and use of alcohol, the average income and the mental health index (MHI; see below). We used both municipality-level analysis, hospital area-level analysis and hospital district-level analysis in our study. As benchmarking analysis, we compared a hospital district in Finland with a hospital district in Spain.

2 REVIEW OF THE LITERATURE

2.1 THE EPIDEMIOLOGY OF MENTAL HEALTH DISORDERS

2.1.1 THE PREVALENCE OF MENTAL HEALTH DISORDERS

Mental disorders are very common, often comorbid and have an early-onset course of illness, with half of the lifetime disorders emerging by the age of 14 and three-quarters by the age of 24 (Kessler et al., 2005; Lindeman et al., 2000). In a population survey study on young adults (ages 19–34) in Finland, the lifetime prevalence of any mental disorder was 40.4%. The lifetime prevalence of depression was 17.7%, anxiety disorders 12.6%, substance abuse disorders 14.2%, personality disorders 6.8% and bipolar disorders 1.9%. Of those having any Axis I mental health disorder, 59.2% had at least one other mental health disorder (Suvisaari et al., 2009). For anxiety disorders in Finland, social phobia showed a 12-month prevalence of 1%, generalized anxiety disorder 1.3%, panic disorder 1.9% and agoraphobia 1.2% (Pirkola et al., 2005). In a Finnish population survey study on persons aged 30 and older, the lifetime prevalence of schizophrenia was 0.9%, of schizoaffective disorder 0.3%, of schizophreniform disorder 0.07% and of delusional disorder 0.2% (Perälä et al., 2007). The 12-month prevalence of depression has somewhat increased in Finland in 11 years—from 5.4% in the Health 2000 study to 7.4% in the Health 2011 study (Markkula et al., 2015).

2.1.2 THE SOCIODEMOGRAPHIC VARIABLES AND THE PREVALENCE OF MENTAL HEALTH DISORDERS

Depression is more common among females than males and is associated with young adulthood and middle age, unemployment, heavy drinking habits, smoking, being unmarried or divorced, having lower education or income and having weak social support (Craske & Stein, 2016; Pirkola et al., 2005; Kessler et al., 2005; Kessler et al., 2003; Lindeman et al., 2000).

Anxiety disorders as a group are more common among females than males, but social anxiety disorder is more evenly distributed among the sexes (Craske & Stein, 2016). A higher risk of anxiety disorders is associated with lower socioeconomic status, unemployment and younger age (Craske & Stein, 2016; Pirkola et al., 2005).

A higher risk for substance abuse disorders is associated with male sex, unemployment, lower education and divorce in males (Suvisaari et al., 2009; Kessler et al., 2005; Pirkola et al., 2005).

Schizophrenia and other non-affective psychotic disorders are related to socioeconomic disadvantages, such as being unemployed, being on a disability pension, having lower education and income and being single. There is considerable geographic variation in the prevalence of schizophrenia in Finland. The lowest prevalence is among persons born in southwestern Finland, and the highest is among those born in northern Finland (Perälä et al., 2008).

2.2 THE BURDEN OF MENTAL HEALTH DISORDERS

2.2.1 BURDEN ON THE INDIVIDUAL

Since mental disorders start at a young age and often have a long-term, chronic or relapsing course, mental and substance use disorders are the leading global cause of all non-fatal burdens of disease (YLDs) (Whiteford et al., 2013) . Measured as disability-adjusted life years (DALYs), mental health and substance abuse disorders constitute the 5th leading cause of burden of disease globally. Of mental health disorders, depression is the leading cause of burden of disease, and anxiety disorders rank second (Baxter et al., 2014; Whiteford et al., 2013,).

People with serious mental health disorders have increased mortality compared to the general population. The excess mortality is mostly due to medical conditions like cardiovascular and respiratory disease, and only partly due to increased suicide risk. The life expectancy of men with a serious mental health disorder is 16–20 years lower than the general population. For women, the difference in life expectancy is 11–15 years (Westman, Gissler & Wahlbeck, 2012; Wahlbeck et al., 2011).

Mental health disorders affect a person's quality of life. Chronic disorders like dysthymia, agoraphobia, generalized anxiety disorder and social phobia are associated with a greater loss of health-related quality of life (HRQoL) than major depressive disorders. The loss of HRQoL in these disorders is comparable to that in the somatic diseases that most severely affect the HRQoL, like Parkinson's disease and heart failure (Saarni et al., 2007). Of psychotic disorders, schizoaffective disorder lowers the HRqOL less than chronic anxiety disorders but more than depressive disorder, whereas schizophrenia and bipolar disorder lower the HRQoL less than major depressive disorder. In psychotic disorders, lowered HRqOL is associated with depressive symptoms more than with positive or negative psychotic symptoms (Saarni et al., 2010).

2.2.2 BURDEN ON THE FAMILY

Mental health disorders have an impact on the life of the family: on work, leisure, household, income, children, siblings, family relations, neighbours and social activities (Bailey & Grenyer, 2013; Senaratne et al., 2010; Samele & Manning, 2000). The burden of mental illness on the family was divided by Hoenig and Hamilton into objective and subjective burdens. The objective burden consists of the effect on the household, the health of family members and family routines. The subjective burden refers to the perceived burden of taking care of a person with a mental health disorder (Hoenig & Hamilton, 1966).

Feelings of stigma, shame, guilt and self-blame may add to the burden of the family and caregivers of the person suffering from severe mental disorders, and caregivers have an increased risk of depression and lowered psychological and social well-being (Zendjidjian et al., 2012; Awad & Voruganti, 2008; Angermeyer et al., 2006; Foldemo et al., 2005,).

The family of the person suffering from a severe mental health disorder is often involved in dealing with crisis and safety and in emotional and sometimes financial support, even when not living in the same household with the person (Awad & Voruganti, 2008). In a survey from the U.S., 82% of the caregivers of schizophrenia patients were female, and 90% of them were mothers. 70% of the caregivers were age 60 and over, and 33% were over 70 years old. An increase in family conflicts and a decline in work or school performance occur among family members of persons with schizophrenia. Cultural factors may play a role in the perceived burden and relatives' attitudes towards patients (Guarnaccia & Parra, 1996).

2.2.3 THE ECONOMICAL BURDEN: DIRECT AND INDIRECT COSTS

The economic burden of disease consists of direct health care costs (i.e., inpatient treatment, treatment in outpatient and other community-based health care settings, rehabilitation programmes, medication), direct non-medical costs (like nursing homes, transportation costs, third-sector activities) and indirect costs (lost productivity, absenteeism from work, pensions, lost productivity of carers). According to a study by Olesen et al. (2012), in Europe, brain disorders were estimated to cost €798 billion in the year 2010. Of these costs, 37% were direct health care costs, 23% were direct non-medical costs and 40% were indirect costs. Mood disorders cost the most (€113.4 billion), followed by dementia (€105.2 billion), psychotic disorders (€93.9 billion), anxiety (€74.4 billion), addiction (€65.7 billion) and stroke (€64.1 billion) (Olesen et al., 2012). According to the 2018 OECD report, in 2015, the estimated total costs of mental health disorders in Finland were €11.1 billion, of which direct health care costs were €2.6 billion, direct social security costs were €3.9 billion and indirect costs were €4.7 billion. The total costs of

mental health disorders in Finland were 5.3% of GDP, which is among the highest in the OECD countries (OECD Publishing, 2018).

The economic burden of mental health disorders can be reduced by increasing the availability of evidence-based treatment. The estimated benefit of increasing the coverage of treating depression and anxiety disorders overrides the costs by 2.3–3-fold if only the economic benefit is counted, and by 3–5.7-fold if the value of improved health is also counted (Chisholm et al., 2016).

2.3 TREATMENT OF MENTAL HEALTH DISORDERS

2.3.1 THE HISTORY OF THE TREATMENT OF MENTAL DISORDERS

The theories by which mental disorders have been conceptualized have affected the ways that people with mental disorders have been treated. Table 1 presents the theories and treatment types from ancient times to the 19th century.

Table 1. *History of theories and treatment of mental disorders from ancient Greece to the 19th century.*

Table 1. The history of the theories and treatment of mental disorders from ancient Greece to the 19th century (Colp, 2005, Hyvönen, 2008).					
Era	Ancient Greece and Rome	The Middle Ages (5th to 15th century)	The beginning of modern time (16th – 17th century)	The Enlightenment (late 17th century and 18th century)	The 19th Century
Theories on mental illness	Hippocrates: Imbalance of the body fluids. Plato: Imbalance of the rational, appetitive and spirited-affective parts of the soul. Galenos: Imbalance of rational and irrational features and passion (hot, cold, dry and moist). Diseases are caused by bad diet or bad air etc.	In Europe: A punishment for sins or as signs of influence of satan. Arab culture: classical theories were flourished.	Religious theories on witchcraft, magical, astrological and demonical beliefs. Also raising interest in the classical theories. Paracelsus: stars stimulate animal instincts which takes over the spirit.	William Battle (in "A treatise on Madness" from 1758): mental illnesses could be cured, and patients should not be punished. Phillippe Pinel (in 'A Treatise on Insanity' from 1801): mental illness mostly of hereditary and environmental influence.	Psychiatry emerged as a medical speciality and the diagnostic categories of mental health disorders were developed. Wilhelm Griesinger postulated that mental disorders are disorders of the brain. Freud began to develop the psychoanalytic theory.
Recommended treatment	Hippocrates: Bloodletting, emetic treatments. Plato: Discussions with a doctor or a philosopher Galen: Cooling the feverish, warming the chilled, treating in accord with the patient's temperament, age and way of life.	Europe: praying. Arab culture: baths, medicine, perfumes, music therapy, soothing surroundings with gardens and fountains.	Psychotherapy, venesection, perforation of the skull, chaining, whipping, starving, burning.	Pinel: moral treatment of insanity, included education, reasoning and persuasion.	Due to overcrowding of asylums, instead of Pinel's moral treatment, mostly only containment was offered.
Mental health services	Mostly patients with serious mental health disorders were left to be restrained by their families.	Europe: Monasteries, madmen's towers, cellaries. First psychiatric wards in the 13th century, first mental hospital in Valencia 1409. Arab culture: first psychiatric ward Bagdad 750, Cairo 873, first psychiatric hospital Damascos 800 and Aleppo 1274.	Work-related institutions, with features of penitentiary, workshop, madhouse and hospital.	Asylum treatment began	Asylum treatment spreads, asylums increased in size due to industrialization, urbanization and increasing population. First psychiatric hospitals for treatment of acute psychoses opened in Heidelberg in 1878 and in New York 1879. The first psychiatric clinic within a general hospital was founded in Rostock in 1825.

2.3.1.1 The history of psychiatric treatment in the 20th century

The American psychiatrist Adolph Meyer (1866–1950) developed the psychobiological theory, according to which mental health disorders are influenced by both biological and social factors. He recognized the need for common-sense counselling, psychotherapy and social services provided at outpatient clinics. By the 1920s, there were outpatient clinics in many central European psychiatric hospitals. New mental health professional groups emerged, such as psychiatric social workers, occupational therapists and clinical psychologists (Colp, 2005; Hyvönen, 2008).

The psychiatric treatment methods in the early 20th century were limited. In 1917, an Austrian psychiatrist named Julius von Wagner Jauregg reported having achieved remission from the psychiatric symptoms of patients with neurosyphilis through high fever caused by malaria. In 1933, the Austrian Manfred Sakel reported achieving remission from the psychotic symptoms of patients with schizophrenia via insulin shock therapy. Electroconvulsive therapy was first tested in Italy in 1938 by Ugo Cerletti (1877–1963) and Lucino Bini (1908–1964). In the mid-1930s, lobotomy was launched as a treatment for psychosis. The Portuguese neurologist Egas Moniz (1874–1955), who invented lobotomy, received the Nobel prize in medicine in 1949. Of these treatments, only electroconvulsive treatment has proven to be safe and effective and is still in use (Colp, 2005; Hyvönen, 2008).

The rise of eugenic theories and ideology also had an effect on psychiatry. Involuntary sterilization and during World War II under the Nazi regime in Germany, the systematic execution of persons with mental disorders is an utterly dark chapter in history (Colp, 2005; Hyvönen, 2008).

In outpatient settings, psychoanalytic treatment spread, especially in the U.S. and after World War II. The Austrian physician and psychotherapist Joshua Bierer (1901–1984) fled to England when Austria was occupied by the Nazis. He developed group psychotherapy in the 1930s and started the first therapeutic groups in psychiatric hospitals in 1939. He later developed and opened the first day hospitals in 1948 in England. The idea was to provide therapy and work-related activity for patients as a part of the therapeutic community. The community-based and social psychiatric approach provided an important alternative perspective that promoted the development of the mental health care system as a whole (Colp, 2005; Hyvönen, 2008).

The era of psychopharmacology began in 1952 when two French psychiatrists, Jean Delay and Pierre Deniker, reported the tranquillizing effect of chlorpromazine on patients with schizophrenia. In 1949, the Australian psychiatrist John Cade reported the favourable effect of lithium on mania. The U.S. Food and Drug Administration (FDA) approved the use of lithium in America in 1970. In 1957, tricyclic antidepressants and monoamine oxidase inhibitors were reported to be effective in the treatment of depression. In the 1960s, the first benzodiazepines were launched to treat anxiety. Since the 1980s, certain anticonvulsants have been used to treat bipolar disorder. The first selective serotonin reuptake inhibitors were developed for the treatment

of depression in the late 1980s. In the 1990s, psychostimulants were shown to be effective in the treatment of ADHD. Since the 1990s, second-generation antipsychotics have entered the market and new groups of antidepressants have been developed (Colp, 2005; Hyvönen, 2008).

The psychopharmacological development contributed to the deinstitutionalization process. The highest number of patients in asylums in the U.S. was reached in the 1950s, whereafter the deinstitutionalization process began. Since the 1970s, the development of community care progressed. In addition to pharmacological treatments, psychotherapeutic interventions were developed and scientific evidence of the effectiveness of specific psychotherapeutic interventions began to emerge . The antipsychiatry movement, which had its historical roots in the late 19th century, strengthened in the 1960s. It was associated with a politically left-wing critique of bourgeois values. Psychiatric diagnoses were claimed to be only a way of labelling and suppressing people who have difficulties in their lives. Thomas Szasz (1920–2012), a libertarian psychiatrist and psychoanalyst known for his antipsychiatric opinions, claimed that it is the mandate to use power that makes abuse possible. The antipsychiatric movement strived to end involuntary and even all psychiatric hospital treatment. The movement became less popular in the 1970s, but nevertheless, it may have contributed to the continuous downsizing of psychiatric hospitals and to the formation of patient organizations (Colp, 2005; Hyvönen, 2008).

In 1993, the international Cochrane collaboration started to produce systematic reviews of randomized clinical trials on the effectiveness of treatments (Chalmers, 1993, Wahlbeck, 2007). Randomized, double-blind controlled studies and systematic reviews of evidence have also become the core of clinical psychiatry as a science. Neuroimaging technologies and studies in genetics have widened the understanding of neurobiological phenomena and the genetic background of mental illnesses. The genetic background of even highly inheritable psychiatric disorders, such as bipolar disorder and schizophrenia, is highly polygenic in nature and partially overlapping (Geschwind & Flint, 2015). This can be interpreted as a sign of mental illnesses being inherently bound to us as human beings.

2.3.2 THE CURRENT PSYCHIATRIC TREATMENTS

Mental health disorders differ in modern treatment guidelines as to the relative importance of medication vs. psychosocial treatments. While good treatment is rarely solely medication, in some disorders, medication is an essential part of the treatment, for example, in bipolar disorder, schizophrenia and severe depression (Current Care Guideline Bipolar Disorder, 2021, Current Care Guideline Depression, 2021; Current Care Guideline Schizophrenia, 2020; Yatham et al., 2018). In some disorders, medication has only a small role in the treatment (for example, anorexia and dissociative disorders). In some disorders, psychosocial treatments and medication are

both shown to be effective and can be used optionally or augmentatively, such as for anxiety disorders and mild and moderate depression (Current Care Guideline Depression, 2021; Current Care Guideline Anxiety Disorders, 2019).

Light therapy is an effective treatment for seasonal depression. Neuromodulation therapies (electroconvulsive therapy (ECT), repetitive transcranial magnetic stimulation (rTMS) and transcranial direct current stimulation (tDCS)) are effective in the treatment of depression. In rare cases of the most severe depression that has not responded to any other treatments —and some very severe cases of obsessive-compulsive disorder—invasive neuromodulation treatments, vagal nerve stimulation (VNS) or deep brain stimulation (DBS) may be considered (Current Care Guideline Depression, 2021; Current Care Guideline Anxiety Disorders, 2019).

In substance use disorders, psychosocial treatments form the core of treatment, although there is no scientific evidence for some specific drug abuse problems. Medication may be needed in acute detoxification, selective extinction and aversion treatment of alcohol dependency, and in opioid maintenance treatment (Current Care Guideline Drug Abuse, 2018; Current Care Guideline Alcohol Dependency, 2015).

2.3.3 TREATMENT AS USUAL VS. SPECIFIC EVIDENCE-BASED TREATMENTS

In most mental health disorders, specific psychosocial treatments have been developed that show better results in recovery and/or relapse prevention than the so-called treatment as usual (i.e., clinical management and supportive care of patients). This holds true, for example, for dialectical behaviour therapy and mentalization-based therapy in the treatment of borderline personality disorder (Current Care Guideline Borderline Personality, 2020), cognitive therapy and interpersonal therapy in the treatment of depression (Current Care Guideline Depression, 2021), group psychoeducation in relapse prevention in bipolar disorder (Current Care Guideline Bipolar Disorder, 2021) and cognitive remediation in the treatment of cognitive symptoms of schizophrenia (Current Care Guideline Schizophrenia, 2020).

To provide specific treatments, a sufficient number of patients and personnel is needed. In small units of care, it is impossible to provide specialized treatments for all disorders. According to an English study, larger services, a larger proportion of experienced staff and applying evidence-based psychosocial treatments are associated with higher recovery rates in depression and anxiety disorders (Gyani et al., 2013). This challenges the mental health care system, especially in areas with low population density, since both low-threshold early interventions and highly specialized treatments need to be provided.

2.3.4 THE BALANCED CARE MODEL

According to Thornicroft and Tansella (2013), a modern, balanced care model in high-income countries consists of both primary care, general and specialized mental health care services. The tasks of the primary care mental health services are to find and assess cases, offer psychosocial and pharmacological treatments, and for more complex cases, offer consultation-liaison services. General (i.e. secondary) mental health care services include outpatient/ambulatory clinics that provide evidence-based interventions, multidisciplinary community mental health teams, acute inpatient care, long-term community-based residential care, and work and occupation services. Specialized mental health care (often called tertiary in Finland) includes the same service categories as general mental health care services but offers highly specialized services for certain relatively small patient groups, such as patients suffering from eating disorders, treatment-resistant affective disorders, and comorbid psychotic and substance use disorders (Thornicroft & Tansella, 2013).

2.3.5 THE STEPPED CARE MODEL

To increase the access and efficiency of mental health care, and as a way to optimize the delivery of evidence-based psychotherapies in the treatment of common mental health disorders, the stepped care model has been launched (van Stratten et al., 2014, Gyani et al., 2013, Nice Guidelines, 2011). The idea is that primary care patients with depression or anxiety disorder start with a low-intensity treatment as the first step, e.g. watchful waiting or psychoeducation. Those who do not improve enter the second step, which in the treatment of depression would be guided self-help through books or Internet therapy (van Stratten et al., 2014; Gyani et al., 2013; Nice Guidelines, 2011). The patients are monitored, and if they do not improve, the intensity of treatment is scaled up to the third step, and the patient is offered cognitive short therapy or interpersonal therapy. The last step would be referral to specialist mental health services. The model can be progressive, where all patients first go through step one and move on in order, or stratified, where the intensity of the intervention is matched to the severity of the patients' symptoms (Reeves et al., 2019). In a systematic review and meta-analysis of studies comparing stepped care to treatment as usual in the treatment of depression, the effect size of the stepped care was modest (d=0.38) (van Stratten et al., 2014). The progressive model showed worse results than the model without a clear treatment order (van Stratten et al., 2014). The stepped care model has been criticized for not applying to comorbid or persistent disorders (Rosenberg et al., 2020; Cross & Hickie, 2017). Also, there is limited information available on the real-world cost-effectiveness of the model (Reeves et al., 2019).

2.3.6 PRIMARY CARE MENTAL HEALTH SERVICES

The treatment of mild and moderately severe depression and anxiety disorders is typically provided in primary care. About 10% of primary care patients have depression (Vuorilehto, Melartin & Isometsä, 2005; Salokangas et al., 1996). Anxiety disorders are common in primary care, with 4% of patients having panic disorder (Roy-Byrne, Wagner & Schraufnagel, 2005), 4–8% having generalized anxiety disorder (Munk-Jørgensen et al., 2006) and 7% having social phobia (Stein et al., 1999). To improve the treatment of these common mental health disorders in the primary care setting, collaborative care models have been developed. Collaborative care, which involves a general practitioner, a case manager (most often a nurse) and a consulting psychiatrist within primary care, has been shown to be more effective than routine care in treating depression and anxiety (Archer et al., 2012). Central elements of the collaborative care model are a multi-professional approach to patient care, a structured management plan, scheduled patient follow-ups and enhanced interprofessional communication (Archer et al., 2012).

The role of primary care is also to recognize suspected severe mental health disorders, like psychotic disorders and bipolar disorder, and to refer these patients to secondary mental health services for diagnostics and treatment (Current Care Guideline Bipolar Disorder, 2021; Current Care Guideline Schizophrenia, 2020). Also, the follow-up and maintenance treatment of stabilized mental health disorders is provided in primary care.

2.3.7 MENTAL HEALTH CARE OUTPATIENT SERVICES

Scientific evidence on outpatient services is limited, although the clinical consensus is that they are a relatively efficient way to organize the provision of assessment and treatment of mental health disorders. Outpatient services are only a way of organizing services, and they are as effective as the forms of treatment they are offering. Outpatient services may be formed as multidisciplinary outpatient clinics at the community or specialized/tertiary level (Thornicroft & Tansella, 2013).

In Finland, mental health care outpatient services are part of the secondary and tertiary MHS. They are provided by the hospital districts or, in some cases, by the municipalities themselves. To access these services, a referral from primary care or a private doctor is most often needed.

2.3.8 HOSPITAL INPATIENT TREATMENT

While systematic data on clinical outcomes of psychiatric hospital inpatient care are mostly lacking, there is a clinical consensus that acute inpatient services are needed (Thornicroft, Deb & Henderson, 2016; Thornicroft & Tansella, 2013). Acute psychiatric inpatient treatment is recommended in cases of acute psychosis, mania and severe depression if there is a risk of

suicide or violence towards others, or if the functioning of the patient in his/her everyday life is severely disabled due to the acute psychiatric disorder and if other mental health services are not suitable (Current Care Guideline Depression, 2021; Current Care Guideline Bipolar Disorder, 2021; Current Care Guideline Schizophrenia, 2020).

The criteria for involuntary treatment in Finland are defined in the Mental Health Act. They include: (1) the patient must have a psychotic level disorder, and the patient must be either (2) at severe risk of endangering the health or safety of him/herself or others, or in danger of the mental illness worsening if not treated and (3) other mental services are not suitable or are inadequate (Mental Health Act, 1990).

Involuntary admissions are often traumatic to the patient and should be avoided whenever possible (de Jong et al., 2016; de Stefano & Ducci, 2008). Conclusive evidence for the efficacy of restraint and seclusion during inpatient hospital treatment is lacking, and these interventions should be avoided whenever possible (Taylor et al., 2009). Programmes to decrease the use of constraint and seclusion have been developed, which include staff education, supervision and influencing legislation (Taylor et al., 2009). The Nordic Network for Reducing the Use of Coercion in Care was founded in 2011 and functions in Finland as a project of the Finnish Institute for Health and Welfare.

For substance use disorders, hospital inpatient services are sometimes needed for acute detoxification or treatment of comorbid severe mental health disorders and substance use disorders. Inpatient detoxification services may also be provided by the social sector or specialized substance abuse services (Current Care Guideline Drug Abuse, 2018; Current Care Guideline Alcohol Dependency, 2015).

The fear of negative and even fatal consequences of the downsizing and closing down of psychiatric hospitals has seemingly not been realized. On the contrary, measured by mortality as a gross indicator, the deinstitutionalization process seems to have been successful so far. For example, in Austria, it has not led to an increase in the suicide rate (Vyssoki et al., 2011), and in Finland, the overall life expectancy of people with mental disorders has increased (Westman, Gissler & Wahlbeck, 2012), and more outpatient care oriented services are related to lower suicide rates (Pirkola et al., 2009; Pirkola et al., 2007). Contrary to the results from ecological studies, a systematic review of cohort studies found no evidence of increased homelessness or imprisonment among patients discharged from psychiatric hospitals as a consequence of deinstitutionalization (Winkler et al., 2016). If deinstitutionalization is carried out responsibly, the overall costs of community-based care of long-term patients are the same as those of hospital-based care (Thornicroft, Deb & Henderson, 2016). However, the satisfaction and quality of life of patients living in community residential services are higher than that of patients living under hospital circumstances (Thornicroft, Deb & Henderson, 2016; Taylor et al., 2009).

2.3.9 DAY CARE SERVICES

There are different types of psychiatric day care services that have different functions: (1) an alternative to inpatient treatment in acute care, (2) transitional care after acute inpatient treatment to shorten the length of inpatient treatment, (3) rehabilitation and maintenance treatment for patients with long-term disorders and (4) enhancement of treatment for patients who do not respond to outpatient care. The day care may be organized as (1) day hospitals that provide comprehensive multidisciplinary psychiatric care, (2) employment programmes or (3) informal programmes that provide a place for support, companionship and activities without specialized psychiatric care or employment services (Marshall et al., 2001).

In a Cochrane meta-analysis, it was found that acute day hospital treatment is as effective as inpatient care in treating patients with an acute psychiatric disorder (Marshall et al., 2011). It was estimated that at least 20% of the patients in inpatient treatment could be cared for in an acute day hospital. No difference in the readmission rate, treatment satisfaction, quality of life or unemployment was found between patients receiving inpatient vs. day hospital treatment. The treatment duration for day treatment was somewhat longer than for inpatient treatment. The cost-effectiveness of day hospital treatment still needs further investigation (Marshall et al., 2011). While studies have found that the direct treatment costs are mostly lower for day hospital treatment than for inpatient treatment, the picture is less clear if indirect costs are also considered (Heekeren et al., 2020, Marshall et al., 2011).

There is evidence that day treatment programmes are more effective than outpatient treatment in improving psychiatric symptoms but no better or worse in other aspects, including costs (Marshall et al., 2001).

Supported employment that places patients directly in employment has been shown to be more effective than prevocational training where preparation is provided before employment, measured as employment rate, number of working hours and earnings (Marshall et al., 2001).

2.3.10 NON-HOSPITAL RESIDENTIAL SERVICES

Some people with a severe mental health disorder (most often schizophrenia) need long-term residential services. The majority of these patients prefer to live in non-hospital (community) residential settings rather than in a hospital. There is no evidence on what the optimal size of a residential unit is. However, some features of residential services have been associated with better outcomes: service user involvement and autonomy, a greater degree of privacy, regular physical health screenings, integrated programmes of evidence-based psychosocial interventions and positive therapeutic relationships between staff and service users (Taylor et al., 2009).

The level of institutionalization in housing settings does not always reflect the level of functional impairment of the patient suffering from a severe psychiatric disorder (Valdes-Stauber & Kilian, 2015). And, instead of moving

on to less intensively supported housing through systematic rehabilitation, the housing type is often a long-time solution (Leff et al., 2009). According to a Finnish survey (Törmä et al., 2014), patients living in long-term residential services and their relatives hope that their living circumstances would be as independent as possible. They prefer services brought to the home of the patient rather than living under non-hospital but institution-like circumstances. In addition, patients want flexible support that meets their changing needs, meaningful day time activity and access to acute services providing crisis interventions. However, it was found that some of the non-hospital residential services are located remotely from services, are large and institution-like and do not provide adequate privacy, autonomy and rehabilitation for the patients. It was found that some of the residential service units do not meet the officially defined quality standards. In addition, it was found that some patients also live under institution-like circumstances when less intensive support would be sufficient. On the other hand, the hospital care of some patients was prolonged due to a lack of appropriate supported housing services (Törmä et al., 2014).

A further cost analysis study by Kettunen et al. (2015) showed that even intensive support provided to patients living in independent apartments does not result in increased overall costs compared to institutional non-hospital residential services. Besides lower costs, the privacy and autonomy of the patients are also better met in independent housing solutions. It was also found that Finnish municipal authorities didn't have a comprehensive picture of the mental health care residential services. This was especially notable in larger municipalities (Kettunen et al., 2015).

2.3.11 PEER SUPPORT

In a review of studies on the effectiveness of peer support in the treatment of severe mental health disorders, adding experts by experience to traditional services and peer-led structured interventions showed positive effects, such as a reduced need for hospital treatment, increased hopefulness and increased self-experienced recovery (Chinman et al., 2014). However, the evidence was contradictory. In a systematic review and meta-analysis, no evidence of the effectiveness of peer support in the treatment of severe mental health disorders was found (Lloyd-Evans et al., 2014).

In the treatment of substance use disorders, evidence of the effectiveness of peer support is stronger. In the treatment of alcohol dependency, the peer-led 12-step programmes are as effective as other psychosocial treatments in reducing the use of alcohol and in promoting adherence to treatment (Ferri, Amato & Davoli, 2006).

2.3.12 INTERNET-BASED TREATMENTS

Internet-based therapy has been shown to be as effective and more cost-effective than face-to-face therapy in the treatment of panic disorder, generalized anxiety disorder, social phobia and depression (Andrews et al., 2018). According to the current Finnish care guidelines, internet-based therapy is recommended as a treatment for mild and moderately severe depression and for social phobia and panic disorder (Current Care Guideline Depression, 2021; Current Care Guideline Anxiety Disorders, 2019). In bipolar disorder, internet-based therapy may relieve symptoms of mild depression (Current Care Guideline Bipolar Disorder, 2021). The COVID-19 pandemic has boosted the use of web-based delivery modes for psychiatric treatment and collaborative care, like video meetings. Development and benefits from these forms of delivery can be expected in the very near future.

2.3.13 THE TREATMENT GAP

Estimates on the percentage of persons suffering from mental health disorders who do not receive even minimal care range from one-half to two-thirds. By contrast, only 10% of persons with diabetes are without treatment (Hewlett & Moran, 2014). According to a Finnish study, 40.9% of young adults with a depressive disorder received minimally adequate treatment (Kasteenpohja et al., 2015), which is a higher percentage than in previous studies (Hämäläinen et al., 2009; Haarasilta et al., 2003). Minimally adequate treatment was defined as (1) antidepressant pharmacotherapy for a minimum of two months with at least four visits with a physician, (2) a minimum of eight sessions within the past year with a mental health professional in a psychiatric clinic or with a psychiatrist, psychologist or psychotherapist in other settings, or (3) at least four days of hospital inpatient treatment (Kasteenpohja et al., 2015).

By contrast, according to a Finnish survey, virtually all patients with schizophrenia had had treatment contact and had used antipsychotic medication at some time. Over 70% of them had current psychiatric treatment contact and 65–92% were using antipsychotic medication. In the same study, of the patients with delusional disorder, 81% had psychiatric treatment contact at some time, but only 21% had current treatment contact and 14% were currently using antipsychotic medication (Suvisaari et al., 2016).

2.4 SOCIODEMOGRAPHIC INDICATORS AND THE USE OF MENTAL HEALTH SERVICES

Sociodemographic disadvantagement is associated with a higher prevalence of mental disorders (Perälä et al., 2008, Lorant et al., 2007; Lorant et al., 2003; Reijneveld & Schene, 1998). Regional sociodemographic features, such as the unemployment rate and percentage of single households, are associated with

a higher use of psychiatric hospital care (Peen & Dekker, 2001; Dekker et al., 1997). Sociodemographic indicators may predict less strongly the use of services in rural vs. urban settings (Thornicroft, 1993).

As to the relation of sociodemographic variables to the use of outpatient services, the results are more contradictory. In some countries, a higher educational or income level has been associated with greater use of specialized mental health care services for mental health problems instead of primary care services (Park et al., 2014; ten Have et al., 2003; Alegría et al., 2000). In a Finnish survey, the use of primary or specialized mental health services by patients with major depression was not predicted by sociodemographic factors (Hämäläinen et al., 2004). The duration and severity of depression and perceived disability were associated with the use of services but not whether treatment was received in primary or specialized psychiatric care (Hämäläinen et al., 2004). In a later study, similar results were found, except that psychiatric comorbidity and living alone also predicted health care use for major depression, and psychiatric comorbidity also predicted the use of specialist-level mental health services (Hämäläinen et al., 2008).

2.5 MENTAL HEALTH CARE IN FINLAND

2.5.1 THE HISTORY OF MENTAL HEALTH CARE SERVICES IN FINLAND

The history of mental health care services in Finland from the 14th to the 19th century is summarized in Table 2.

Table 2. *History of mental health care in Finland from the 14th to the 19th century*

Table 2. The history of mental health care in Finland from the 14th to the 19th century (Achte 1983, Kärkkäinen 2004, Hyvönen 2008, Parpola 2013)				
The era	14th to 15th century	17th century	18th century	19th century
The regime	1323 Finland officially became a part of Sweden			Finland became a part of Russia in 1809 and received a state of autonomy.
Legislation and administration	1527 the King Gustav Wasa of Sweden declared himself as the head of the church and the owner of the properties of the church.	Church law 1686 obligated parishes to take care of all of the mentally ill patients.	The state begins to take care of the mentally.	1840 the Czar's passed a decree on the organization of mental illness care. It separated mental illnesses from other debilitating conditions. The Czar's decree from 1889 stated that the municipalities should provide in poorhouses special wards for the mentally ill. Also, municipalities and private persons and companies were allowed to build mental hospitals. The main responsibility of providing mental health care was still on the state.
Mental health services	Institutions that were combinations of madhouses, poorhouses and hospitals. Two charity shelters provided by monasteries, partly inhabitated by patients with mental disorders. Mostly the mentally ill were taken care by the families.	Hospital of Seili grounded 1619 and hospital of Kruununpyy grounded 1631, both served patients with lepracy and with mental disorders	General hospitals (lääninlasaretti) were grounded in the end of the century in Turku, Vaasa, Hämeenlinna, Oulu, Kuopio, Heinola and Viipuri. In 1776 in there were 2 physicians per 100,000 population.	The Kruununpyy hospital was closed. In 1841, the Lapinlahti hospital was opened. Special departments in the general hospitals for psychiatric patients were grounded. If the mental illness was assessed as noncurable, a place in the Seili asylum was applied for lifetime. In 1800 there were 2,4 physicians per 100,000 population, in 1860 the number was 5,4 and in 1870 7 per 100,000. In the 1870's, there were altogether 10 psychiatric hospital beds per 100,000 population, and in 1900, 38 beds/100,000. Niuvanniemi hospital was opened in 1885. Waiting time to the mental hospitals was long, and acute patients were often taken to the poor houses, where there was no medical control. The first municipal mental hospital was opened in Turku in 1892.
Treatment		Prayers and penances in hospitals. Villages moved the patients from one house to another, sometimes with chains that were attached to the wall of the house	The patients that were considered curable were treated in general hospitals led by doctors. The non-curably ill were treated in the Seili and Kruununpyy hospitals led by priests.	In Lapinlahti hospital, emetics, lacatives, enemas, venesection, etheric oils and a lot of restrainment were used. The non-restrainment, enlightenment ideas arrived in Finland in the end of the 1850's and were put to practice in Lapinlahti hospital. However, the restrainments were taken back after a while. In the 1840's, the district doctor started visiting the Seili hospital, and in 1897 the municipality of Nauvo got its' own doctor, to whose responsibility belonged also the Seili hospital.

2.5.1.1 Finnish mental health care at the beginning of the 20th century

The municipal mental hospital network in Finland began to evolve at the end of the 19th century. In 1900, the total number of psychiatric hospital beds reached 1000 (38 beds per 100,000 population). However, it was recognized that this was not sufficient. The inhumane conditions in families and poorhouses that the mentally ill lived in were recognized. The eugenic doctrines partly contributed to the idea that the mentally ill should be insulated from the rest of society (Parpola, 2013; Hyvönen, 2008; Kärkkäinen, 2004).

The criteria for state subsidies were reformed in 1911 and further in the 1920s, which led to the building of municipal and joint municipal (piiri) hospitals (Parpola, 2013). In some towns, departments for the mentally ill in municipal poorhouses were converted into municipal mental hospitals. In 1914, the Nikkilä hospital of Helsinki city was opened in Sipoo. The Hatanpää hospital in Tampere was opened in 1916. Joint municipality hospitals were also built. In 1903, the Harjavalta hospital was opened, and in 1915, the Kellokoski hospital was opened. Family treatment of the mentally ill was provided to a small extent in the Seili hospital from 1887. This type of care was supported by the state, and it received more attention at the beginning of the 20th century. It was seen as offering a cheaper option to hospital care and freeing hospital places for other patients (Hyvönen, 2008).

Biomedical thinking in psychiatry was ruling, and the care was hospital-centred. In the 1920s, malaria therapy was taken into use; in the 1930s insulin shock therapy; and in the 1940s, the ECT. Occupational therapy was also developed. The eugenic theories' influence was reflected in the law of sterilization from 1935, and involuntary sterilization of persons with mental disorders was legal until 1970. Lobotomy was introduced in Finland in 1945 (Parpola, 2013; Hyvönen, 2008).

2.5.1.2 The era of mental health districts and A- and B-hospitals

The first Mental Illness Act in Finland (1937) stated that the mentally ill could be treated in state, municipal or private mental hospitals, in municipal homes, in nursing homes and in private home family treatment. However, all forms of treatment should be regularly controlled by a physician. In 1943, a committee led by Juho Erland Pilppula stated that the whole mental health care system should be arranged according to common principles. The Pilppula committee recommended prevention (which meant sterilization) and cost-effective treatment. The new Mental Illness Act was accepted in 1952. It followed some of the recommendations of the Pilppula committee. The country was divided into 18 mental health districts, which were under the control of the national board of health. The municipalities were responsible for organizing mental health care. In each mental health care district, there was to be a central mental hospital (the so-called A-hospitals) for acute care and an outpatient

unit. The law differed from Pilppula's recommendation in that for the chronically ill, calm patients, new kinds of hospitals were to be provided, the so-called B-hospitals. The departments for the mentally ill in the municipal homes were allowed to continue functioning, for which state subsidies were provided (Parpola, 2013; Hyvönen, 2008).

The building of B-hospitals was subsidized by the state from 1955. In mental hospitals, neurological and psychogeriatric patients were also treated. Whereas in many other Western countries, the deinstitutionalization process began in the 1950s, in Finland, the number of hospital beds increased steeply during the 1950s and 1960s and remained high in the 1970s. In 1952, there were less than 244 mental hospital beds per 100,000 inhabitants. In 1975, the number of mental hospital beds had increased to 420 per 100,000 inhabitants, which was among the highest numbers in the world. In 1963, there were still 2700 mentally ill persons in municipal homes (60 beds per 100,000). Institutional care dominated the thinking and use of resources, not only in mental health care but also in general health care, the care of tuberculosis and the social sector care of persons with developmental disorders and persons with substance abuse (Hyvönen, 2008; Kärkkäinen, 2004).

2.5.1.3 Outpatient care and psychotherapy evolve

The development of municipal outpatient care was slow and began to accelerate in the 1960s. In the beginning, outpatient clinics focused on the aftercare of patients who had been released from mental hospitals, and the control of the psychiatric department of the municipal homes was also their duty. Acute care became part of outpatient care in the 1960s (Hyvönen, 2008).

New medications invented in the 1950s were quickly taken into use in Finland. Occupational therapy and rehabilitation were developed in the central mental hospitals, and more scientific articles were published (Hyvönen, 2008). Psychoanalysis came to Finland slowly. In the 1920s, there was only one psychoanalyst in Finland (Hirvonen, 2014). The first course in psychoanalysis in Finland started in Helsinki in 1959, and in 1965, the first official course approved by the International Psychoanalytical Association IPA started. The paradigm changed quickly from biological to psychoanalytical psychiatry, and by 1972, all four university professors in Finland were psychoanalysts (Parpola, 2013). Awareness and practice of group, family and behavioural therapies and therapeutical communities also arrived in Finland. Neurology and psychiatry were separated as medical specialities in 1961. In the 1970s, social psychiatry influenced psychiatric thinking. The holistic view of the human being started to gain influence during the 1970s (Parpola, 2013; Hyvönen, 2008).

2.5.1.4 Social security and general hospital and primary care acts

The Social Insurance Institute of Finland (Kela) was established in 1937, and the first disability pensions were issued in 1942. The Health Insurance Act of 1964 extended social insurance coverage to sickness allowance, medical assessment and treatment given by doctors, medications and travelling expenses for medical care (Parpola, 2013; Niemelä, 2014).

In general health care, in 1943, the Central Hospital Act was accepted, and between 1947 and 1951, 21 central hospital districts were established. Tuberculosis care was organized separately in tuberculosis hospitals, and from 1950, care was organized in tuberculosis districts (Kärkkäinen, 2004).

The Primary Health Care Act came into force in 1972, and accordingly, a network of municipal health centres was established. Mental health care was not mentioned in the legislation, but in the preparation process of the law, it was noticed that the law obligated the health centres to provide mental health care. In 1978, a law was passed that made it possible to integrate the mental health district, the tuberculosis district and the central hospital district into one hospital district. Between 1979 and 1990, 12 such integrated hospital districts were formed (Kärkkäinen, 2004).

2.5.1.5 The beginning of deinstitutionalization

The Mental Illness Act was modified in 1977, strengthening outpatient care by bringing rehabilitation, residential facilities and sheltered workshops under state subsidization. Outpatient clinics were supplemented with day hospital activity, and they were also obliged to take care of the prevention of mental disorders together with the health centres. The division of hospitals into A- and B- hospitals was ended. Also, indications of involuntary care were tightened (Hyvönen, 2008; Kärkkäinen, 2004).

In 1977, the medical board committee (lääkintöhallituksen työryhmä) led by Raimo Miettinen published a plan for the development of mental health care. It was recommended that the number of hospital beds should be decreased from 420 beds per 100,000 inhabitants to 340 by 1986 and to 260 by 1996. The unfavourable effects of long-term inpatient hospital treatment on both the patients and attitudes towards patients were highlighted. Outpatient care was mentioned as the primary treatment, and hospital treatment was recommended to be temporary, short and actively rehabilitative. A strong increase in resources for outpatient care and prevention was recommended. The building of housing services and day hospitals was recommended, and the elderly and patients with developmental disorders and substance abuse disorders were to be removed from the mental hospitals. A long-term plan was to build a psychiatric department in each general hospital (Parpola, 2013; Hyvönen, 2008; Kärkkäinen, 2004).

In 1984, the mental health committee (mielenterveystyön komitea) recommended the integration of mental health care into general health care.

Most of the old mental hospitals should be closed by 2000, and the difference between general and psychiatric hospitals should be abolished. It was estimated that 140–200 hospital beds per 100,000 inhabitants and 40–70 beds per 100,000 in non-hospital residential services, and the same number of places in day hospitals would be needed by the year 2000 (Parpola, 2013; Hyvönen, 2008; Kärkkäinen, 2004).

Half of the patients in the mental hospitals suffered from schizophrenia. The Schizophrenia Project, started by Yrjö Alanen in 1981, was a national developmental project that aimed at reducing the number of patients in long-term institutional care and developing the outpatient services. The project was successful, and the number of schizophrenia patients in mental hospitals decreased by 68% between the years 1982 and 1992 (Parpola, 2013; Tuori, 2011). Another major project in the 1980s was the suicide prevention project. The number of suicides in Finland increased until 1990 and then started to decrease. By 2001, the number of suicides had decreased by 20% in males and 19% in females from the peak levels in 1990 (Parpola, 2013; Hyvönen, 2008).

In the 1980s, the deinstitutionalization process began, and the number of mental hospital beds decreased from 20,000 to 12,300 during the 1980s. By 1992, the number of beds was 9,730 (that is, 190 beds per 100,000 inhabitants). In 1993, there were 150 beds per 100,000 inhabitants and in 1999, there were 106 beds per 100,000 inhabitants (Hyvönen, 2008; Nenonen et al., 2001). The number of personnel in outpatient care was 2.5 per 10,000 in 1982 and increased to 5.1 per 10,000 inhabitants by the year 1992. In 1999, the number of personnel in outpatient care was 4.8 per 10,000 inhabitants (Tuori, 2011; Hyvönen, 2008; Pylkkänen, 2000). The number of personnel in outpatient care, which had been recommended by the State Medical Board, was 6.5 per 10,000 inhabitants (Pylkkänen, 2000).

2.5.1.6 The Act on Specialized Medical Care, the Mental Health Act and the Act on State Subsidies

In 1991, two laws, the Act on Specialized Medical Care and the Mental Health Act, came into force at the same time. The Act on Specialized Medical Care ended the former mental health districts, tuberculosis districts, central hospital districts and various other smaller joint municipal districts (that, for example, supported a local hospital) that had been partially non-overlapping and of which at the high point there were over 100. Twenty-one hospital districts were formed, and psychiatry was included as a medical speciality, among others. Until the 1980s, the mental health care system in Finland had developed mostly in isolation from other health care services, except for the small-scale hospital care in the general hospitals from the beginning of the 19th century until the 1930s and general hospital psychiatry activity that had begun in the 1960s. The Act on Specialized Medical Care administratively integrated mental health care with other health care services. (Kärkkäinen, 2004; Pylkkänen, 2003; Parpola, 2013).

The Mental Health Act finally replaced the old Mental Illness Act and its modification. The new law used a broad definition of mental health care, both as promotion of the individual's well-being, functioning and personal growth and as prevention, treatment and alleviation of mental health disorders. The outpatient treatment and the development of the living conditions of the population were seen as primary interventions. The organizing of mental health care was the responsibility of the municipalities. The law included a decree on the use of involuntary treatment, shortening (for example) the maximum length of involuntary treatment. The law also included a decree on the duty of the municipalities to arrange suitable mental health services in the health centres (Mental Health Act, 1990; Parpola, 2013).

In 1991, the medical board was also abolished, and its functions were at first united with the social government to form the social and health government. But already in 1992, the system was reformed, and Stakes was founded as the research and development centre of the social and health sector. Whereas the medical board had controlled the use of state subsidies, Stakes had more of a role in steering through knowledge. In 2009, Stakes united with the institution of population health and formed the National Institute of Health and Welfare (Kärkkäinen, 2004).

In 1993, the new law on state subsidies to the municipalities enabled the municipalities to provide health services – by themselves or in collaboration with other municipalities or by belonging to a joint municipal authority, or by purchasing the services from a private provider. Also, the subsidies were to be based on prior calculations instead of the formerly used posterior calculations based on real expenditures. This changed the role of the hospital districts; they became producers from which the municipalities bought services. The independence of the municipalities in arranging the services increased. The new law on municipalities was launched in 1995 (Hyvönen, 2008).

According to a survey study, in 1995, 77% of the municipalities had purchased psychiatric outpatient care only from the hospital district, but in 1999, only 61% did so. Many municipalities provided psychiatric outpatient care partly or totally in health centres. Great differences in personnel resources were found between hospital districts. The aim of developing primary health care services was to decrease costs, lower the threshold for services and connect psychiatric outpatient care with primary care services. The risks were the disintegration of services into small units, resulting in a weakening of expertise, the fleeing of professionals from public health care and an increase in the total volume of services (Tuori, Kiikkala & Lehtinen, 2000).

The number of patients in non-hospital residential care remained at the same level in 1990–94, but between 1995 and 2003, the number increased 2.5-fold. Towards the beginning of the 2000s, these services were increasingly bought from private providers (Pirkola & Sohlman, 2005). During the 2000s, the development of outpatient and day care services was also seen, but

information on the distribution of personnel resources was lacking (Tuori, 2011).

2.5.1.7 The economic depression in the 1990s

The economic depression at the beginning of the 1990s in Finland decreased the tax income of the municipalities, and from 1993, state subsidies were cut every year. This led to austerity policies both in the investing and buying of services from private providers. The personnel resources are considered to be a good estimation of the costs of mental health care, but exact information on personnel resources in the 1990s is not available due to the shattering of the decentralized service system and the lack of statistics (Hyvönen, 2008). It is estimated that between 1991 and 1994, mental health care resources were cut by 40% or even 60%. The development of primary care mental health services could not compensate for the loss of specialized care. While resources were cut, productivity increased; the average length of stay in psychiatric hospitals shortened, and the number of outpatient visits increased. After the depression, the situation got better, but the decrease in resources was estimated to be as high as 26% between the years 1990 and 1997 (Hyvönen, 2008; Kärkkäinen, 2004). The third sector rapidly increased its provision of health and social services in the 1990s. Mental health associations, the church, A-klinikkasäätiö and foundations for patients and relatives increased their activity (Parpola, 2013).

In the 1990s, the public sector in Finland was renewed according to the principles of New Public Management (NPM), whereby the mechanisms of the market economy were brought to the public sector. The leadership principles from the private sector were brought to public health care, with the focus on productivity and controlling costs. Some services were outsourced and put to tender, and some were incorporated (Ahonen, 2019).

Finland joined the EU in 1995, and at the beginning, mental health was not a priority on the population health agenda. In the populational health programme of the EU from 2002, mental health is mentioned separately. The need to coordinate services and to strengthen the cooperation of service providers both vertically and horizontally was recognized (Hyvönen, 2008).

2.5.1.8 The development of psychiatric care from the 1980s

Fluoxetin was accepted in the Finnish medical market in 1988. During the 1990s, several other new antidepressants entered the market. After the mid-1990s, new, atypical antipsychotics entered the market. The use of antidepressants increased fivefold during the 1990s. In 1984, the medical board had defined common criteria for psychotherapy training, and in 1994, psychotherapist became a protected profession, the use of which required acceptance from the National Authority for Medicolegal Affairs. Since 1992,

Kela has subsidized psychotherapy as rehabilitation for persons of working age. The organizing of psychotherapy by Kela became statutory in 2011. The aim of Kela psychotherapy is to restore or support the working ability of the individual (Tuulio-Henriksson, 2013). This system favours a high-income working population since a significant part of the costs of psychotherapy is left to the patient (Hiilamo et al., 2010).

The ICD-9 diagnostic classification system was launched in Finland in 1986/87. In the late 1980s and 1990s, there was increasingly more empirical research that used methodology from the natural sciences. Studies using new neuroimaging technology brought psychiatry closer to the neurosciences again. Significant epidemiological studies were carried out, such as Mini-Suomi, Ukki and Health 2000 (Parpola, 2013).

In 1994, Duodecim, a Finnish medical society, started publishing current care guidelines, which are evidence-based guidelines for clinical practice. The first Finnish current care guideline for the treatment of schizophrenia was published in 2001, for the treatment of depression in 2004, and for the treatment of bipolar disorder in 2008. The first decade of the 21st century brought a paradigm shift – the integration of biological and psychological psychiatry (Parpola, 2013; Hyvönen, 2008).

Ahonen (2019) states that mental health politics during the last decades have increasingly focused on the prevention of mental health disorders and the care of milder mental health disorders and forgot about the care of severely ill patients. Patients suffering from severe mental health disorders are isolated, living under institutional long-term residential care and outside of the working life. Instead of work activities that were formerly provided in psychiatric hospitals, people with severe mental disorders participate nowadays in various other ostensible work activities provided by the service system. These work activities are often monotonous, unpaid and do not take into account the person's interests and strengths. Sometimes this type of work activity can even be seen as exploitation. Ahonen proposes that the focus of the service system should be to support human dignity, human rights and the prerequisite for a good life for the most severely ill (Ahonen, 2019).

According to Alanko (2017), the downsizing of psychiatric hospital beds and the inclusion of persons with mental disorders in the labour force have been central themes in Finnish mental health policies since the 1970s (Alanko, 2017).

2.5.2 THE USE OF MENTAL HEALTH SERVICES IN FINLAND FROM 1994–2016

In Finland, from 1994 to 2016, the number of psychiatric hospital inpatient days decreased by 57%, from 579 to 249 days per 1000 adults per year. During the same period, the number of specialized psychiatric care outpatient visits has increased by 20%, from 285 to 340 per 1000 adults per year. The number of primary care visits related to mental health issues has risen sevenfold, from

18 to 144 visits per 1000 inhabitants (Sotkanet) (Figure 1). The number of patients in non-hospital psychiatric residential care in 1997–2016 increased by 412%, from 3.4 to 14.2 per 10,000 adults (Figure 2).

In 2016, 57% of all patients using specialized mental health services were female. Of outpatient service users, 57% were female. Of psychiatric hospital inpatient service users, 52% were female. Of inpatient service users aged 25–64 years, 46% were female. Between the years 2006 and 2016, the number of patients per 10,000 inhabitants in outpatient services had risen from 245 to 317. The number of patients in psychiatric hospital inpatient services remained pretty stable from the beginning of the 1990s (Tuori, 2011), but between 2006 and 2016, there was a decrease from 56 to 42 patients per 10,000 inhabitants. The number of outpatient visits per patient per year has risen only slightly, from 10.8 to 11.8 (THL, 2017).

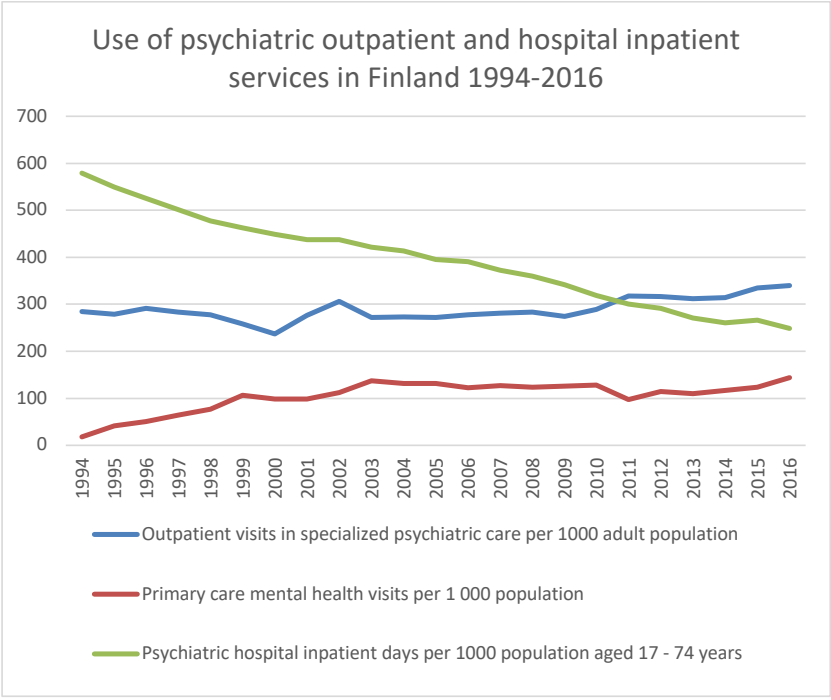

Figure 1 Source: www.sotkanet.fi

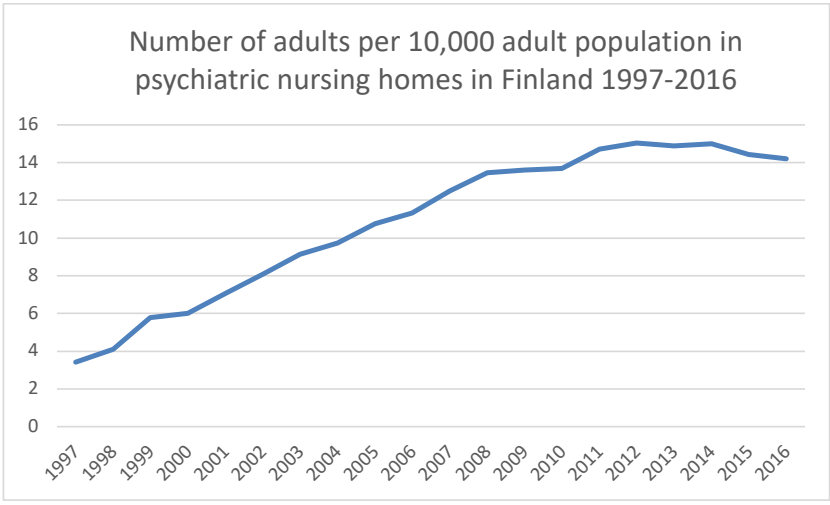

Figure 2 Source: www.sotkanet.fi

2.5.3 THE TRENDS IN THE USE OF MEDICATION, DISABILITY PENSION RATE, SICKNESS ALLOWANCE RATE AND SUICIDE RATE IN FINLAND

In Finland, the suicide rate dropped 48% from 1994 to 2016: from 27.3 per 100,000 inhabitants to 14.3 per 100,000 inhabitants (Figure 3). The proportion of persons receiving reimbursement for antidepressant medication more than tripled from 1994 to 2009, but since then, it reached a steady state, and from 2015–16, it somewhat decreased (Figure 4). The percentage of the population receiving special reimbursement for antipsychotic medication during the same period increased from 1.4% to 1.8% but has remained stable since 2006 (Figure 5) (Sotkanet).

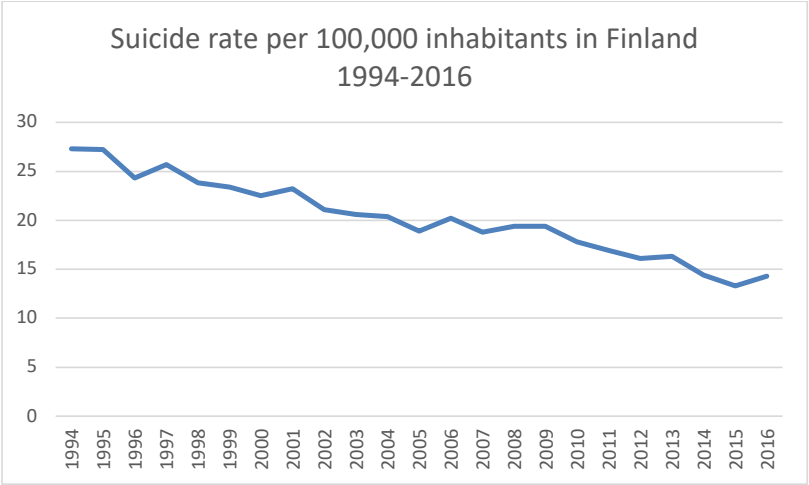

Figure 3 Source: www.sotkanet.fi

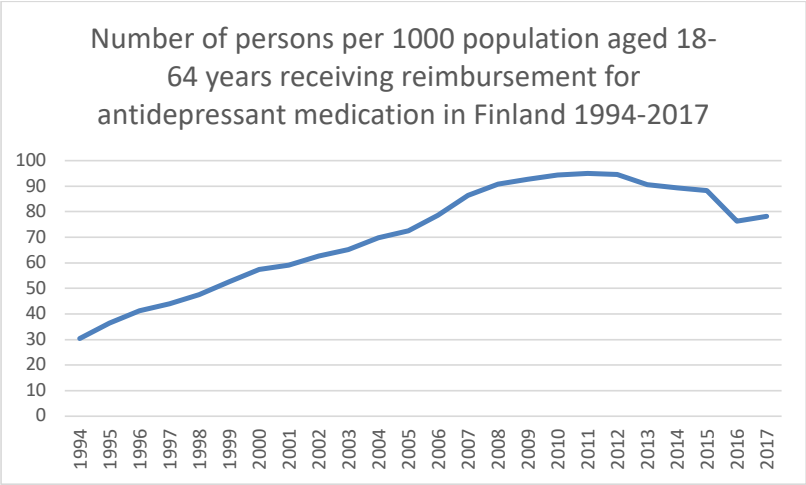

Figure 4 Source: www.sotkanet.fi

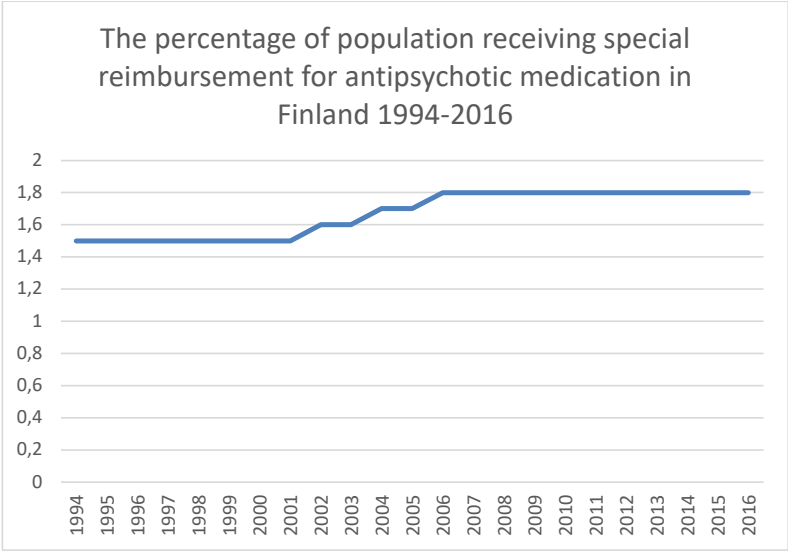

Figure 5 Source: www.sotkanet.fi

The percentage of the population on a disability pension due to a mental health disorder rose from 2.9% to 3.4% between 1996 and 2008 and decreased to 3% by 2017 (Figure 6). The percentage of the population receiving a sickness allowance has increased during the last years, and in the younger population (age 18–24 years), the increase has been steady since 2004 (Sotkanet)(Figure 7).

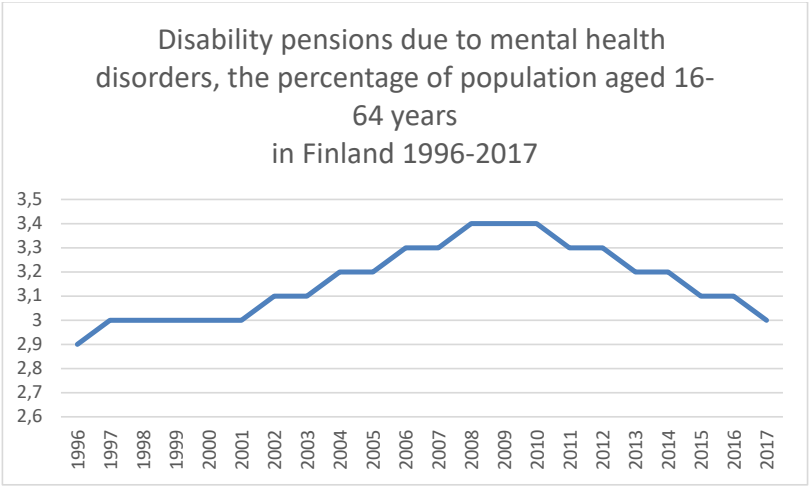

Figure 6 Source: www.sotkanet.fi

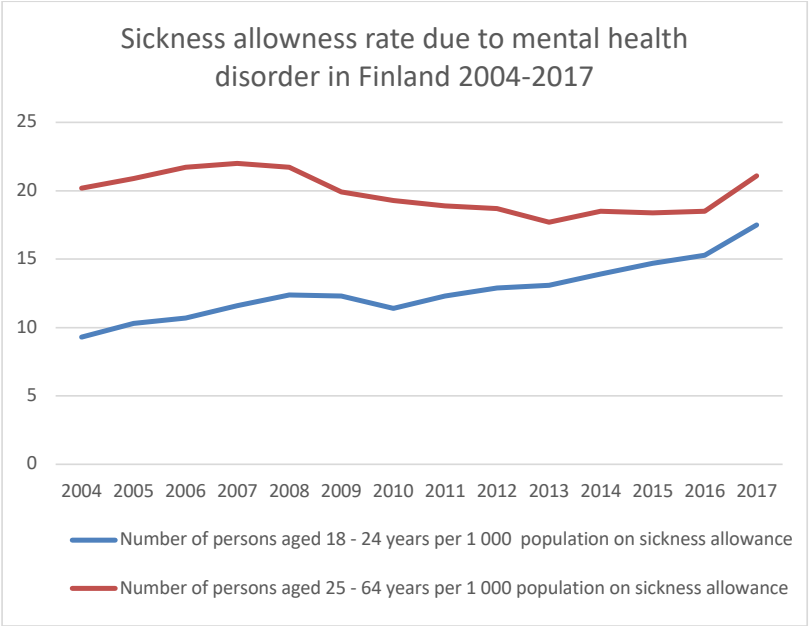

Figure 7 Source: www.sotkanet.fi

2.5.4 MIELI 2009

The first national mental health care plan in Finland after the work done by the mental health work committee in 1984 was Mieli 2009, the National Plan for Mental Health and Substance Abuse Work for the years 2009–2015. It was prepared by a working group set up by the Ministry of Social Affairs and Health (Mieli, 2009). The plan promoted the strengthening of preventive work and the position of the service users, the development of the service system and making steering more efficient. Goals recommended in the plan included the integration of mental health and addiction services both physically and administratively, the provision of psychiatric nurse services in primary care services as low-threshold mental health care services, providing consultation services from specialized psychiatric care at the primary care level, developing more diverse outpatient and home and mobile services, a progressive closing down of separate psychiatric hospitals, the provision of psychiatric wards in general hospitals and inclusion of representatives of service users in the administration and evaluation of services (Mieli, 2009). It was estimated that these changes would result in a reduction in the number of psychiatric hospital beds from 4,600 to 3,000. The steering group for the implementation of the plan assessed that 'the experts by experience and peers were included in the activities, psychiatric involuntary treatment was used less, mental health and substance abuse work strategies were included in municipal strategies, and support for work ability and returning to work were strengthened in the occupational health care. All the objectives were not achieved, which was

partly due to the scarce resources available for the coordination and implementation of the plan (Mieli 2009, 2016) .

2.6 SERVICE MAPPING STUDIES

In order to develop the MHS, information about current services and comparison data from other areas is needed. However, the information on service types, personnel resource allocation, service capacities and productivity is scattered among the various service providers and organizations, not collected systematically and therefore not readily available for analysis or as the basis for decision-making. For a standard comparison of services, the Description and Evaluation of Services and Directories for Long Term Care (DESDE-LTC) mapping instrument was developed (Salvador-Carulla et al., 2013). It was developed from the European Service Mapping Schedule (ESMS), which was developed to classify and standardize the mapping of adult mental health services in Europe by the EPCAT team (European Psychiatric Assessment Team) (Johnson, Kuhlmann & EPCAT Group. European Psychiatric Assessment Team, 2000). These mapping instruments have been used internationally, and so far, over 25 mental health atlases using the DESDE-LTC instrument, combined with the analysis of the socioeconomic context and service use, have been developed in different areas and countries, including Spain (Fernandez et al., 2015), Australia (Van Spijker et al., 2019, Fernandez et al., 2016,) Chile (Salinas-Perez et al., 2018), and remote areas in Canada, Finland and Australia (Salinas-Perez et al., 2020).

A comparative study between Italy and Spain using the ESMS tool found that in Italy, the innovative community service structure was associated with lower use of hospital beds, higher use of day services and larger number of contacts in the community services, whereas in Spain, the use of hospital beds was low despite the sparsity of community-based services (Salvador-Carulla et al., 2005). Another study using the ESMS tool compared northern Norway and Archangel county in Russia and found that more differentiated and decentralized services were associated with lower use of hospital care in Norway (Rezzvy et al., 2007). In Russia, the resources were mostly in institutional care, and the provision of outpatient care was sparse, especially in rural areas.

A study from the European REFINEMENT project revealed significant variation in the availability and capacity of mental health services across the MHS of local areas in eight European countries (Gutiérrez-Colosía et al., 2017). From the Finnish branch of the REFINEMENT study, the results have shown that the diversity of MHS correlates significantly with the size of the population (Ala-Nikkola et al., 2014) and that the strongest positive correlation is found in third-sector activities (Ala-Nikkola et al., 2016b). The

diversity of outpatient services did not correlate with psychiatric inpatient treatment provision, but the Mental Health Index (MHI) did (Ala-Nikkola et al., 2016a).

In Finland, there have been no studies on the number of personnel resources allocated to various MHS service types (outpatient, day care, residential care), various levels of organization (primary care, specialized care) and different professional groups, and how this relates to the sociodemographic indicators of need and costs of the services. The information on personnel resources has been scattered among various organizations, such as social and health care, and in public, private and third-sector organizations. A common register has not been available. While benchmarking information on the service structure and the level of personnel resources has been lacking, the MHS personnel resource allocation in municipalities has been the result of various local historical, economic and political factors. Information on service types and personnel resources, however, is crucial when developing MHS, with the increasing public awareness of the importance of mental health issues and concern for the carrying capacity of the public health care services. This is especially topical in Finland, with the health and social services reform currently underway (Health and Social Services Reform, 2021).

2.7 MENTAL HEALTH SERVICES IN SPAIN

In Spain, the public health care system SNS (National Health System) is funded by taxes. Like in Finland, the public mental health services in Spain are free of charge at the point of delivery. Patients enter the MHS mostly through primary care, which has a gatekeeping function (Dezetter et al., 2013). Primary care refers the more severely ill patients to secondary psychiatric care provided at community mental health centres. Governance of health care is devolved to the autonomous communities, and 17 regional health ministries hold primary jurisdiction over the organization and delivery of health services within their territory.

When developing accessible and cost-effective MHS, comparative benchmarking data between countries is important (Wahlbeck, 2011). While Finland and Spain have a partly comparable financing system for the MHS, differences exist in the culture and economic and sociodemographic features between the countries. A comparison between the MHS in Spain (a Mediterranean, family-centred country) and Finland (a Nordic welfare state) has not previously been made. It is of interest how the MHS reforms have been implemented in these countries.

3 AIMS OF THE STUDY

This study investigated the structure and personnel resource allocation of mental health services and their relation to total personnel costs, the costs and use of specialized psychiatric care, and sociodemographic indicators.
The specific aims of the study were to investigate:

I The interrelationship of the amount of primary care mental health personnel, the costs and use of specialized psychiatric services, and the sociodemographic variables of the HUS area municipalities.

II The structure, personnel allocation and output of the mental health services in southern and northern Europe.

III How the personnel resource allocation in local vs. centralized MHS is interrelated.

IV How the personnel resource allocation in non-hospital residential services is associated with the total costs of the MHS.

4 METHODS

4.1 THE REFINEMENT PROJECT

This study is part of the European Research on FINanacing systems' Effect on the quality of MENTal health care (REFINEMENT) project, which was carried out in 2011–15 in nine European countries: Austria, England, Estonia, Finland, France, Italy, Norway, Romania and Spain (htttp://www.refinementproject.eu). The project was funded by the EU's European Seventh Framework Programme.

The countries were selected on the grounds of representing different ways of organizing and financing the MHS. The inclusion criteria for the study area within the chosen country were: (1) the area had a population between 200,00 and 1,500,000, (2) the area covered at least one health district but was not solely limited to a macro-urban area within a municipality and (3) the availability of reliable sources of information about the MHS. Only services for adults (18 and older) were included in the study.

In Finland, the study area chosen for the REFINEMENT study was the Hospital District of Helsinki and Uusimaa (HUS). For the purpose of comparing areas within Finland and as a development project, the Finnish branch of the study also included the South Karelia Social and Health Care District (Eksote), the Kymenlaakso Social and Health Services (Carea) area and, from 2013, the Hospital District of Southwestern Finland (VSSHP). The study was carried out in collaboration with the Finnish Institute for Health and Welfare (THL) and the hospital districts.

4.2 THE STUDY AREAS

In the first study (I), the study area was the HUS area, with an adult population of 1.2 million. The area comprised 26 municipalities with adult populations ranging from 1,200 to 490,000.

In the second study (II), the study areas were the HUS area in Finland and the Girona area in Spain (0.6 million adult inhabitants). The Girona area comprised 7 health areas and altogether 221 municipalities

In studies III and IV, the study area comprised four hospital district areas in southern Finland: HUS, VSSHP, Carea and Eksote, with a total adult population of 1.9 million adults (43% of the total adult population of Finland). The study area comprised 67 municipalities. The units of comparison were 13 non-overlapping areas (Länsi-Uusimaa, Lohja, Hyvinkää, Porvoo, Helsinki,

Jorvi, Peijas, Carea, Eksote, Turku, Salo, Vakka-Suomi and Turunmaa). The adult population of the hospital areas ranged from 18,200 (Turunmaa) to 500,000 (Helsinki).

Table 3. *The study areas*

Study	Area	Level of analysis	Country	Adult population
I	HUS	Municipality (n=26)	Finland	1.2 million
II	HUS, Girona	Hospital district level (n=2)	Finland, Spain	1.8 million
III	HUS, Eksote, Carea, VSSHP	Hospital area level (n=13)	Finland	1.9 million
IV	HUS, Eksote, Carea, VSSHP	Hospital area level (n=13)	Finland	1.9 million

4.3 ESMS-R/DESDE-LTC AND REMAST INSTRUMENTS

The MHS were mapped using the European Sevice Mapping Schedule–Revised (ESMS-R) tool, also called DESDE-LTC 2.0 (Description and Evaluation of Services and Directories in Europe for Long Term Care 2.0), (Salvador-Carulla et al., 2012). This mapping instrument was developed from the European Service Mapping Schedule (ESMS), which was originally developed to classify and standardize the mapping of adult mental health services in Europe by the EPCAT team (European Psychiatric Assessment Team) (Johnson, Kuhlmann & EPCAT Group. European Psychiatric Assessment Team, 2000). The DESDE-LTC tool adapted the classification to long-term care of children and adolescents, drug and alcohol, disabilities and chronic illness (Salvador-Carulla et al., 2011). The ESMS-R version of DESDE-LTC was revised by Salvador-Carulla and Ruiz et al. (2012) for the REFINEMENT study.

These instruments have been used in several previous studies on the mental health care provision within a country (Tibaldi et al., 2005, Pirkola et al., 2009, Fernandez et al., 2015) and between areas in different countries (Gutiérrez-Colosía et al., 2017, Salvador-Carulla et al., 2008, Rezvyy et al., 2007, Salvador-Carulla et al., 2005). According to a systematic review, 71 studies have used the ESMS/DESDE instrument for research and planning of services (Romero-Lopéz-Alberca et al., 2019).

The information on the MHS was gathered by using the Refinement MApping Services Toolkit (REMAST), developed for the REFINEMENT project (Salvador-Carulla et al., 2015). The REMAST comprises (1) a general

description of the mapped area and target population, (2) a description of the social and physical environment that may influence the need for services and (3) the mapping of the services. The data was collected in Excel.

The ESMS-R instrument classifies the services into 89 Main Types of Care (MTC), which are divided into 6 main branches: information services (I), accessibility services (A), self-help and voluntary care (S), outpatient care (O), day care (D) and residential care (R) (Figure 8). The classification follows a tree-like structure with each main branch divided into subgroups depending on the characteristics of the MTC provided. Each MTC has a numerical code. For example, the MTC of a typical Finnish acute psychiatric ward receives the code R2 (acute hospital care, medium intensity), and the MTC of a psychiatric nursing home with 24h personnel and an indefinite length of stay receives the code R11 (Figure 9).

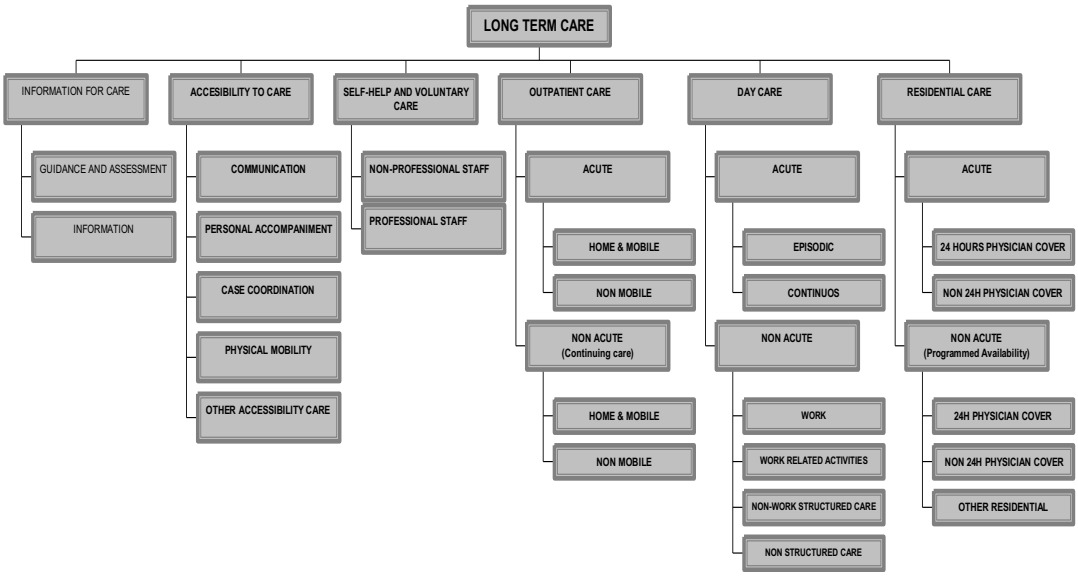

Figure 8 ESMS-R/DESDE-LTC service mapping tree (Salvador-Carulla et al., 2011)

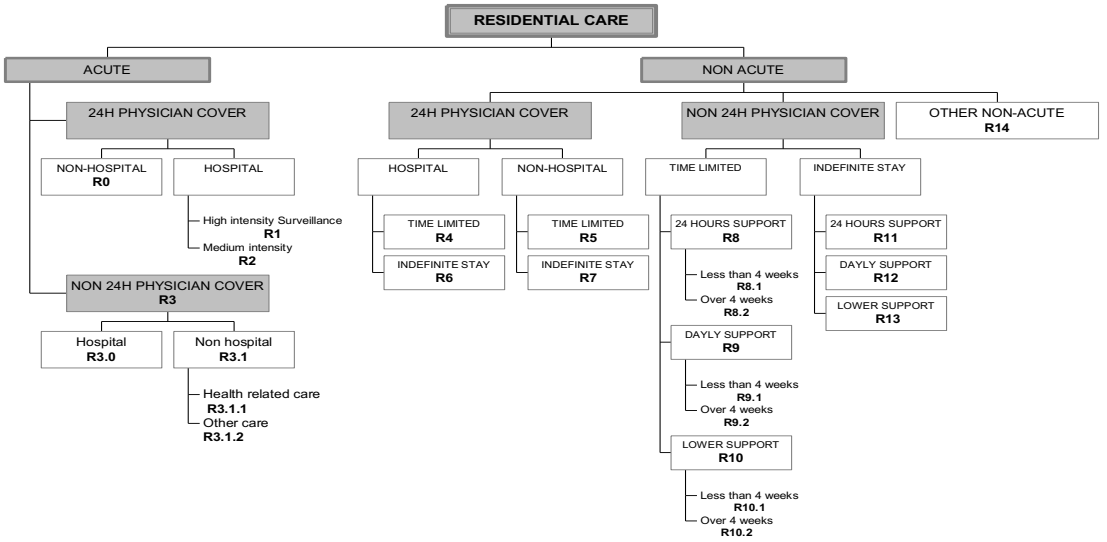

Figure 9 Residential care in the ESMS-R/DESDE-LTC 2.0 service mapping tree (Salvador-Carulla et al., 2011).

In the ESMS-R, the minimal organizational unit that provides the MTC is called the Basic Stable Input of Care (BSIC). By definition, BSICs have (1) a stable team of personnel that provides the services, (2) temporal stability (at least three years of a functioning or sustainable budget), (3) a defined target population, (4) administrative autonomy, (5) facilities, (6) budget and (7) patients. An example of a BSIC is an acute psychiatric ward in a general hospital. The same BSIC may provide several MTCs. The acute psychiatric ward may provide acute residential care and outpatient emergency care. The BSICs are coded by their names (for example, Porvoo hospital, psychiatric ward 23).

4.4 THE SERVICE MAPPING DATA COLLECTION

The data used in studies I and II were collected in 2012. In studies III and IV, the data was from 2012 for the Carea and Eksote areas and from 2013 for the VSSHP area. For HUS, updated data from 2014 was used.

For training in the data collection, the researchers were provided with an online course and training material, and two face-to-face training courses were organized – in Verona and Helsinki. At the end of the course, the inter-evaluator agreement was assessed by parallel classification of case vignettes based on real services (Salvador-Carulla et al., 2015). The Finnish data collectors from the HUS, Carea and Eksote areas participated in the course in Helsinki in 2011, and they further trained the data collector from the VSSHP area. For the Finnish branch of the study, the ESMS-R mapping tool handbook was translated into Finnish (Salvador-Carulla et al., 2012).

The mapping in Finland included mental health and addiction services for adults (18+). In other countries of the REFINEMENT study, only mental health services were included in the mapping. A BSIC was included in the mapping if at least 20% of its patients were treated for mental health or addiction problems. The mapping included mental health and addiction services at the primary, secondary and tertiary levels from the public, private and third sectors. Specialized mental health professionals working in the primary and social care services (e.g. psychiatrists, psychologists, psychiatric nurses) were included. Private practitioners (like private psychiatrists and psychotherapists), occupational health care services, developmental disability services and specialized services for the elderly were excluded from the study.

The data from the service units were gathered through public databases and web pages and by contacting the service providers through e-mail containing the central questions needed for the mapping (including the types of services provided, number of personnel, placement capacity, opening hours and intensity of treatment provided). When needed, additional questions were asked through e-mail or by telephone. The data were collected into Excel spreadsheets, modified from the original Excel templates provided by the developers of the ESMS-R.

In Study I, only the mental health service data were used. Data on the use of specialized mental health services in Study I were collected from the administration of the HUS hospital district and the administration of the municipal psychiatric services of Helsinki city and Hyvinkää. Also in Study II, only mental health service data were used, since in the comparison area, Girona in Spain, only mental health services had been mapped. In studies III and IV, both mental health and addiction services were included in the analysis.

4.5 THE SOCIOECONOMIC VARIABLES

Socioeconomic variables affecting the need for services were collected from the Finnish Statistics and Indicator Bank (Sotkanet) and Statistics Finland (Stat) for studies I, III and IV. As an indicator of psychiatric morbidity, a crude mental health index (MHI) was used (Sotkanet). The index is provided by the Finnish Institute for Health and Welfare for each municipality and is based on three indicators: (1) the number of persons eligible for special reimbursement for antipsychotic medication, (2) the incidence of suicides and suicide attempts and (3) the number of persons on disability pension due to mental health disorders in a given area. Each indicator is given equal weight, and the MHI is counted as an average over three years. The index for the whole country is set to 100. Therefore, a MHI higher than 100 indicates higher than average morbidity and need for services. Other indicators used were the unemployment rate, the level of education and the percentage of single households, and in Study I, also the average income per adult. In Study I, the socioeconomic data were from 2011. In studies III and IV, the data were from 2012.

In Study II, which compared the HUS area with the Girona area in Spain, the selected indicators were: gross domestic product (GDP) per capita, public and private health expenditure per capita, population density, population mean age, percentage of female population, unemployment rate, dependency ratio, percentage of single households, percentage of people on disability pension due to mental health disorders, percentage of single-parent families, percentage of migrant population, overall mortality and suicide mortality. The indicators were collected from Eurostat (Eurostat) , the World Health Organization (WHO) , OECD Health Data (OECD) , the Sotkanet Statistics and Indicator Bank (Sotkanet) and Statistics Finland (for Helsinki and Uusimaa) (Stat) and the Statistical Institute of Catalonia-Idescat (for Girona) (Idescat). The data from 2011 were used.

4.6 THE PERSONNEL RESOURCE ALLOCATION AND PRODUCTIVITY

The personnel resources in the study were expressed as full-time equivalents (FTE). The planned FTEs were used instead of the actual size of the workforce. In Study I, the personnel resources were expressed as FTE/10,000, in studies II and IV as FTE/100,000 and in Study 3 as FTE/1,000 adult inhabitants.
Study I focused on the mental health personnel in the primary care setting in the HUS area and its relation to the costs and use of specialized psychiatric services.

In Study II, personnel resources and placement capacity in outpatient care (O), day care (D) and residential care (R) in the Girona and HUS areas were compared. Productivity was expressed as outpatient visits and hospital

inpatient days per FTE personnel per year and as the number of FTE per occupied psychiatric hospital bed. Only specialized psychiatric outpatient and inpatient services were included in the productivity analysis since in the HUS area, the information on the use of primary care MHS was incomplete, and in Girona, there were no primary care mental health personnel.

Some mental health services were also used in areas other than the area where the service unit was located. During the data collection, the organizations provided data on the use of hospital inpatient days for the different research areas. This gave the weight coefficient by which the personnel resource allocation of the unit to a specific research area was calculated in studies III and IV. This calculation was also made for the largest non-hospital residential services.

4.7 THE COSTS

The costs of the adult specialized psychiatric services in Study I were collected from the central administration of HUS and the administration of Helsinki and Hyvinkää municipal psychiatric services. The costs were expressed as €/adult inhabitant/year.

In Study IV, the personnel costs of the MHS were estimated by collecting the average salary of the different professional groups from public databases (Stat; Kuntarekry; The Finnish Medical Association) and multiplying it by 1.25 to account for social security and other costs covered by the employer. The personnel costs were expressed as €/1000 adults/year.

4.8 THE DEVELOPMENT OF A NEW CATEGORIZING VARIABLE: LOCAL VS. CENTRALIZED SERVICES

In Study III, a new variable was introduced: local vs. centralized services. The starting point was a draft developed by the Ministry of Social Affairs and Health for a new legal conceptualization of local and centralized health and social services. The process was carried out as a modified Delphi panel process. In the preliminary process, information (I) and accessibility (A) and self-help and voluntary (S) services were defined as local services. The residential services (R) were defined as centralized services, although the locations of some of the supported housing services are geographically dispersed. The work of the consensus panel focused on the classification of the outpatient (O) and day care (D) services. The classification of all the MTC codes was accepted by the consensus panel. The panel held two theoretical meetings, two rounds of individual classifications and a consensus meeting.

In the first theoretical meeting, it was concluded that the division into local vs. centralized services was insufficient from the patients' point of view since some services, although local, required a referral, whereas others were low-threshold services that do not require referrals. Therefore, the classification was divided into four categories: local services without gatekeeping, local services with gatekeeping, centralized services without gatekeeping and centralized services with gatekeeping. However, in the first round of individual classification, only 5% of the MTCs and 3% of the BSICs were classified as centralized services without gatekeeping. It was discussed that the geographical distance to the services in itself means that there is a threshold in the availability of services. The panel decided to merge these services into the other three categories. The second round of individual classification was based on three categories: local without gatekeeping, local with gatekeeping, and centralized services.

The balance between local vs. centralized services was analysed based on the proportion of service units (BSICs) classified as local services and the proportion of resources measured as full-time equivalents allocated to local services. The types of services provided by the public (primary or secondary health care), private and third-sector providers were explored to estimate how different types of local or centralized services integrate horizontally and vertically with other health services.

4.9 STATISTICAL METHODS

The data was processed using Excel and SPSS. The results were presented in tables, scatter plots, bar charts and pie charts. The data were described by using mean, median and standard deviation. Spearman rank correlation and linear regression analysis were used to explore the association between variables. The significance level was set to 0.05. The normality assumption of residuals in linear regression analysis was checked by using the Shapiro-Wilk test to ensure the fit of the model. A statistician was consulted in the statistical analyses. The statistical analysis was performed using SPSS versions 21, 22 and 27 (IBM Corp., Armon, NY, USA).

4.10 RESEARCH ETHICS

The Ethics Committee of the Finnish Institute of Health and Welfare (THL) approved the REFINEMENT study. The use of services was processed as the sum of hospital inpatient days and outpatient appointments per year per unit per municipality. No individual patient-level data were used. The socioeconomic indicators were collected from publicly available databases and analysed on the area level (municipality–Study I; hospital area – studies III and IV; and hospital district – Study II).

5 RESULTS

5.1 THE EFFECT OF PRIMARY CARE MENTAL HEALTH PERSONNEL RESOURCING ON THE COSTS AND USE OF SECONDARY PSYCHIATRIC SERVICES (STUDY I)

There was a considerable, even a tenfold, variation in the primary care mental health care personnel resource allocation between the HUS area municipalities, expressed as FTE per 10,000 adults. The number of mental psychiatric nurses in primary care showed a significant negative correlation with the number of outpatient visits in secondary psychiatric care. The mental health personnel resources in primary care did not correlate with the total costs of secondary psychiatric care or with the socioeconomic indicators.
A significant positive correlation was found between the total costs of secondary psychiatric and the MHI, the unemployment rate, the percentage of single households, and (expectedly) the number of psychiatric admissions, inpatient days and outpatient visits.

An error in the original 2014 published data was found regarding the data on hospital inpatient days. The corrected correlation table is shown below (Table 4). With the corrected data on inpatient days, the result from the regression analysis no longer showed an association between the number of primary care psychiatric nurses and the number of psychiatric hospital inpatient days. With the corrected data, the analysis showed that the number of inpatient days correlated positively with the mental health index (MHI), the percentage of single households and the unemployment rate. In the corrected analysis, the length of hospital stay did not show a significant statistical correlation with any variables other than the admission rate.

Table 4. *The correlations between the variables (Spearman rank correlation).*

	Primary care mental health nurses	Outpatient visits	Inpatient days	Admission rate	Lenght of stay	Costs	MHI	Unemploy-ment rate	Average income	Single house-holds
Primary care mental health nurses	1.000									
Outpatient visits in secondary psychiatric care	-0.388*	1.000								
Psychiatric inpatient days	-0.022	0.480*	1.000							
Psychiatric hospital admissions	0.074	0.361	0.734**	1.000						
Lenght of hospital stay	-0.177	0.045	0.116	-0.549**	1.000					
Costs of secondary psychiatric care	-0.075	0.628**	0.863**	0.734**	-0.021	1.000				
MHI	-0.222	0.294	0.594**	0.615**	-0.142	0.689**	1.000			
Unemployment rate	-0.191	0.060	0.405*	0.543**	-0.298	0.455*	0.639**	1.000		
Average income	-0.079	0.165	-0.240	-0.434*	0.298	-0.181	-0.446*	-0.655**	1.000	
Percentage of single households	-0.056	0.109	0.450*	0.510**	-0.160	0.610**	0.747**	0.816**	-0.490*	1.000
Education	-0.096	0.171	-0.227	-0.441*	0.337	-0.129	-0.373	-0.659**	0.948**	-0.413*

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

5.2 DIFFERENCES IN THE MENTAL HEALTH CARE SYSTEMS IN THE NORTHERN AND SOUTHERN EUROPEAN STUDY AREAS (STUDY II)

The service mapping identified 246 BSICs and 265 MTCs in the HUS area. In Girona, there were 39 BSICs and 40 MTCs. In the HUS area, the number of psychiatric hospital beds per 100,000 adults was 75.6, and in Girona, it was 22.4. In the HUS area, there were 150.8 non-hospital beds per 100,000 adults, and in Girona, there were 21.7. The day care service capacity per 100,000 adults was 47.5 places in the HUS area and 76.7 in Girona.

The total number of mental health care personnel per 100,000 adults was 240.8 in the HUS area and 36.0 in Girona. Therefore, there was a 6.7-fold difference in the MHS personnel resourcing between the study areas. The number of physicians per 100,000 adults was 23.4 in the HUS area and 9.4 in Girona. Respectively, the number of psychologists per 100,000 adults was 13 in the HUS area and 2.9 in Girona. The greatest difference was found in the number of nurses, which was 98.3 nurses per 100,000 adults in the HUS area and 6.5 in Girona.

As to the total FTEs per main type of care, in the HUS area, 62.7% of the total personnel was allocated to residential care, 30.7% to outpatient care and

6.6% to day care services. In Girona, 49.1% of the personnel was allocated to residential care, 29.2% to outpatient care and 21.7% to day care (Figure 10).

Outpatient care productivity, measured as the number of outpatient visits per FTE per year, was higher in Girona than in the HUS area: 1110.6 vs 506.8. The number of FTE per occupied hospital bed was 1.58 in the HUS area and 1.18 in Girona.

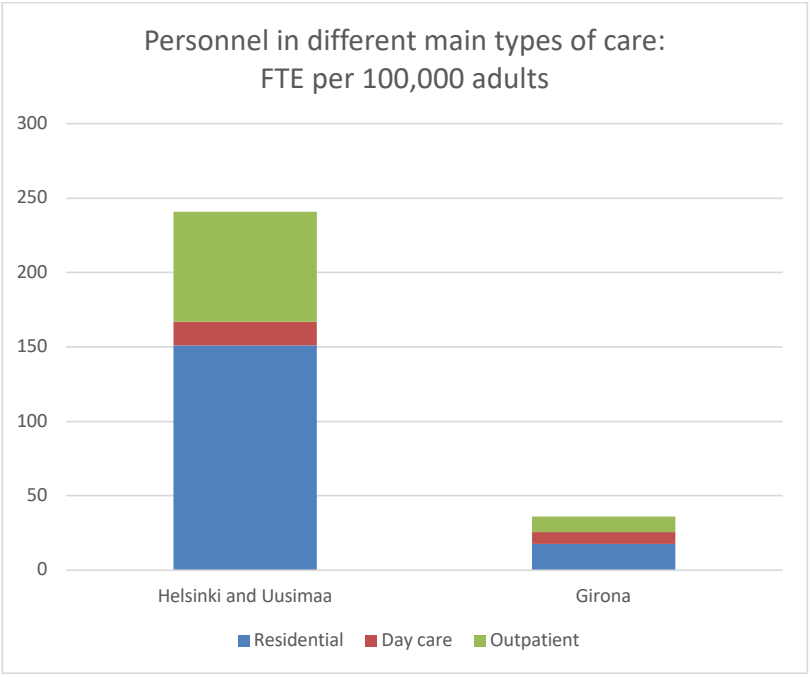

Figure 10 Total personnel, expressed as full-time equivalents (FTE) per 100,000 adults in residential, day care and outpatient services in the study areas.

5.3 PERSONNEL IN LOCAL VS. CENTRALIZED SERVICES (STUDY III)

In the study, 61 different MTCs and 986 BSICs were identified, and the number of total FTE personnel was 6785. Of the BSICs, 41% were classified as centralized, 37% as local services without gatekeeping and 22% as local services with gatekeeping.

Of the personnel, 67% were allocated to centralized services, 11% to local services without gatekeeping and 22% to local services with gatekeeping. The number of the total personnel varied from 2.8 to 4.82 FTE per 1000 adults (mean 3.63, SD 0.61). The number of personnel in local services without

gatekeeping varied from 0.06 to 1.01 FTE per 1000 adults (mean 0.46, SD 0.3). The number of personnel in local services with gatekeeping varied from 0 to 1.07 FTE per 1000 adults (mean 0.66, SD 0.32).

The proportion of total resources allocated to local services varied from 20% to 43% (mean=31%). No significant associations were found between the number of total personnel FTE per 1000 adults and the proportion of personnel allocated to local services, or between the number of total personnel and the number of local service units.

A strong correlation (0.911, $p<0.001$) was found between personnel FTE per 1000 adults allocated to centralized services and total personnel. Personnel FTE per 1000 adults allocated to local services without gatekeeping correlated inversely to personnel allocated to local services with gatekeeping (-0.635, $p=0.02$).

As to the service provider type, the third sector provided 45% of the BSICs and 20% of the personnel FTEs. Of the third-sector units, 54% were local services without gatekeeping and 30% were centralized services. The public sector provided 42% of the BSICs and 65% of the personnel FTEs. The private sector provided 12% of the BSICs and 15% of the personnel FTEs. Private providers produced mostly centralized services (87% of their service units were non-hospital residential services). Of the total personnel, 65% worked in the public sector, 20% in the third sector and 15% in the private sector.

5.4 THE NON-HOSPITAL RESIDENTIAL SERVICES AND THE TOTAL PERSONNEL COSTS OF THE MHS (STUDY IV)

In Study IV, we found that 30.6% of the total personnel resources were allocated to outpatient care, 7.7% to day care, 27.4% to hospital residential care and 34.4% to non-hospital residential care services (Figure 11). Of the personnel in the non-hospital residential care services, 93.2% were allocated to community residential care services.

There were altogether 333 beds per 100,000 adults and 119.5 full-time-equivalent (FTE) personnel per 100,000 adults in the non-hospital residential services in the whole study area. The total personnel resources in the non-hospital residential services were a significant predictor of total personnel costs and also when controlled by sociodemographic indicators of the need for services. Of the personnel in the non-hospital residential services, 0.8% were physicians, 16.8% were nurses, 0.1% were psychologists, 0.6% were social workers and 82% were other professionals (mostly auxiliary nurses). The outpatient and day services showed no statistically significant association with total personnel costs or other variables.

The primary care orientation, measured by the proportion of personnel in primary care services of the total personnel resources, did not correlate with the total personnel resources or total personnel costs.

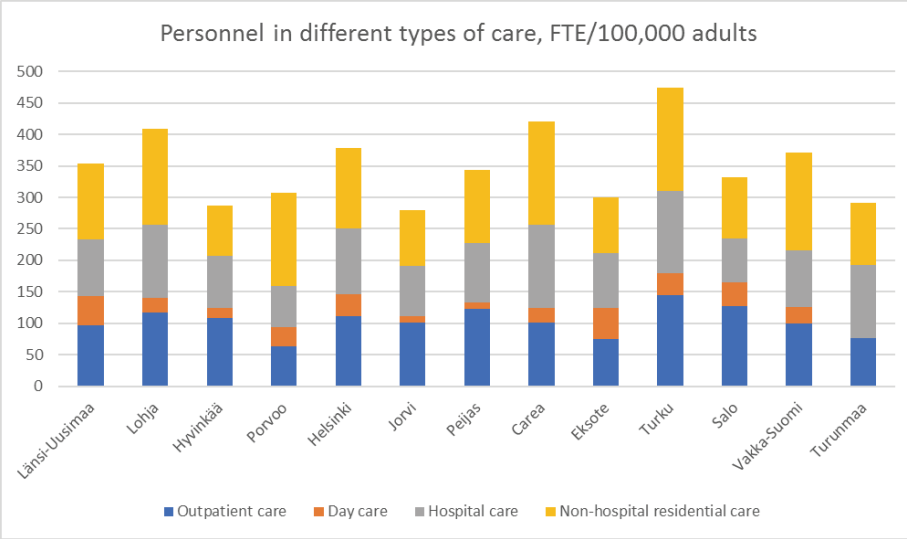

Figure 11 Personnel in different types of care, FTE per 100,000 adults

6 DISCUSSION

6.1 THE UNEVEN ALLOCATION OF PRIMARY CARE MENTAL HEALTH PERSONNEL RESOURCES

In the national Mieli 2009 recommendation, it was proposed that MHS should be mostly outpatient-oriented and provided at the primary care level (Mieli, 2009). According to our study, this development has progressed unevenly in the municipalities in the study area. The primary care mental health personnel resourcing did not reflect the needs of the population as measured by the MHI and sociodemographic indicators. The wide, even tenfold, differences in the relative number of mental health care personnel are likely the result of the fragmentation of the organization of primary care services at the municipal level and from the lack of previous comparable data on personnel resources, which would have enabled informed decision-making and planning.

Collaborated care that involves a case manager, a general practitioner and a consulting psychiatrist is effective in treating depression and anxiety (Archer, 2012). Overall, primary care mental health services form an important part of the modern MHS (Salisbury, Killaspy & King, 2016; Thornicroft, Deb & Henderson, 2016). In Finland, primary care health centres provide the entrance point to the mental health services. One of the most important roles of primary care in the MHS is to recognize mental health disorders and offer treatment for common mild and intermediately severe mental health disorders. Therefore, primary care low-threshold services have a key role in narrowing the treatment gap that exists between the prevalence and treatment rate of common mental disorders.

Ala-Nikkola et al. (2014) propose that the optimal minimum size of the adult population for organizing MHS is 150,000 and that the ratio of community service personnel to inpatient service personnel should be at least 0.7 in order to provide a richer diversity of services with fewer personnel resources (Ala-Nikkola et al., 2014). The major health and social services reform underway in Finland means moving in this direction as the 21 well-being services counties (and, in addition, the City of Helsinki as a separate service organizing unit) take over the responsibility of organizing the health and social care services, currently held by the 309 municipalities. From our study areas, the Carea, Eksote and VSSHP areas will form separate well-being services counties. The HUS area will be divided into East Uusimaa (municipalities: Askola, Lapinjärvi, Loviisa, Myrskylä, Porvoo, Pukkila and Sipoo), Central Uusimaa (municipalities: Hyvinkää, Järvenpää, Nurmijärvi, Mäntsälä, Tuusula and Pornainen), West Uusimaa (Espoo, Hanko, Ingå, Karkkila, Kauniainen, Kirkkonummi, Lohja, Raseborg, Siuntio and Vihti) and the well-being services county of Vantaa and Kerava. The City of Helsinki will continue to have responsibility for organizing health, social and rescue

services within its own area. The Hospital District of Helsinki and Uusimaa will be responsible for organizing demanding specialized health care. The reform intends to strengthen primary care and prevention (Health and Social Services Reform, 2021). These larger well-being services counties have the possibility to offer more equal services. The socio-economic features of the areas and sub-areas should weigh in the planning of primary care mental health personnel resource allocation, which was not the case in our study.

6.2 FACTORS ASSOCIATED WITH THE COSTS AND USE OF SPECIALIZED PSYCHIATRIC SERVICES

In Study I, the number of psychiatric nurses in primary care outpatient services showed a negative correlation with the number of outpatient visits in specialized psychiatric care. However, the mental health personnel resources in the primary care outpatient setting did not correlate with the total costs of the specialized psychiatric services. These results imply that greater resources in primary care mental health care may lead to lesser use of specialized care outpatient services but do not automatically mean lower total costs of specialized psychiatric care, at least not in a cross-sectional comparison. The non-hospital residential services and substance abuse services were not included in Study I (overall personnel costs are discussed in Section 6.5).

Increased recognition of mental health disorders may lead to increased overall treatment costs, which can partly explain why the costs of specialized psychiatric care were not lower in municipalities providing higher mental health personnel resources in the primary care outpatient MHS. Also, the primary care outpatient MHS partially serve a different patient population than the specialized care MHS, and the major cost driver of the specialized psychiatric care services is hospital inpatient care. In addition, simply the provision of services may lead to their use, at least partly independent of the level of need. In another study from the REFINEMENT project (Ala-Nikkola et al., 2016a), neither the inpatient and outpatient personnel resources nor the diversity of outpatient and day care services showed an association with the supply of hospital psychiatric inpatient beds. Rather, the supply of inpatient beds correlated with the MHI and the average use of alcohol.

In this study, the costs of the specialized psychiatric services correlated with the MHI and the unemployment rate and the number of single households in the municipality. Therefore, the costs of the specialized psychiatric services complied with the sociodemographic indicators of need. The MHI as an indicator of mental health morbidity and the need for services has been used in this study and other studies by Ala-Nikkola (Ala-Nikkola et al., 2016a, 2016b, 2014). In this study, the MHI was associated with hospital inpatient days, increased admission rate, increased costs of specialized psychiatric services and total MHS personnel. The MHI and the MHS may be seen as intertwined – the MHI is not only an indicator of need for services and

heavy psychiatric morbidity but also partly an outcome of services, as it includes the suicide rate and disability pension rate, which can be seen as unfavourable distal outcomes of the MHS. In Study I, a higher MHI was associated with a higher unemployment rate, lower average income and a higher percentage of single households. Therefore, the municipal MHI and sociodemgraphic disadvantagement go hand in hand. This complies with the long-known fact that sociodemographic disadvantagement increases the risk of mental ill health (Perälä et al., 2008; Pirkola et al., 2005; Kessler et al., 2003, Lindeman et al., 2000). Our results also give a picture of segregation and an unequal distribution of wealth and mental health among the HUS area municipalities.

The inverse relationship between the number of primary care psychiatric nurses and the use of specialized care outpatient services found in this study may imply that primary care mental health services have replaced specialized care outpatient services or compensated for an insufficient provision of them. In Study III, an inverse relationship was also found between local services without gatekeeping (including primary care outpatient services) and local services with gatekeeping (including specialized care outpatient services). It can be proposed, however, that there is a limit to the extent to which mental health disorders can be treated in a primary care setting since specialized treatments require a sufficient patient population and specialized services. Increasing the primary care MHS units in psychiatric centres may not be the optimal and most cost-effective way of organizing MHS, since this may lead to fragmentation and double organization. The areas that provide this type of both municipal and joint municipal specialized care showed a higher number of total personnel in Ala-Nikkola's study (Ala-Nikkola et al., 2014). Vertically and horizontally integrated services, where personnel and patients can move within the service system to provide and receive the required level of treatment, could be a solution in the Finnish context. An example of this type of organization is the Eksote area in our studies III and IV and in previous studies by Ala-Nikkola (Ala-Nikkola et al., 2016b, 2014). In the social and health care reform, the division into primary and specialized health care will continue to exist. It is important to ensure that the resources allocated to mental health care and specialized psychiatric care are sufficient and that patients suffering from severe mental disorders also receive the secondary/tertiary level care needed.

6.3 LOCAL VS. CENTRALIZED SERVICES

In Study III, 67% of the total personnel resources were allocated to centralized services and 33% to local services. Personnel resources in centralized services were strongly associated with total personnel resources, whereas local services showed no correlation with total personnel resources. Centralized services included both hospital inpatient services and non-hospital residential services.

A wide variation in the distribution of MHS in local and centralized services was found among the study areas. There are many ways of organizing services, but several indicators favour community-based MHS. Community-based MHS are associated with lower suicide rates than hospital-based systems (Pirkola et al., 2009). After discharge from hospital, community follow-up is associated with a significant reduction in suicides (While et al., 2012). Community-based services are also most often more easily accessible and reach more patients, and human rights are more respected (Wahlbeck, 2015; World Health Organization, 2013; Prince et al., 2007). Also, less stigma is associated with community-based services than with hospital inpatient services (Thornicroft, 2013). In addition, preventive approaches are seen in the long run as more cost-effective than institutional service systems (World Health Organization, 2013). The results of this study indicate that Finland still has an institutionally oriented MHS structure.

6.4 DIFFERENCES BETWEEN THE SOUTHERN AND NORTHERN EUROPEAN STUDY AREAS

The HUS area showed 6.7 times more personnel resources in the mental health services than the Girona area. This manifold difference is not explained by differences in the prevalence of mental health disorders (Wittchen & Jacobi, 2005; Wittchen et al., 2011) . The difference was greatest in the residential services, where an 8.5-fold difference in the relative number of personnel was found. Sevenfold more personnel were found in outpatient care and twice as many in day care services in the HUS area than in Girona.

In Spain, adults with long-term serious mental illnesses like schizophrenia are most often taken care of by their relatives, usually the mother (Vilaplana et al., 2007). In Finland, a Nordic welfare state, this responsibility is given to society. In the HUS area, the proportion of single households was 41.4%, while in Girona, it was 17.9%. Due to the looser family ties and the greater proportion of single households, there is probably more need for residential services in the Finnish cultural context than in the Spanish context.

When looking at other sociodemographic features, the Finnish population is more advantaged than the Spanish population: a higher level of education, lower unemployment and poverty rates, smaller income differences and higher self-rated health (Alvarez-Galvez et al., 2013). Therefore, many of the sociodemographic features would actually suggest that more mental health resources would be needed in Spain than in Finland. And yet, while it can be proposed that the Spanish study area showed such a low level of personnel resources that it can hardly be seen as sufficient for providing adequate services, Girona still showed lower suicide figures than the HUS area. The suicide rate is a product of complex psychological, mental and general health-related, cultural, socioeconomic and geographical factors. However, features

of the MHS also play a role, and outpatient-oriented services are related to lower suicide rates (Pirkola et al., 2009). The question of whether the institutional orientation of the MHS structure in the Finnish study area partly explains the higher suicide risk compared to the Spanish study area remains open.

In a further comparative study of eight European countries by Cetrano et al., the Finnish study area HUS ranked second in the relative number of personnel resources per 100,000 adults. The only area with higher total personnel resources was the Norwegian study area, with 74% more total mental health care personnel resources than in the Finnish study area. The French study area had 35% fewer and the Italian study area 37% fewer total personnel per 100,000 adults than the Finnish study area, and the other areas had even fewer (Cetrano et al., 2018).

6.5 TRANSINSTITUTIONALIZATION IN SOUTHERN FINLAND

In the 1970s, before deinstitutionalization in Finland started, there were 420 psychiatric hospital beds per 100,000 inhabitants. In southern Finland during the study years 2012–14, there were 63 psychiatric hospital beds per 100,000 adults. The 85% reduction in hospital beds is remarkable. However, in 2012–14, there were also 333 beds in non-hospital residential services per 100,000 adults. Of these non-hospital beds, 157 per 100,000 were for mental health services, 123 for substance abuse services and 54 for combined mental health and substance abuse services. These numbers from different eras are not directly comparable. In 1970, psychiatric hospital beds were occupied not only by persons with mental health disorders but also by people with developmental disorders, substance abuse disorders and elderly people. On the other hand, besides mental hospitals, there were municipal homes (Hyvönen, 2008; Kärkkäinen, 2004). The services for the elderly and persons with developmental disorders were not included in our study. Still, the numbers give a picture of a significant transinstitutionalization rather than a pure deinstitutionalization that occurred in Finland.

In a European comparison study of mental health services (substance abuse services not included), the HUS area in Finland showed the highest total number of beds in residential services (263.5 beds per 100,000), the Romanian study area showed the second highest number (215.4 beds), the Norwegian area showed the third highest (194.7 beds) and other study areas showed significantly lower numbers of beds per 100,000 adults (Italian 78.3, French 73.9, Austrian 60.5, Spanish 44.1 and English 41.2). The Norwegian study area showed the highest number of psychiatric hospital beds, and the Finnish area had the second highest. The Finnish area showed the highest number of beds in non-hospital residential services (Cetrano et al., 2018).

The personnel in the non-hospital residential services in this study were mostly professionals with less education, mostly auxiliary nurses. It is important to ensure that people within the residential services have access to evidence-based rehabilitative, therapeutic and general health care services. These health-related services—as well as a positive therapeutic relationship between staff and service users, a greater degree of privacy, autonomy and involvement of the service users—are associated with better outcomes for non-hospital residential services (Taylor et al., 2009). With the current educational profile of the personnel, evidence-based rehabilitative services can barely be provided in the non-hospital residential units.

In Finland, the provision of non-hospital residential services has shifted from public, third-sector and small private providers to large private for-profit companies. According to Salo (2019), the third-sector residential services provided better quality and more rehabilitation-oriented services than private companies. The problem with the long-term residential services is the same as with the B-hospitals before deinstitutionalization began. The patients are institutionalized and detached from their natural human relationships and life history, as well as the psychiatric and general health care services that they would need (Salo, 2019).

In this study, the non-hospital residential services were found to be a significant predictor of total personnel costs. 34% of the total personnel resources were allocated to these services. Therefore, these services form a significant part of the MHS and should be included in the planning of the MHS as a whole. The quality of services and networking with medical and psychiatric services should weigh more than the price in the selection of housing service providers (Salo, 2019).

To transform transinstitutionalization into true deinstitutionalization, clear common incentives towards independent housing with services brought home to the individuals should be made. This type of service structure is provided in Norway (Cetrano et al., 2018), and it is not necessarily cheaper than a more institutionally oriented MHS structure (Thornicroft, 2016). After all, 'the greatness of a nation can be judged by how it treats its weakest member' (a quote attributed to the American writer Pearl Buck (1892-1973) and Hubert Humphrey (1911–1978), the US vice president from 1965–1969).

6.6 STRENGTHS AND LIMITATIONS

The strengths of this study include the use of ESMS-R/DESDE-LTC, an internationally validated, structured tool for describing and classifying MHS (Johnson et al., 2000; Salvador-Carulla et al., 2012). A strength of the ESMS/DESDE-LTC instrument is that it enables the comparison of different areas and service systems and provides accurate data on the allocation of personnel resources and service types. The researchers were originally trained by a member of the team that developed the tool (Salvador-Carulla et al.,

2012). The persons who collected the data also received support from the national and international REFINEMENT teams. The data collection was made in close collaboration with local stakeholders. To identify services, both the Internet, public databases and local authorities, as well as municipal and hospital district directories and the HILMO registry were used. The sociodemographic variables were collected from public databases.

The limitations include a small number of catchment areas (In Study I, n=26; in studies III and IV, n=13), which limits the power of the statistical analysis. Due to the cross-sectional nature of the study, no conclusions about causal relationships between variables can be drawn.

The ESMS/DESDE-LTC instrument classifies the services on the basis of opening hours and the intensity and type of services provided (outpatient, inpatient, day care, work-related, health-related, etc.), and therefore describes the framework, but not the content, of the services provided. And the provision of different MTCs and BSICs does not take into account the size of the unit or the level of specialization of the care provided. Also, some of the diversity in the service types is lost in the classification since the main type of care provided is dominant in the classification.

From the data, 12% of the non-hospital residential units failed to report information on the personnel resources, and 7% failed to report the information on the number of beds. From all the service types studied (outpatient, day care, residential services), 6.8% of the units lacked information on the personnel resources. The lack of data was not analysed in the study. However, the effect on the results of the study may be assumed to be minor, and the effect would be in the direction of strengthening the results. (An even greater number and proportion of personnel are in reality allocated to non-hospital residential services than what was found in studies II–IV.)

One possible source of minor inaccuracy is that even in the public MHS, the personnel resources are not in databases from where they could be directly and uniformly collected. Rather, the collection of data on the personnel resources required consulting with the managers of the units. Also, the allocation of personnel resources to the study areas was counted by the use of the service units by the different municipalities in the year 2012. Since there is some year-to-year random variability in the use of services by different municipalities, this may somewhat affect the results.

The personnel resource allocation was reported as the planned FTE, not the workforce FTE that actually was provided. Therefore, the study gives a picture of the workforce as intended and lacks information on the shortage of some professional groups.

Private practitioners (individual psychotherapists and psychiatrists) were not included in the study, which limits the information on private outpatient services.

For Study I, the costs of the specialized psychiatric care services were collected from the administrators of the services. However, no database exists that would collect the total costs of all the services in the MHS. Therefore, in

Study IV, an estimation of personnel costs was calculated based on the average income of different professional groups. This leaves out the real estate and administrative costs of the MHS.

The MHI was used in the study as a measure of the need for mental health services. However, it mostly reflects the serious mental health disorders as it comprises suicides and suicide attempts, disability pensions due to mental health disorders, and special reimbursement for medication due to psychotic disorders. Therefore, one of the limitations of MHI is that it does not reflect population needs having to do with milder mental health disorders. Also, a limitation is the question of whether the MHI is an indicator of the need for services or actually a product of services. In Finland, a complete reimbursement for antipsychotic medication is granted for all persons with psychotic disorders. The percentage of the population eligible for special reimbursement for antipsychotic medication reflects relatively well the prevalence of psychotic disorders (Suvisaari et al., 2016). The number of suicides and suicide attempts may depend not only on social factors but also reflect the functioning of the MHS (Pirkola et al., 2009). The disability pension rate due to psychiatric disorders most likely at least partly indicates suboptimal treatments and rehabilitation. Therefore, it may be argued that the MHI is not only a measure of the need for services but also of the functioning and outcome of services, which limits the interpretations made from the relationship between the services and the MHI.

Service-unit-level data on proximal clinical outcomes were not available, and the collection of patient-level outcome data was not within the scope of the REFINEMENT study. The lack of clinical outcome data limits the interpretation of the results of the study, and no conclusions about the effectiveness and cost-effectiveness of services can be drawn.

7 CONCLUSIONS AND FUTURE IMPLICATIONS

As a conclusion from the central findings of this study, the municipally driven service organization leads to unfounded differences in the provision of primary care mental health care and non-hospital residential services. Indicators of sociodemographic disadvantagement and MHI are associated with higher costs of specialized psychiatric services but do not direct the resource allocation of primary care services. The low-threshold local mental health service personnel allocation shows an inverse relationship to the provision of local services with a threshold. The mental health and substance abuse care services in southern Finland are still institutionally oriented, and transinstitutionalization to non-hospital services has occurred. Non-hospital residential services are a significant driver of total personnel costs.

In the Finnish National Mental Health Strategy (Vorma et al., 2020), it is stated that mental health services should be patient-centred, accessible, timely, effective, flexible, rehabilitative and equitable and should take the family members of patients into account, both as a resource and as needers of support. For this, sufficient and qualified MHS personnel resources and an efficient and flexible organizational structure are needed. In the new health and social care services reform (the so-called 'sote-reform') that is being planned, the MHS should be considered as a whole to avoid inefficiency, suboptimization and blind spots resulting from double organization and fragmentation of the service structure.

The gathering of information on personnel resources and the provision of services in all service provider types is also needed in the future. This gathering of personnel data should be automatized and collected into a national electric database to provide the basis for informed MHS planning and political decision-making. Common incentives and criteria for non-hospital residential services should be developed to reverse the trend towards transinstitutionalization and to ensure the quality of these services. Also, a systematic collection of outcome data is needed to evaluate the cost-effectiveness of the services.

REFERENCES

Ahonen, K. 2019, "Suomalainen mielenterveyspolitiikka. Julkisen vallan ohjaus mielenterveyden häiriöön sairastuneiden ihmisoikeuksien turvaamiseksi". University of Helsinki. https://helda.helsinki.fi/bitstream/handle/10138/307820/SUOMALAI.pdf?sequence=1&isAllowed=y.

Ala-Nikkola, T., Pirkola, S., Kaila, M., Saarni, S.I., Joffe, G., Kontio, R., Oranta, O., Sadeniemi, M. & Wahlbeck, K. 2016a, "Regional Correlates of Psychiatric Inpatient Treatment", *International journal of environmental research and public health,* vol. 13, no. 12, p. 1204.

Ala-Nikkola, T., Pirkola, S., Kontio, R., Joffe, G., Pankakoski, M., Malin, M., Sadeniemi, M., Kaila, M. & Wahlbeck, K. 2014, "Size Matters—Determinants of Modern, Community-Oriented Mental Health Services", *International journal of environmental research and public health,* vol. 11, no. 8, pp. 8456–8474.

Ala-Nikkola, T., Sadeniemi, M., Kaila, M., Saarni, S., Kontio, R., Pirkola, S., Joffe, G., Oranta, O. & Wahlbeck, K. 2016b, "How size matters: exploring the association between quality of mental health services and catchment area size", *BMC psychiatry,* vol. 16, no. 1, pp. 289.

Alanko, A. 2017, "Improving mental health care – Finnish mental health policy rationale in the era of dehospitalisation", University of Helsinki. https://helda.helsinki.fi/bitstream/handle/10138/220946/IMPROVIN.pdf?sequence=1&isAllowed=y.

Alegría, M., Bijl, R.V., Lin, E., Walters, E.E. & Kessler, R.C. 2000, "Income differences in persons seeking outpatient treatment for mental disorders: a comparison of the United States with Ontario and The Netherlands", *Archives of general psychiatry,* vol. 57, no. 4, pp. 383–391.

Alvarez-Galvez, J., Rodero-Cosano, M.L., Motrico, E., Salinas-Perez, J.A., Garcia-Alonso, C. & Salvador-Carulla, L. 2013, "The impact of socio-economic status on self-rated health: study of 29 countries using European social surveys (2002–2008)", *International journal of environmental research and public health,* vol. 10, no. 3, pp. 747–761.

Andrews, G., Basu, A., Cuijpers, P., Craske, M.G., McEvoy, P., English, C.L. & Newby, J.M. 2018, "Computer therapy for the anxiety and depression disorders is effective, acceptable and practical health care: an updated meta-analysis", *Journal of anxiety disorders,* vol. 55, pp. 70–78.

Angermeyer, M.C., Kilian, R., Wilms, H. & Wittmund, B. 2006, "Quality of life of spouses of mentally ill people", *International journal of social psychiatry,* vol. 52, no. 3, pp. 278–285.

Archer, J., Bower, P., Gilbody, S., Lovell, K., Richards, D., Gask, L., Dickens, C. & Coventry, P. 2012, "Collaborative care for depression and anxiety problems", *The Cochrane database of systematic reviews,* vol. 10.

Awad, A.G. & Voruganti, L.N. 2008, "The burden of schizophrenia on caregivers", *PharmacoEconomics,* vol. 26, no. 2, pp. 149–162.

Bailey, R.C. & Grenyer, B.F. 2013, "Burden and support needs of carers of persons with borderline personality disorder: a systematic review", *Harvard review of psychiatry,* vol. 21, no. 5, pp. 248–258.

Baxter, A.J., Vos, T., Scott, K.M., Ferrari, A.J. & Whiteford, H.A. 2014, "The global burden of anxiety disorders in 2010", *Psychological medicine,* vol. 44, no. 11, pp. 2363–2374.

Cetrano, G., Salvador-Carulla, L., Tedeschi, F., Rabbi, L., Gutiérrez-Colosía, M.R., Gonzalez-Caballero, J. L., Park, A.-L., McDaid, D., Sfetcu, R., Kalseth, J., Kalseth, B., Hope, O., Brunn, M., Chevreul, K., Strassmayr, C, Hagmair, G., Wahlbeck, K., & Amaddeo, F. 2018, The balance of adult mental health care: provision of core health versus other types of care in eight European countries. Epidemiology and psychiatric sciences, vol .29, no 6, pp.1–10.

Chalmers, I. 1993, "The Cochrane collaboration: preparing, maintaining, and disseminating systematic reviews of the effects of health care", *Annals of the New York Academy of Sciences,* vol. 703, no. 1, pp. 156–165.

Chinman, M., George, P., Dougherty, R.H., Daniels, A.S., Ghose, S.S., Swift, A. & Delphin-Rittmon, M.E. 2014, "Peer support services for individuals with serious mental illnesses: assessing the evidence", *Psychiatric Services,* vol. 65, no. 4, p. 429.

Chisholm, D., Sweeny, K., Sheehan, P., Rasmussen, B., Smit, F., Cuijpers, P. & Saxena, S. 2016, "Scaling-up treatment of depression and anxiety: a global return on investment analysis", *The Lancet Psychiatry,* vol. 3, no. 5, pp. 415–424.

Colp, R. 2005, "History of Psychiatry" in *Kaplan & Sadock's Comprehensive Textbook of Psychiatry*, 8th ed, Lippincott Williams & Wilkins, pp. 4013–4047.

Craske, M.G., Stein, M.B 2016, "Anxiety", *The Lancet,* vol. 388, pp. 3048–3059.

Cross, S.P. & Hickie, I. 2017, "Transdiagnostic stepped care in mental health", *Public health research & practice,* vol. 27, no. 2.

Current Care Guideline Alcohol Dependency 2015, "Alkoholiongelmaisen hoito. Käypä hoito -suositus." Suomalaisen Lääkäriseuran Duodecimin ja Päihdelääketieteen yhdistyksen asettama työryhmä. Helsinki: Suomalainen Lääkäriseura Duodecim. Available: https://www.kaypahoito.fi/hoi50028#s1 [2021, 12/26].

Current Care Guideline Anxiety Disorders 2019, "Ahdistuneisuushäiriöt. Käypä hoito -suositus." Suomalaisen Lääkäriseuran Duodecimin, Suomen Psykiatriyhdistys ry:n ja Suomen Nuorisopsykiatrisen yhdistyksen asettama työryhmä. Suomalainen Lääkäriseura Duodecim. Available: https://www.kaypahoito.fi/hoi50119#K1 [2021, 12/26].

Current Care Guideline Bipolar Disorder 2021, "Kaksisuuntainen mielialahäiriö. Käypä hoito -suositus." Suomalaisen Lääkäriseuran Duodecimin, Suomen Psykiatriyhdistys ry:n ja Suomen Nuorisopsykiatrisen yhdistyksen asettama työryhmä. Helsinki: Suomalainen Lääkäriseura Duodecim. Available: https://www.kaypahoito.fi/hoi50076#K1 [2021, 12/26].

Current Care Guideline Borderline Personality 2020, "Epävakaa persoonallisuus. Käypä hoito -suositus." Suomalaisen Lääkäriseuran Duodecimin ja Suomen Psykiatriyhdistys ry:n asettama työryhmä. Helsinki: Suomalainen Lääkäriseura Duodecim. Available: https://www.kaypahoito.fi/hoi50064#K1 [2021, 12/26].

Current Care Guideline Depression 2021, "Depressio. Käypä hoito -suositus." Suomalaisen Lääkäriseuran Duodecimin ja Suomen Psykiatriyhdistys ry:n asettama työryhmä. Suomalainen Lääkäriseura Duodecim. . Available: https://www.kaypahoito.fi/hoi50023#K1 [2021, 12/26].

Current Care Guideline Drug Abuse 2018, "Huumeongelmaisen hoito. Käypä hoito -suositus." Suomalaisen Lääkäriseuran Duodecimin ja Päihdelääketieteen yhdistyksen asettama työryhmä. Helsinki: Suomalainen Lääkäriseura Duodecim. Available: https://www.kaypahoito.fi/hoi50041#K1 [2021, 12/26].

Current Care Guideline Schizophrenia 2020, "Skitsofrenia. Käypä hoito -suositus." Suomalaisen Lääkäriseuran Duodecimin ja Suomen Psykiatriyhdistys ry:n asettama työryhmä. Suomalainen Lääkäriseura Duodecim. Available: https://www.kaypahoito.fi/hoi35050#K1 [2021, 12/26].

de Jong, M.H., Kamperman, A.M., Oorschot, M., Priebe, S., Bramer, W., van de Sande, R., Van Gool, A.R. & Mulder, C.L. 2016, "Interventions to reduce compulsory psychiatric admissions: a systematic review and meta-analysis", *JAMA psychiatry,* vol. 73, no. 7, pp. 657–664.

de Stefano, A. & Ducci, G. 2008, "Involuntary admission and compulsory treatment in Europe: an overview", *International Journal of Mental Health,* vol. 37, no. 3, pp. 10-21.

Dekker, J., Peen, J., Goris, A., Heijnen, H. & Kwakman, H. 1997, "Social deprivation and psychiatric admission rates in Amsterdam", *Social psychiatry and psychiatric epidemiology,* vol. 32, no. 8, pp. 485–492.

Dezetter, A., Briffault, X, Bruffaerts, R., De Graaf, R., Alonso, J., König, H.H., Haro, J.M., De Girolamo, G., Vilagut, G., Kovess-Masféty, V. 2013, "Use of general practitioners versus mental health professionals in six European countries: The decisive role of the organization of mental health-care systems", Soc. Psychiatry Psychiatr. Epidemiol., vol. 48, pp. 137–149

Eurostat , European Statistics. Available: https://ec.europa.eu/eurostat/data/database [2021, 12/26].

Fernandez, A., Gillespie, J.A., Smith-Merry, J., Feng, X., Astell-Burt, T., Maas, C. & Salvador-Carulla, L. 2016, "Integrated mental health atlas of the Western Sydney Local Health District: gaps and recommendations.", *Australian Health Review,* vol. 41, no. 1, pp. 38–44.

Fernandez, A., Salinas-Perez, J., Gutierrez-Colosia, M., Prat-Pubill, B., Serrano-Blanco, A., Molina, C., Jorda, E., Garcia-Alonso, C. & Salvador-Carulla, L. 2015, "Use of an integrated atlas of mental health care for evidence informed policy in Catalonia (Spain)", *Epidemiology and psychiatric sciences,* vol. 24, no. 6, pp. 512–524.

Ferri, M., Amato, L. & Davoli, M. 2006, "Alcoholics Anonymous and other 12-step programmes for alcohol dependence", *Cochrane database of systematic reviews,* vol. 3.

Foldemo, A., Gullberg, M., Ek, A. & Bogren, L. 2005, "Quality of life and burden in parents of outpatients with schizophrenia", *Social psychiatry and psychiatric epidemiology,* vol. 40, no. 2, pp. 133-138.

Geschwind, D.H. & Flint, J. 2015, "Genetics and genomics of psychiatric disease", *Science (New York, N.Y.),* vol. 349, no. 6255, pp. 1489–1494.

Guarnaccia, P.J. & Parra, P. 1996, "Ethnicity, social status, and families' experiences of caring for a mentally ill family member", *Community mental health journal,* vol. 32, no. 3, pp. 243–260.

Gutiérrez-Colosía, M.R., Salvador-Carulla, L., Salinas-Pérez, J.A., García-Alonso, C.R., Cid, J., Salazzari, D., Montagni, I., Tedeschi, F., Cetrano, G., Chevreul, K., Kalseth, J., Hagmair, G., Straßmayr, C., Park, A.L., Sfectu, R., Ala-Nikkola, T., González-Caballero, J.L., Rabbi, L., Kalseth, B. & Amaddeo, F. 2017, "Standard comparison of local mental health care

systems in eight European countries", *Epidemiology and Psychiatric Sciences,* pp. 1–14.

Gyani, A., Shafran, R., Layard, R. & Clark, D.M. 2013, "Enhancing recovery rates: lessons from year one of IAPT", *Behaviour research and therapy,* vol. 51, no. 9, pp. 597–606.

Haarasilta, L., Marttunen, M., Kaprio, J. & Aro, H. 2003, "Major depressive episode and health care use among adolescents and young adults.", *Social psychiatry and psychiatric epidemiology,* vol. 38, no. 7, pp. 366–372.

Health and Social Services Reform, 2021. https://soteuudistus.fi/en/frontpage

Heekeren, K., Antoniadis, S., Habermeyer, B., Obermann, C., Kirschner, M., Seifritz, E., Rössler, W. & Kawohl, W. 2020, "Psychiatric Acute Day Hospital as an Alternative to Inpatient Treatment", *Frontiers in Psychiatry,* vol. 11, p. 471.

Hewlett, E. & Moran, V. 2014, "Making Mental Health Count: The Social and Economic Costs of Neglecting Mental Health Care", OECD. https://www.oecd.org/els/health-systems/Focus-on-Health-Making-Mental-Health-Count.pdf.

Hiilamo, H., Kangas, O., Manderbacka, K., Mattila-Wiro, P., Niemelä, M. & Vuorenkoski, L. 2010, "Hyvinvoinnin turvaamisen rajat. Näköaloja talouskriisiin ja hyvinvointivaltion kehitykseen Suomessa". Kela, Sastamala, 2010, Kela.

Hirvonen, H. 2014, "Suomalaisen psykiatriatieteen juuria etsimässä: psykiatria tieteenä ja käytäntönä 1800-luvulta vuoteen 1930". Itä-Suomen yliopisto, *Publications of the University of Eastern Finland. Dissertations in Social Sciences and Business Studies*, no 72. https://erepo.uef.fi/bitstream/handle/123456789/13191/urn_isbn_978-952-61-1341-8.pdf?sequence=1&isAllowed=y.

Hoenig, J. & Hamilton, M.W. 1966, "The schizophrenic patient in the community and his effect on the household", *International journal of social psychiatry,* vol. 12, no. 3, pp. 165–176.

Hyvönen, J. 2008, "Suomen psykiatrinen hoitojärjestelmä 1990-luvulla historian jatkumon näkökulmasta [The Finnish psychiatric health services in the 1990s from the point of view of historical continuity]", Medical Sciences.Kuopio: University of Kuopio, https://erepo.uef.fi/bitstream/handle/123456789/8985/urn_isbn_978-951-27-1057-7.pdf?sequence=1&isAllowed=y .

Hämäläinen, J., Isometsä, E., Laukkala, T., Kaprio, J., Poikolainen, K., Heikkinen, M., Lindeman, S. & Aro, H. 2004, "Use of health services for major depressive episode in Finland", *Journal of affective disorders,* vol. 79, no. 1, pp. 105–112.

Hämäläinen, J., Isometsä, E., Sihvo, S., Kiviruusu, O., Pirkola, S. & Lönnqvist, J. 2009, "Treatment of major depressive disorder in the Finnish general population", *Depression and anxiety,* vol. 26, no. 11, pp. 1049–1059.

Hämäläinen, J., Isometsä, E., Sihvo, S., Pirkola, S. & Kiviruusu, O. 2008, "Use of health services for major depressive and anxiety disorders in Finland", *Depression and anxiety,* vol. 25, no. 1, pp. 27–37.

Hämäläinen, J., Isometsä, E., Sihvo, S., Kiviruusu, O., Pirkola, S. & Lonnqvist, J. 2009, "Treatment of major depressive disorder in the Finnish general population", *Depression and anxiety,* vol. 26, no. 11, pp. 1049–1059.

Idescat *, Idescat Official Statistic Website of Catalonia. (accessed on 11 April 2018)*. Available: https://www.idescat.cat/pub/?geo=at% [2018, 4/11].

Johnson, S., Kuhlmann, R. & EPCAT Group. European Psychiatric Assessment Team 2000, "The European Service Mapping Schedule (ESMS): development of an instrument for the description and classification of mental health services", *Acta psychiatrica Scandinavica.Supplementum,* vol. 405, pp. 14–23.

Kärkkäinen, J. 2004, "Onnistuiko psykiatrian yhdentyminen somaattiseen hoitojärjestelmään? Psykiatrisen hoitojärjestelmän kehitys Suomessa ja sairaanhoitopiiri-uudistuksen arviointi psykiatrian näkökulmasta". *Stakes Tutkimuksia,* 138, Helsinki.

Kasteenpohja, T., Marttunen, M., Aalto-Setälä, T., Perälä, J., Saarni, S.I. & Suvisaari, J. 2015, "Treatment received and treatment adequacy of depressive disorders among young adults in Finland", *BMC psychiatry,* vol. 15, no. 1, pp. 1–14.

Kessler, R.C., Berglund, P., Demler, O., Jin, R., Koretz, D., Merikangas, K.R., Rush, A.J., Walters, E.E. & Wang, P.S. 2003, "The epidemiology of major depressive disorder: results from the National Comorbidity Survey Replication (NCS-R)", *Jama,* vol. 289, no. 23, pp. 3095–3105.

Kessler, R.C., Berglund, P., Demler, O., Jin, R., Merikangas, K.R. & Walters, E.E. 2005, "Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication", *Archives of General Psychiatry,* vol. 62, no. 6, pp. 593–602.

Kettunen, A., Laine, J., Pehkonen-Elmi, T., Törmä, S., Tuokkola, K. & Huotari, K. 2015, "Kustannussäästöjä asumisratkaisuja keventämällä?", Ympäristöministeriön raportteja 20. Ympäristöministeriö 2015. https://julkaisut.valtioneuvosto.fi/handle/10138/155102.

Kuntarekry. Available: https://www.kuntarekry.fi/fi/tyoelamauutiset/tyoelama/kunta-alan-palkat-eri-teht%C3%A4viss%C3%A4/.

Leff, H.S., Chow, C.M., Pepin, R., Conley, J., Allen, I.E. & Seaman, C.A. 2009, "Does one size fit all? What we can and can't learn from a meta-analysis of housing models for persons with mental illness", *Psychiatric services,* vol. 60, no. 4, pp. 473–482.

Lindeman, S., Hämäläinen, J., Isometsä, E., Kaprio, J., Poikolainen, K., Heikkinen, M. & Aro, H. 2000, "The 12-month prevalence and risk factors for major depressive episode in Finland: representative sample of 5993 adults", *Acta Psychiatrica Scandinavica,* vol. 102, no. 3, pp. 178–184.

Lloyd-Evans, B., Mayo-Wilson, E., Harrison, B., Istead, H., Brown, E., Pilling, S., Johnson, S. & Kendall, T. 2014, "A systematic review and meta-analysis of randomised controlled trials of peer support for people with severe mental illness.", *BMC psychiatry,* vol. 14, no. 1, pp. 1–12.

Lorant, V., Croux, C., Weich, S., Deliege, D., Mackenbach, J. & Ansseau, M. 2007, "Depression and socio-economic risk factors: 7-year longitudinal population study", *The British journal of psychiatry : the journal of mental science,* vol. 190, pp. 293–298.

Lorant, V., Deliege, D., Eaton, W., Robert, A., Philippot, P. & Ansseau, M. 2003, "Socioeconomic inequalities in depression: a meta-analysis", *American Journal of Epidemiology,* vol. 157, no. 2, pp. 98–112.

Markkula, N., Suvisaari, J., Saarni, S.I., Pirkola, S., Peña, S., Saarni, S., Ahola, K., Mattila, A.K., Viertiö, S., Strehle, J., Koskinen, S. & Härkänen, T. 2015, "Prevalence and correlates of major depressive disorder and dysthymia in an eleven-year follow-up – Results from the Finnish Health 2011 Survey", *Journal of affective disorders,* vol. 173, pp. 73–80.

Marshall, M., Crowther, R., Sledge, W.H., Rathbone, J. & Soares-Weiser, K. 2011, "Day hospital versus admission for acute psychiatric disorders", *Cochrane database of systematic reviews,* no. 12.

Marshall, M., Crowther, R., Almaraz-Serrano, A., Creed, F., Sledge, W., Kluiter, H., Roberts, C., Hill, E., Wiersma, D., Bond, G.R., Huxley, P. & Tyrer, P. 2001, "Systematic reviews of the effectiveness of day care for people with severe mental disorders: (1) acute day hospital versus admission; (2) vocational rehabilitation; (3) day hospital versus

outpatient care", *Health technology assessment (Winchester, England),* vol. 5, no. 21, pp. 1–75.

Mental Health Act 1990, Mielenterveyslaki 14.12.1990/1116. Available: https://www.finlex.fi/fi/laki/ajantasa/1990/19901116 [2021, 12/26].

Mieli 2009, "Plan for mental health and substance abuse work. Proposals of the Mieli 2009 working group to develop mental health and substance abuse work until 2015". *Reports 2009:5 of the Ministry of Social Affairs and Health*. Available: https://julkaisut.valtioneuvosto.fi/handle/10024/70007

Mieli 2009. 2016, "Kansallisen mielenterveys- ja päihdesuunnitelman toimeenpanon ohjausryhmä. MIELENTERVEYS- JA PÄIHDESUUNNITELMA 2009–2015. Suunnitelman loppuarviointi ja ohjausryhmän ehdotukset." Sosiaali- ja terveysministeriö. https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/74820/1004164MIELENTERVEYS__JA_P_IHDESUUNNI1487308985.pdf?sequence=1&isAllowed=y.

Munk-Jørgensen, P., Allgulander, C., Dahl, A.A., Foldager, L., Holm, M., Rasmussen, I., Virta, A., Huuhtanen, M. & Wittchen, H. 2006, "Prevalence of generalized anxiety disorder in general practice in Denmark, Finland, Norway, and Sweden", *Psychiatric Services,* vol. 57, no. 12, pp. 1738–1744.

Murray, C.J., Vos, T., Lozano, R., Naghavi, M., Flaxman, A.D., Michaud, C., Ezzati, M., Shibuya, K., Salomon, J.A. & Abdalla, S. 2012, "Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010", *The Lancet,* vol. 380, no. 9859, pp. 2197–2223.

Nenonen, M., Tuori, T., Pelanteri, S. & Kautiainen, H. 2001, "Psykiatrian erikoisalan kolme vuosikymmentä 1970–1999. Rakennemuutos laitoshoidon hoitoilmoitustietojen valossa. (Three decades of psychiatric specialty 1970–1999. Structural change of inpatient care in the light of treatment registers)", *Suomen Lääkärilehti,* vol. 56, no. 33, pp. 3227–3233.

Nice Guidelines 2011, "Common mental health problems: identification and pathways to care, Clinical guideline [CG123]". Available: https://www.nice.org.uk/guidance/cg123/chapter/1-guidance#stepped-care [2021, 12/26].

Niemelä, H. 2014, "Yhteisvastuuta ja valinnanvapautta. Sairausvakuutus 50 vuotta". *Kelan tutkimusosasto*. https://helda.helsinki.fi/bitstream/handle/10138/136455/Yhteisvastuuta_ja_valinnanvapautta.pdf?sequence=1&isAllowed=y

OECD, Organisation for Economic Co-Operation and Development (OECD). Health Expenditure and Financing. Available: http://stats.oecd.org/Index.aspx?DataSetCode=SHA# [2021, 12/26].

OECD Publishing 2018, "Health at a glance: Europe 2018: state of health in the EU cycle", Organisation for Economic Co-operation and Development OECD. https://www.oecd-ilibrary.org/docserver/health_glance_eur-2018-en.pdf?expires=1640615109&id=id&accname=guest&checksum=03B50C99B80E6B6210BFA8DE1F28EFD9.

Olesen, J., Gustavsson, A., Svensson, M., Wittchen, H., Jönsson, B., CDBE2010 Study Group & European Brain Council 2012, "The economic cost of brain disorders in Europe", *European journal of neurology,* vol. 19, no. 1, pp. 155–162.

Park, S.J., Jeon, H.J., Kim, J.Y., Kim, S. & Roh, S. 2014, "Sociodemographic factors associated with the use of mental health services in depressed adults: results from the Korea National Health and Nutrition Examination Survey (KNHANES)", *BMC health services research,* vol. 14, no. 1, p. 645.

Parpola, A. 2013, "Toivo / Häpeä, psykiatria Modernissa Suomessa", Suomen Psykiatriyhdistys ry, Keuruu.

Peen, J. & Dekker, J. 2001, "Social deprivation and psychiatric service use for different diagnostic groups", *Social science & medicine (1982),* vol. 53, no. 1, pp. 1–8.

Perälä, J., Saarni, S.I., Ostamo, A., Pirkola, S., Haukka, J., Härkänen, T., Koskinen, S., Lönnqvist, J. & Suvisaari, J. 2008, "Geographic variation and sociodemographic characteristics of psychotic disorders in Finland", *Schizophrenia research,* vol. 106, no. 2, pp. 337–347.

Perälä, J., Suvisaari, J., Saarni, S.I., Kuoppasalmi, K., Isometsä, E., Pirkola, S., Partonen, T., Tuulio-Henriksson, A., Hintikka, J. & Kieseppä, T. 2007, "Lifetime prevalence of psychotic and bipolar I disorders in a general population", *Archives of General Psychiatry,* vol. 64, no. 1, pp. 19–28.

Pirkola, S.P., Isometsä, E., Suvisaari, J., Aro, H., Joukamaa, M., Poikolainen, K., Koskinen, S., Aromaa, A. & Lönnqvist, J.K. 2005, "DSM-IV mood-, anxiety-and alcohol use disorders and their comorbidity in the Finnish general population", *Social psychiatry and psychiatric epidemiology,* vol. 40, no. 1, pp. 1–10.

Pirkola, S. & Sohlman, B. 2005, "Mielenterveysatlas, tunnuslukuja Suomesta". Stakes, Helsinki. https://www.julkari.fi/bitstream/handle/10024/75445/MielenterveysAtlas2005.pdf?sequence=1&isAllowed=y.

Pirkola, S., Sohlman, B., Heilä, H. & Wahlbeck, K. 2007, "Reductions in postdischarge suicide after deinstitutionalization and decentralization: a nationwide register study in Finland", *Psychiatric Services,* vol. 58, no. 2, pp. 221–226.

Pirkola, S., Sund, R., Sailas, E. & Wahlbeck, K. 2009, "Community mental-health services and suicide rate in Finland: a nationwide small-area analysis", *The Lancet,* vol. 373, no. 9658, pp. 147–153.

Prince, M., Patel, V., Saxena, S., Maj, M., Maselko, J., Phillips, M.R. & Rahman, A. 2007, "No health without mental health", *The Lancet,* vol. 370, no. 9590, pp. 859–877.

Pylkkänen, K. 2000, "Psykiatrian rakennemuutos epäonnistui – on korjaavan jälkihoidon aika. (The structural reform of psychiatry failed – it is time for repairing after care)", *Suomen lääkärilehti,* vol. 55, no. 44, p. 4479.

Raine, R., Fitzpatrick, R. & de Pury, J. 2016, "Challenges, solutions and future directions in evaluative research"*, Journal of health services research & policy*, vol. 21, no. 4, pp. 215–216.

Reeves, P., Szewczyk, Z., Proudfoot, J., Gale, N., Nicholas, J. & Anderson, J. 2019, "Economic Evaluations of Stepped Models of Care for Depression and Anxiety and Associated Implementation Strategies: A Review of Empiric Studies", *International journal of integrated care,* vol. 19, no. 2.

Reijneveld, S.A. & Schene, A.H. 1998, "Higher prevalence of mental disorders in socioeconomically deprived urban areas in the Netherlands: community or personal disadvantage?", *Journal of epidemiology and community health,* vol. 52, no. 1, pp. 2–7.

Rezvyy, G., Øiesvold, T., Parniakov, A., Ponomarev, O., Lazurko, O. & Olstad, R. 2007, "The Barents project in psychiatry: a systematic comparative mental health services study between Northern Norway and Archangelsk County", *Social psychiatry and psychiatric epidemiology,* vol. 42, no. 2, pp. 131–139.

Romero-López-Alberca, C., Gutierrez-Colosia, M. R., Salinas-Pérez, J. A., Almeda, N., Furst, M., Johnson, S., & Salvador-Carulla, L. (2019). Standardised description of health and social care: "A systematic review of use of the ESMS/DESDE (European Service Mapping Schedule/Description and Evaluation of Services and DirectoriEs)", *European Psychiatry*, vol. 61, pp. 97–110.

Rosenberg, S.P., Salvador-Carulla, L., Hickie, I.B. & Mendoza, J. 2020, "Stepped mental health care model leading Australia astray", *Australasian Psychiatry*. https://openresearch-

repository.anu.edu.au/bitstream/1885/216656/1/01_Rosenberg_Stepped_mental_health_care_2020.pdf.

Roy-Byrne, P.P., Wagner, A.W. & Schraufnagel, T.J. 2005, "Understanding and treating panic disorder in the primary care setting", *The Journal of clinical psychiatry,* vol. 66 Suppl 4, pp. 16–22.

Saarni, S.I., Viertiö, S., Perälä, J., Koskinen, S., Lönnqvist, J. & Suvisaari, J. 2010, "Quality of life of people with schizophrenia, bipolar disorder and other psychotic disorders", *The British Journal of Psychiatry,* vol. 197, no. 5, pp. 386–394.

Saarni, S.I., Suvisaari, J., Sintonen, H., Pirkola, S., Koskinen, S., Aromaa, A. & Lönnqvist, J. 2007, "Impact of psychiatric disorders on health-related quality of life: general population survey", *British Journal of Psychiatry,* vol. 190, no. 4, pp. 326–332.

Salinas-Perez, J.A., Gutierrez-Colosia, M.R., Furst, M.A., Suontausta, P., Bertrand, J., Almeda, N., Mendoza, J., Rock, D., Sadeniemi, M., Cardoso, G. & Salvador-Carulla, L. 2020, "Patterns of Mental Health Care in Remote Areas: Kimberley (Australia), Nunavik (Canada), and Lapland (Finland).", *The Canadian Journal of Psychiatry,* vol. 65, no. 10, pp. 721–730.

Salinas-Perez, J.A., Salvador-Carulla, L., Saldivia, S., Grandon, P., Minoletti, A. & Romero-Lopez-Alberca, C. 2018, "Integrated mapping of local mental health systems in Central Chile.", *Pan Am J Public Heal.,* vol. 42, p. 144.

Salisbury, T.T., Killaspy, H. & King, M. 2016, "An international comparison of the deinstitutionalisation of mental health care: Development and findings of the Mental Health Services Deinstitutionalisation Measure (MENDit).", *BMC psychiatry,* vol. 16, no. 1, pp. 1–10.

Salo, M. 2019, "Hullut mielenterveysmarkkinat. Kuinka korjata kurjistuneet mielenterveyspalvelut?" Vastapaino, Tampere.

Salokangas, R., Poutanen, O., Stengård, E., Jähi, R. & Palo-oja, T. 1996, "Prevalence of depression among patients seen in community health centres and community mental health centres", *Acta Psychiatrica Scandinavica,* vol. 93, no. 6, pp. 427–433.

Salvador-Carulla, L., Amaddeo, F., Gutiérrez-Colosía, M.R., Salazzari, D., Gonzalez-Caballero, J.L., Montagni, I., Tedeschi, F., Cetrano, G., Chevreul, K., Kalseth, J., Hagmair, G., Strassmayr, C., Park, A., Sfetcu, R., Wahlbeck, K. & Garcia-Alonso, C. 2015, "Developing a tool for mapping adult mental health care provision in Europe: the REMAST research protocol and its contribution to better integrated care.", *International Journal of Integrated Care,* p. 15.

Salvador-Carulla, L., Alvarez-Galvez, J., Romero, C., Gutiérrez-Colosía, M.R., Weber, G., McDaid, D., Dimitrov, H., Sprah, L., Kalseth, B. & Tibaldi, G. 2013, "Evaluation of an integrated system for classification, assessment and comparison of services for long-term care in Europe: the eDESDE-LTC study", *BMC health services research,* vol. 13, no. 1, p. 218.

Salvador-Carulla L., Dimitrov H., Weber G., McDaid D., Venner B., Sprah L., Romero C., Ruiz M., Tibaldi G., Johnson S., for DESDE-LTC Group (eds.) (2011) DESDE-LTC: EVALUATION AND CLASSIFICATION OF SERVICES FOR LONG TERM CARE IN EUROPE . Spain: Psicost and Catalunya Caixa. http://www.edesdeproject.eu/images/documents/eDESDE-LTC_Book.pdf.

Salvador-Carulla, L., Romero, C., Weber, G., Dimitrov, H., Sprah, L., Venner, B. & McDaid, D. 2011, "Classification, assessment and comparison of European LTC services", *Ageing and long-term care,* vol. 17, no. 2–3, p. 27.

Salvador-Carulla, L., Saldivia, S., Martinez-Leal, R., Vicente, B., Garcia-Alonso, C., Grandon, P. & Haro, J.M. 2008, "Meso-level comparison of mental health service availability and use in Chile and Spain", *Psychiatric Services,* vol. 59, no. 4, pp. 421–428.

Salvador-Carulla, L., Ruiz, M., Romero, C. & Poole, M. 2012, "European Service Mapping Schedule - Revised. Finnish. Eurooppalainen mielenterveyspalvelujen kartoittamistyökalu.", Terveyden ja hyvinvoinnin laitos (THL), Helsinki, Finland.

Salvador-Carulla, L., Tibaldi, G., Johnson, S., Scala, E., Romero, C., Munizza, C., CSRP group & RIRAG group 2005, "Patterns of mental health service utilisation in Italy and Spain – an investigation using the European Service Mapping Schedule", *Social psychiatry and psychiatric epidemiology,* vol. 40, no. 2, pp. 149–159.

Samele, C. & Manning, N. 2000, "Level of caregiver burden among relatives of the mentally ill in South Verona", *European Psychiatry,* vol. 15, no. 3, pp. 196–204.

Senaratne, R., Van Ameringen, M., Mancini, C. & Patterson, B. 2010, "The burden of anxiety disorders on the family", *The Journal of nervous and mental disease,* vol. 198, no. 12, pp. 876–880.

Sihvo, S., Hämäläinen, J., Kiviruusu, O., Pirkola, S. & Isometsä, E. 2006, "Treatment of anxiety disorders in the Finnish general population", *Journal of affective disorders,* vol. 96, no. 1–2, pp. 31–38.

Sotkanet *,* The Finnish Statistics and Indicator Bank. Available: https://www.sotkanet.fi/sotkanet/fi/index [2017, 9/22].

Stat*,* Statistics Finland. Available: http://www.stat.fi/tup/tilastotietokannat/index.html [2017, 09/22].

Stein, M.B., McQuaid, J.R., Laffaye, C. & McCahill, M.E. 1999, "Social phobia in the primary care medical setting", *Journal of Family Practice,* vol. 48, pp. 514–519.

Subramaniam, M., Abdin, E., Vaingankar, J.A., Nan, L., Heng, D., McCrone, P. & Chong, S.A. 2013, "Impact of psychiatric disorders and chronic physical conditions on health-related quality of life: Singapore Mental Health Study". *Journal of affective disorders*, 2013, 147.1-3: 325–330.

Suvisaari, J., Perälä, J., Saarni, S.I., Juvonen, H., Tuulio-Henriksson, A. & Lönnqvist, J. 2016, "The Epidemiology and Descriptive and Predictive Validity of DSM-IV Delusional Disorder and Subtypes of Schizophrenia.", *Clinical Schizophrenia & Related Psychoses,* vol. Jan, pp. 289–297.

Suvisaari, J., Aalto-Setälä, T., Tuulio-Henriksson, A., Härkänen, T., Saarni, S.I., Perälä, J., Schreck, M., Castaneda, A., Hintikka, J. & Kestilä, L. 2009, "Mental disorders in young adulthood", *Psychological medicine,* vol. 39, no. 2, pp. 287–299.

Taylor, T.L., Killaspy, H., Wright, C., Turton, P., White, S., Kallert, T.W., Schuster, M., Cervilla, J.A., Brangier, P. & Raboch, J. 2009, "A systematic review of the international published literature relating to quality of institutional care for people with longer term mental health problems", *BMC psychiatry,* vol. 9, no. 1, p. 55.

ten Have, M., Oldehinkel, A., Vollebergh, W. & Ormel, J. 2003, "Does educational background explain inequalities in care service use for mental health problems in the Dutch general population?", *Acta Psychiatrica Scandinavica,* vol. 107, no. 3, pp. 178–187.

The Finnish Medical Association. Available: https://www.laakariliitto.fi/laakariliitto/tutkimus/palkka-ja-ansiot/.

THL 2017, *THL tilastoraportti, Psykiatrinen erikoissairaanhoito 2016*., Finnish Institute for Health and Welfare. https://www.julkari.fi/bitstream/handle/10024/136732/Tr06_18.pdf?sequence=1&isAllowed=y.

Thornicroft, G., Deb, T. & Henderson, C. 2016, "Community mental health care worldwide: current status and further developments", *World Psychiatry,* vol. 15, no. 3, pp. 276–286.

Thornicroft, G. 1993, "Urban-rural differences in the associations between social deprivation and psychiatric service utilization in schizophrenia and all diagnoses: a case-register study in Northern Italy", *Psychological medicine,* vol. 23, no. 2, p. 487.

Thornicroft, G. & Tansella, M. 2013, "The balanced care model: the case for both hospital- and community-based mental healthcare", *The British journal of psychiatry,* vol. 202, no. 4, pp. 246-248.

Tibaldi, G., Munizza, C., Pasian, S., Johnson, S., Salvador-Carulla, L., Zucchi, S., Cesano, S., Testa, C., Scala, E. & Pinciaroli, L. 2005, "Indicators predicting use of mental health services in Piedmont, Italy", *The journal of mental health policy and economics,* vol. 8, no. 2, pp. 95–106.

Tuori, T. 2011, "Psykiatrian rakennemuutos Suomessa", *Suuntaaja,* vol. 1, no. 2011, pp. 1–4.

Tuori, T., Kiikkala, I. & Lehtinen, V. 2000, "Psykiatrisen hoidon järjestämisestä ja resursseista 1990-luvulla", *Suomen Lääkärilehti,* vol. 55, no. 44, pp. 4533–4538.

Tuulio-Henriksson, A. 2013, "Mielenterveyden häiriöiden kuntoutus ja monitahoinen palvelujärjestelmä." in *Kuntoutus muuttuu – entä kuntoutusjärjestelmä?*, eds. U. Ashorn, I. Autti-Rämö, J. Lehto & M. Rajavaara, Kela, pp. 146–160.

Törmä, S., Huotari, K., Nieminen, J. & Tuokkola, K. 2014, "Unelmana oma asunto ja tukea pärjäämiseen Mielenterveyskuntoutujien asumisratkaisut ja niiden kehittäminen." *Ympäristöministeriön raportteja* 24/2014. https://helda.helsinki.fi/bitstream/handle/10138/136174/YMra_24_2014.pdf?sequence=1

Unger, F. & Eder, M. 2012, "Health in the regions: cross border health care: harmonization in European regions", European Institute of Health of the European Academy of Sciences and Arts, Salzburg, Austria. https://cor.europa.eu/en/engage/studies/Documents/health-in-the-regions/health-in-the-regions.pdf.

Valdes-Stauber, J. & Kilian, R. 2015, "Is the level of institutionalisation found in psychiatric housing services associated with the severity of illness and the functional impairment of the patients? A patient record analysis", *BMC psychiatry,* vol. 15, no. 1, p. 215.

Van Spijker, B.A., Salinas-Perez, J.A., Mendoza, J., Bell, T., Bagheri, N., Furst, M.A., Reynolds, J., Rock, D., Harvey, A., Rosen, A. & Salvador-Carulla, L. 2019, "Service availability and capacity in rural mental health in Australia: Analysing gaps using an Integrated Mental Health Atlas", *Australian & New Zealand Journal of Psychiatry,* vol. 53, no. 10, pp. 1000–1012.

van Stratten, A., Hill, J.J., Richards, D. & Cuijpers, P. 2014, "Stepped care treatment delivery for depression: a systematic review and meta-analysis", *Psychological medicine*, vol. 45, no.2, pp. 231–246.

Vilaplana, M., Ochoa, S., Martínez, A., Villalta, V., Martínez-Leal, R., Puigdollers, E., Salvador, L., Martorell, A., Muñoz, P.E. & Haro, J.M. 2007, "Validación en población española de la entrevista de carga familiar objetiva y subjetiva (ECFOS-II) en familiares de pacientes con esquizofrenia. ", *Actas Esp. Psiquiatr.,* vol. 35, pp. 372–381.

Vorma, H., Rotko, T., Larivaara, M., Kosloff, A. (editors), 2020, "National Mental Health Strategy and Programme for Suicide Prevention 2020–2030. *Publications of the Ministry of Social Affairs and Health*. 2020:6. http://urn.fi/URN:ISBN:978-952-00-4139-7

Vuorilehto, M., Melartin, T. & Isometsä, E. 2005, "Depressive disorders in primary care: recurrent, chronic, and co-morbid", *Psychological medicine,* vol. 35, no. 5, pp. 673–682.

Vyssoki, B., Willeit, M., Blüml, V., Höfer, P., Erfurth, A., Psota, G., Lesch, O. & Kapusta, N. 2011, "Inpatient treatment of major depression in Austria between 1989 and 2009: Impact of downsizing of psychiatric hospitals on admissions, suicide rates and outpatient psychiatric services", *Journal of affective disorders,* vol. 133, no. 1-2, pp. 93–96.

Wahlbeck, K. 2007, "Cochrane-katsausten patevyys", *Duodecim,* vol. 123, no. 3, pp. 245.

Wahlbeck, K., 2011, "European comparisons between mental health services", Epidemiol. Psychiatr. Sci. vol. 20, pp. 15–18

Wahlbeck, K., 2015, "Public mental health: the time is ripe for translation of evidence into practice." World psychiatry : official journal of the World Psychiatric Association (WPA) vol. 14, no. 1, pp. 36–42.

Wahlbeck, K., Westman, J., Nordentoft, M., Gissler, M. & Laursen, T.M. 2011, "Outcomes of Nordic mental health systems: life expectancy of patients with mental disorders", *The British Journal of Psychiatry,* vol. 199, no. 6, pp. 453–458.

Westman, J., Gissler, M. & Wahlbeck, K. 2012, "Successful deinstitutionalization of mental health care: increased life expectancy among people with mental disorders in Finland", *European journal of public health,* vol. 22, no. 4, pp. 604–606.

While, D., Bickley, H., Roscoe A., et al. 2012, "Implementation of mental health service recommendations in England and Wales and suicide rates,

1997–2006: a cross-sectional and before-and-after observational study", The Lancet; vol. 379, pp. 1005–1012.

Whiteford, H.A., Degenhardt, L., Rehm, J., Baxter, A.J., Ferrari, A.J., Erskine, H.E., Charlson, F.J., Norman, R.E., Flaxman, A.D. & Johns, N. 2013, "Global burden of disease attributable to mental and substance use disorders: findings from the Global Burden of Disease Study 2010", *The Lancet,* vol. 382, no. 9904, pp. 1575–1586.

WHO*, European Health for All Database*. Available: https://gateway.euro.who.int/en/datasets/european-health-for-all-database/ [2021, 12/26].

Winkler, P., Barrett, B., McCrone, P., Csemy, L., Janouskova, M. & Höschl, C. 2016, "Deinstitutionalised patients, homelessness and imprisonment: systematic review", *The British Journal of Psychiatry,* vol. 208, no. 5, pp. 421–428.

Wittchen, H.U. & Jacobi, F. 2005, "Size and burden of mental disorders in Europe – a critical review and appraisal of 27 studies", *European neuropsychopharmacology : the journal of the European College of Neuropsychopharmacology,* vol. 15, no. 4, pp. 357–376.

Wittchen, H.U., Jacobi, F., Rehm, J., Gustavsson, A., Svensson, M., Jönsson, B., Olesen, J., Allgulander, C., Alonso, J., Faravelli, C., Fratiglioni, L., Jennum, P., Lieb, R., Maercker, A., van Os, J., Preisig, M., Salvador-Carulla, L., Simon, R. & Steinhausen, H. 2011, "The size and burden of mental disorders and other disorders of the brain in Europe 2010". *European neuropsychopharmacology*, vol. 21, no, 9, pp. 655–679.

World Health Organization 2013, "Comprehensive mental health action plan 2013–2020", *Geneva: World Health Organization, http://apps.who.int/iris/bitstream/handle/10665/89966/9789241506021_eng.pdf;jsessionid=597AB7CBA7B084AA2E57E9D2FA2D6CD2?sequence=1* .

Yatham, L.N., Kennedy, S.H., Parikh, S.V., Schaffer, A., Bond, D.J., Frey, B.N., Sharma, V., Goldstein, B.I., Rej, S. & Beaulieu, S. 2018, "Canadian Network for Mood and Anxiety Treatments (CANMAT) and International Society for Bipolar Disorders (ISBD) 2018 guidelines for the management of patients with bipolar disorder", *Bipolar disorders,* vol. 20, no. 2, pp. 97–170.

Zendjidjian, X., Richieri, R., Adida, M., Limousin, S., Gaubert, N., Parola, N., Lançon, C. & Boyer, L. 2012, "Quality of life among caregivers of individuals with affective disorders", *Journal of affective disorders,* vol. 136, no. 3, pp. 660–665.

8 SUPPLEMENTS

8.1 THE SOCIOECONOMIC VARIABLES

8.1.1 MENTAL HEALTH INDEX

Mental health index, not age-standardized (ind. 254) (source: www.sotkanet.fi)
Data source: Institute for Health and Welfare (THL) Years: 2002–2016 Update frequency: Once a year Data content:
The indicator has been divided into three parts and is based on four different data sources:
1. Suicides and suicide attempts leading to hospitalization (Statistics Finland): The indicator gives the number of suicides (X60–X84, Y870) or suicide attempts leading to hospitalization among people aged 16–79 years as a proportion of the population of the same age. 2. Entitlement to special refunds for psychosis-related medication (Social Insurance Institution of Finland): The indicator gives the number of granted entitlements to special refunds for medicines prescribed for treatment of psychosis (severe psychosis and other severe mental disorders, psychosis requiring demanding treatment) as a proportion of the total population. 3. Disability pensions due to mental health issues (Finnish Centre for Pensions): The indicator gives the number of persons aged 16–64 years receiving a disability pension (under an earnings-related pension system and/or the national pension system) due to mental and behavioural disorders (F00–F99) as a proportion of the population of the same age. Disability pensions include pensions granted until further notice and fixed-term rehabilitation benefits.
For the last year in the times series, the value of the index is 100 for the whole country. When examining a time series, it should be kept in mind that new updates also affect the index values for previous years.
Interpretation
The indicator describes through three dimensions the prevalence of mental health problems as a proportion of the population of the same age. Each of the three dimensions represents one-third of the total weight of the disease

group in the morbidity index. Suicides and attempted suicides have the same weight in dimension 1.

The region's age structure has an impact on the index as the prevalence of mental disorders varies between different age groups. As this mental health index is not age-standardized; it reflects the burden of disease in the region and the consequent demand for services in the region compared with the country as a whole.

Comparisons of mental disorder prevalence in different regions should, however, use the age-standardized index (id: 253), which is less influenced by regional differences in age structure.

Classifications

- Municipality, region, hospital district, area for the regional state administrative agency, university hospital special responsibility area, the whole country

Subjects

- morbidity
- morbidity index
- health status
- THL's morbidity index
- mental health

Data source

- Morbidity indices (THL)
  THL's Morbidity Index is based on national register data on the prevalence of the most common chronic diseases. The statistical data are updated annually from the national registers of the THL, Statistics Finland, the Finnish Centre for Pensions, the Finnish Cancer Registry and the Social Insurance Institution (KELA).

Restrictions

The index is calculated using the data for three consecutive years to ensure that even the smallest regions have a sufficient number of events. For example, the 2010 index is based on the data for 2008–2010. A margin of error (confidence interval) has also been calculated for each index value so

that the effects of random variation on the index values can be assessed. It is absolutely necessary to take the margins of error into account when interpreting data for small municipalities.
Remarks
Morbidity indexes for all municipalities, including confidence intervals, are available online at the website Terveytemme (only in Finnish).
Additional information
• The website Terveytemme.fi (in Finnish language only)
• Seppo Koskinen (firstname.lastname@thl.fi)
Member of
• THL's morbidity indices
• Welfare and health (mental health services)
• Service need (mental health services)

8.1.2 THE MEASURE OF EDUCATIONAL LEVEL

Measure of educational level (ind. 180) (Source: www.sotkanet.fi)
Data source: Statistics Finland Years: 1990–2019 Update frequency: Once a year
Data content:
The indicator gives the level of education in the population, giving the average length of education and training required for each person's highest educational qualification or degree after basic education.
The measure of educational level describes the educational level of a population group by the length of education per person. For example, the value 246 shows that the theoretical length of education per person is 2.5 years after completing basic education. The measure usually covers the population aged 20 and over because most people under 20 are still in school, so they have not yet been able to attain a qualification or degree.
Population having completed a qualification or degree refers to those completing general upper secondary schools, vocational educational establishments, polytechnics and universities, as well as those attaining initial, further and specialist vocational qualifications through competence tests. Those who have only completed basic education are not included. Qualifications and degrees are classified according to each person's highest, most recent vocational qualification or degree.
Interpretation:
With this measure, it is easy to compare the level of education between different geographical areas and monitor changes over time.
Classifications:
• male, female, combined
• Municipality, subregion, region, hospital district, area for the regional state administrative agency, university hospital special responsibility area, major region, mainland Finland/Åland, the whole country
• 20 years and older
Subjects:
• education and training
• educational structure
Data source:
• Educational structure of population (Statistics Finland)
Restrictions:
The Register of Completed Education and Degrees is based on data on

educational qualifications and degrees collected directly from educational establishments. This ensures the reliability of the data regarding qualifications and degrees completed in Finland. By contrast, no comprehensive data are available on qualifications and degrees completed abroad.
Additional information:
Statistics Finland: the publication - Statistics on Educational Institutions
koulutustilastot@stat.fi
Member of:
Socio-economic structure (Welfare Compass)
Educational structure
General indicators
Basic information (living conditions)
Factors predicting and explaining the adverse effects of substance abuse

8.1.3 UNEMPLOYMENT RATE

Unemployed people as a percentage of the labour force (ind. 181) (Source: www.sotkanet.fi)
Data source: Ministry of Employment and the Economy (TEM) Years: 1991–2020 Update frequency: Once a year
Data content:
The indicator gives the unemployed as a percentage of the total labour force.
An unemployed person is someone who is not in an employment relationship or who is not full-time self-employed or a full-time student in the manner referred to in Chapter 2 of the Unemployment Security Act.
Even persons in an employment relationship are considered unemployed if they are laid off entirely (03) or if their regular weekly working hours are less than 4 hours. Following a legislative amendment in 2013, there are no longer age limits for unemployed job seekers, which means that as of 2013, unemployed job seekers can be any age. Full-time pupils and students are not considered unemployed, even during holidays.
The total average number of unemployed during the year is usually given as an average calculated by the number of unemployed job seekers (unemployed and entirely laid off individuals whose work application is active on the day of calculation) on the last day of each month.
The data are reported each month by the Centre for Economic Development, Transport and the Environment according to gender.
People are counted as employed if, during the research period, they have worked for pay or profit for at least one day or have worked as an assisting family member for at least a third of the work hours regarded as normal in the field or were temporarily absent from work. The labour force consists of those who were employed or unemployed during the research period. The number of employed is not available until about two years after the end of the statistical year in the employment statistics of Statistics Finland. It is used as the divisor in relative unemployment figures.
Interpretation
Classifications
• male, female, combined
• Municipality, subregion, region, hospital district, area for the regional state administrative agency, university hospital special responsibility area, major region, mainland Finland/Åland, the whole country
Subjects
• unemployment
• unemployed people

- deprivation
- marginalization
- key indicators on alcohol and drugs

Data source:

- Employment Statistics (Statistics Finland)
  Employment statistics are annual statistics providing data by region on the population's economic activity and employment. The population for the statistics is the permanently resident population in the country on the last day of the year. The data are mainly derived from administrative registers and statistical data files.
- Employment Service Statistics (MEE)

Restrictions:

Unemployment is monitored monthly in Finland by means of two separate statistics. Statistics Finland carries out the Labour Force Survey based on sampling. The Sotkanet.fi indicators available by geographical area in Finland are based on the Employment Service Statistics of the Ministry of Employment and the Economy, which draws on data in client registers of the employment and economic development offices:
-Unemployed people, as a percentage of the labour force (181)
-Long-term unemployed, as a percentage of the unemployed population (326)
-Unemployed young people, as a percentage of the labour force aged 18–24 (189).
The unemployment figures based on the Labour Force Survey and those given in the Employment Service Statistics differ from each other. This is because they use different principles in compiling statistics for the degree of activity shown in job seeking and the job seeker's availability for work. The Ministry's Employment Service Statistics are based on legislation and administrative provisions. Statistics Finland's Labour Force Survey, in turn, follows the recommendations of the International Labour Organization (ILO) and the practices required by Eurostat, the Statistical Office of the European Communities.

Individual-level data are confidential. For the sake of privacy protection, no municipality-level data with less than five cases are published.

Literature

Additional information:

- Petri Syvänen (firstname.lastname[at]tem.fi)
- THL, Topics - Health and welfare inequalities

Member of:

- General indicators
- Service need (social services and measures to support employment)
- Service need (living conditions)

• Unemployment
• Factors predicting and explaining the adverse effects of substance abuse

8.1.4 SINGLE HOUSEHOLDS

Household-dwelling units with one person, as a percentage of all household-dwelling units (ind. 324) (Source: www.sotkanet.fi)
Data source: Statistics Finland Years: 1990–2019 Update frequency: Once a year Data content:
The indicator gives household-dwelling units with one person as a percentage of all household-dwelling units. A household-dwelling unit consists of all persons permanently occupying the same dwelling.
The population for the statistics on household-dwelling units and housing conditions is formed by persons permanently resident in actual dwellings, i.e., the so-called dwelling population. Persons who, according to the Population Information System of the Population Register Centre, are permanently institutionalized, living in residential homes and abroad, and homeless people are not included in the dwelling population. Likewise, persons living in buildings classified as residential homes whose living quarters do not meet the definition of a dwelling are not included.
Population proportions are calculated at THL based on the Population Statistics of Statistics Finland.
Classifications:
• Municipality, subregion, region, hospital district, area for the regional state administrative agency, university hospital special responsibility area, major region, mainland Finland/Åland, the whole country
Subjects:
• household-dwelling units
• housing
• people living alone
Data source:
• Dwellings and housing conditions (Statistics Finland) Statistics on dwellings and housing conditions are produced annually; they describe the existing stock, number of dwellings and housing conditions of household-dwelling units on the last day of

the year. The dwelling stock comprises both permanently occupied dwellings and dwellings and flats without permanent occupants. Statistics Finland receives most of the data on dwellings from the population information system of the Population Register Centre, to which municipal building inspection authorities report data concerning buildings and dwellings that are subject to building permits. All persons residing permanently in the same dwelling form a household-dwelling unit. The statistics provide data on the dwelling stock by variables like tenure status, type of building, number of rooms and amenities.
Additional information:
• asuminen.tilasto@tilastokeskus.fi
Member of:
• Family structure (Welfare Compass)
• Household-dwelling units in different age groups
• General indicators

8.2 THE ESMS-R/DESDE-LTC MAPPING TREE

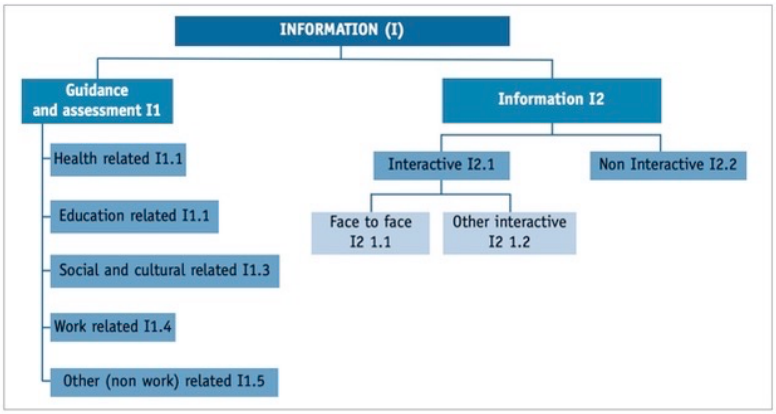

Figure 12 Information for care coding branch. (Source: Salvador-Carulla L., Dimitrov H., Weber G., McDaid D., Venner B., Sprah L., Romero C., Ruiz M., Tibaldi G., Johnson S., for DESDE-LTC Group (eds.) (2011) DESDE-LTC: EVALUATION AND CLASSIFICATION OF SERVICES FOR LONG TERM CARE IN EUROPE. Spain: Psicost and Catalunya Caixa. Republished with the permission of Luis Salvador-Carulla.)

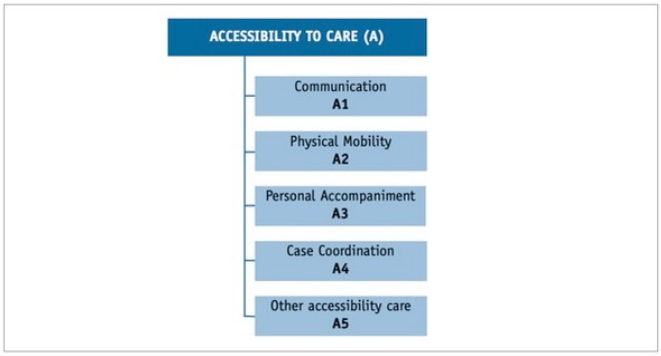

Figure 13 Accessibility to care coding branch. (Source: Salvador-Carulla L., Dimitrov H., Weber G., McDaid D., Venner B., Sprah L., Romero C., Ruiz M., Tibaldi G., Johnson S., for DESDE-LTC Group (eds.) (2011) DESDE-LTC: EVALUATION AND CLASSIFICATION OF SERVICES FOR LONG TERM CARE IN EUROPE. Spain: Psicost and Catalunya Caixa. Republished with the permission of Luis Salvador-Carulla.)

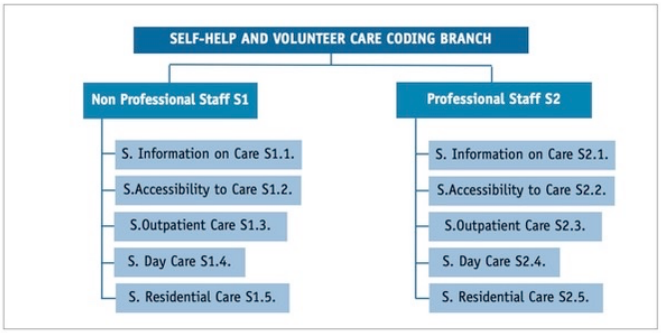

Figure 14 Self-help and volunteer coding branch. (Source: Salvador-Carulla L., Dimitrov H., Weber G., McDaid D., Venner B., Sprah L., Romero C., Ruiz M., Tibaldi G., Johnson S., for DESDE-LTC Group (eds.) (2011) DESDE-LTC: EVALUATION AND CLASSIFICATION OF SERVICES FOR LONG TERM CARE IN EUROPE. Spain: Psicost and Catalunya Caixa. Republished with the permission of Luis Salvador-Carulla.)

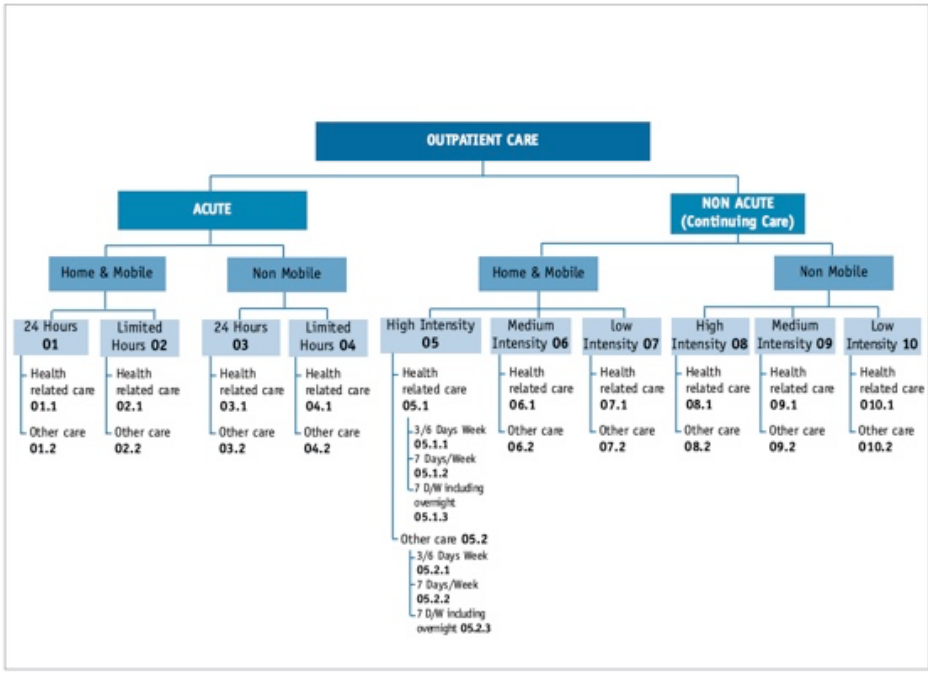

Figure 15 Outpatient care coding branch. (Source: Salvador-Carulla L., Dimitrov H., Weber G., McDaid D., Venner B., Sprah L., Romero C., Ruiz M., Tibaldi G., Johnson S., for DESDE-LTC Group (eds.) (2011) DESDE-LTC: EVALUATION AND CLASSIFICATION OF SERVICES FOR LONG TERM CARE IN EUROPE. Spain: Psicost and Catalunya Caixa. Republished with the permission of Luis Salvador-Carulla.)

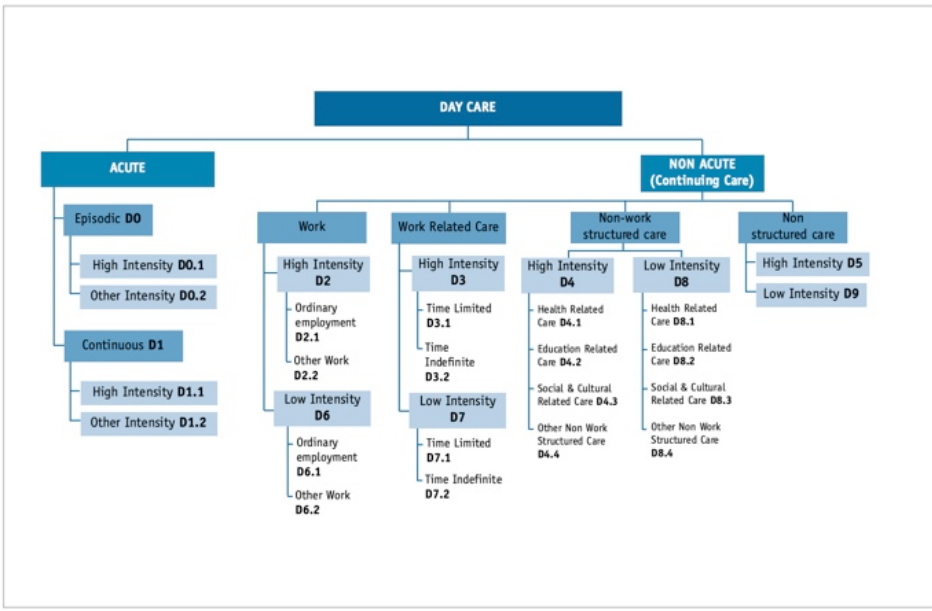

Figure 16 Day care coding branch. (Source: Salvador-Carulla L., Dimitrov H., Weber G., McDaid D., Venner B., Sprah L., Romero C., Ruiz M., Tibaldi G., Johnson S., for DESDE-LTC Group (eds.) (2011) DESDE-LTC: EVALUATION AND CLASSIFICATION OF SERVICES FOR LONG TERM CARE IN EUROPE. Spain: Psicost and Catalunya Caixa. Republished with the permission of Luis Salvador-Carulla.)

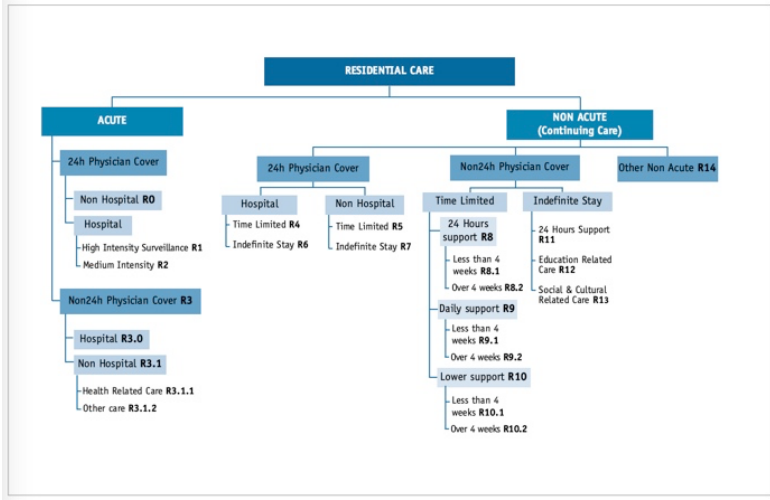

Figure 17 Residential care coding branch. (Source: Salvador-Carulla L., Dimitrov H., Weber G., McDaid D., Venner B., Sprah L., Romero C., Ruiz M., Tibaldi G., Johnson S., for DESDE-LTC Group (eds.) (2011) DESDE-LTC: EVALUATION AND CLASSIFICATION OF SERVICES FOR LONG TERM CARE IN EUROPE. Spain: Psicost and Catalunya Caixa. Republished with the permission of Luis Salvador-Carulla.)