

SAIJA KANKAANPÄÄ

Mental Health Among Somali Origin Migrants in Finland

Considerations for depressive
symptom manifestation, causal attributions of
mental health problems, and
psychiatric assessment



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“Nin madaxa laga baayo, meeli uma fyyooba”

“If a person has a sickness or pain in their head, no other parts will work”

Somali language proverb

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ABSTRACT

This dissertation examined Somali origin migrants' depressive symptoms and their perceived causes of mental health problems (i.e., causal attributions of mental health problems). Further, in order to gain understanding of what factors might explain previously reported differences in somatization and depressive symptom manifestation between different sociocultural groups, difficulties in emotional processing (alexithymia) and perceived causes of mental health problems were analyzed in relation to symptom manifestation. The validity of two commonly used psychiatric questionnaires, measuring depression, anxiety, and somatization, was analyzed in order to evaluate whether these questionnaires provide reliable insights into mental health among Finnish Somalis. The research setting involved three study samples. Perceived causes of mental health problems were examined among 128 older (i.e., over 50 years old) Somali origin migrants. Further, depressive symptom manifestation and difficulties in emotional processing (alexithymia) were analyzed comparing these older Somali origin migrants with 128 matched-pair Finnish-born individuals (Health 2000 study). The validity of depression, anxiety, and somatization questionnaires was compared in a population sample of a total of 1,356 Somali, Russian, and Kurdish origin migrants between the ages of 18 and 64 years (Maamu study of the National Institute of Health and Welfare).

Results showed that both Somalis and Finns manifested more somatic-affective depressive symptoms (e.g., insomnia and poor appetite) than cognitive depressive symptoms (e.g., feelings of guilt and self-blame), and that women in both groups reported higher overall levels of depression than men. Further, the results revealed that individual difficulties in emotional processing (alexithymia) were similarly associated with somatization symptoms among Somalis and Finns, whereas the association between emotional processing difficulties and depressive symptoms was stronger among Finns than Somalis. The older Somali origin migrants explained mental health problems through stressful life experiences, such as war and poverty, and socioreligious causes, such as loneliness and *jinn* spirits. Women, men, and individuals with personal experiences of mental health problems emphasized different such causes. The perceived causes of mental

health problems did not vary according to how long the individuals had lived in Finland, whether they had Finnish nationality or not, or proficiency in the Finnish language. The results indicated that perceived causes of mental health problems may shape depressive symptoms among older Somalis: individuals who explained mental health problems through life experiences (e.g., war) manifested fewer cognitive depressive symptoms (e.g., guilt) than others. Finally, the examined psychiatric questionnaires did not measure depression, anxiety, and somatization in a valid way among Somali, Russian, and Kurdish origin migrants, and the division of these symptoms into the theoretical categories of depression, anxiety, and somatization was not sustained. Instead, symptoms overlapped and co-varied in unique ways in all three migrant groups, suggesting sociocultural differences in mental health. The results are discussed in relation to cross-cultural and sociodemographic variation in depressive symptoms, and psychiatric assessment in multicultural contexts.

TIIVISTELMÄ

Tässä tutkimuksessa tarkasteltiin Suomessa asuvien somalialaistaustaisten maahanmuuttajien masennusoireita ja käsityksiä mielenterveysongelmien syistä. Lisäksi tavoitteena oli selvittää aikaisemmissa tutkimuksissa raportoituja eroja masennus- ja somatisaatio-oireiden ilmenemisessä eri sosiokulttuurisissa ryhmissä analysoimalla, miten mielenterveyskäsitykset ja vaikeudet tunteiden käsittelyssä (aleksitymia) olivat yhteydessä raportoituihin oireisiin. Tutkimuksessa analysoitiin myös, miten masennusta, ahdistusta ja somatisaatiota mittaavat psykiatriset kyselylomakkeet toimivat somalialaistaustaisten aikuisten parissa ja saadaanko näiden kyselylomakkeiden avulla luotettavaa tietoa heidän mielenterveydestään. Tutkimuksessa käytettiin kolmea tutkimusaineistoa. Käsityksiä mielenterveysongelmien syistä analysoitiin 128 ikääntyneen (yli 50-vuotiaan) somalialaistaustaisen parissa. Masennusoireiden ilmenemistä tutkittiin vertailemalla näitä 128 somalialaistaustaista ja 128 suomalaistaustaista yli 50-vuotiasta aikuista (Terveys 2000 –aineisto). Masennus-, ahdistus- ja somatisaatiokyselyiden luotettavuutta vertailtiin yhteensä 1 356 somalialais-, venäläis- ja kurditaustaisten aikuisten (18-64 vuotta) parissa (Terveysten- ja hyvinvoinninlaitoksen Maamu-aineisto).

Tulokset osoittivat, että sekä somalialais- että suomalaistaustaisilla oli enemmän somaattis-affektiivisiä masennusoireita (esim. unettomuus ja huono ruokahalu) kuin kognitiivisia masennusoireita (esim. syyllisyyden tunteet ja itsesyytökset) ja että naiset raportoivat miehiä enemmän masennusoireita molemmissa ryhmissä. Tulokset osoittivat, että tunteiden käsittelyn vaikeudet (aleksitymia) olivat samantapaisesti yhteydessä somatisaatio-oireisiin sekä somalialais- että suomalaistaustaisten keskuudessa, kun taas tunteiden käsittelyvaikeuksien ja masennusoireiden välinen yhteys oli vahvempi suomalaisten kuin somalialaisten parissa. Ikääntyneet somalialaistaustaiset selittivät mielenterveysongelmia vaikeilla elämäkokemuksilla, kuten sodalla ja köyhyydellä, sekä sosiaalisilla ja uskonnollisilla tekijöillä, kuten yksinäisyydellä ja *jinn* hengillä. Naiset ja miehet sekä mielenterveysdiagnoosin saaneet painottivat eri selityksiä mielenterveysongelmien synnyssä. Mielenterveyskäsitykset eivät vaihdelleet Suomessa oloajan, Suomen kansalaisuuden tai suomen kielen taidon

mukaan. Lisäksi tulokset osoittivat, että mielenterveyskäsitykset voivat olla yhteydessä masennusoireisiin somalialaistaustaisten parissa: ne osallistujista jotka selittivät mielenterveysongelmia vaikeilla elämäkokemuksilla (esim. sota) ilmaisivat vähemmän kognitiivisia masennusoireita (esim. syyllisyys) kuin muut. Tutkitut psykiatriset kyselylomakkeet eivät mitanneet masennusta, ahdistusta ja somatisaatiota luotettavalla tavalla somalialais-, venäläis- ja kurditaustaisten parissa ja näiden oireiden jakaminen teoreettisiin kategorioihin masennus, ahdistus ja somatisaatio ei saanut tukea. Sen sijaan oireet olivat päällekkäisiä ja oireiden väliset yhteydet olivat erilaisia jokaisessa ryhmässä viitaten sosiokulttuurisiin eroihin mielenterveysoireissa. Väitöskirjassa pohditaan, miten masennusoireet vaihtelevat suhteessa kulttuurisiin ja sosiodemografisiin tekijöihin sekä miten mielenterveyttä tulisi arvioida monikulttuurisissa konteksteissa.

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Any errors that remain are my sole responsibility.

Helsinki, 3.12.2017

Saija Kankaanpää

LIST OF ORIGINAL PUBLICATIONS

The thesis is based on the following publications, referred to in the text as Articles I-III.

I. Kuittinen, S., Punamäki, R.-L., Mölsä, M., Saarni, S. I., Tiilikainen, M., & Honkasalo, M.-L. (2014). Depressive symptoms and their psychosocial correlates among older Somali refugees and native Finns. *Journal of Cross-Cultural Psychology*, *45*(9), 1434–1452.

II. Kuittinen, S., Mölsä, M., Punamäki, R.-L., Tiilikainen, M., & Honkasalo, M.-L. (2017). Causal attributions of mental health problems and manifestation of depressive symptoms among older Somali refugees in Finland. *Transcultural Psychiatry*, *54*(2), 211–238.

III. Kuittinen, S., Velázquez, R., Castaneda, A., Punamäki, R.-L., Rask, S., & Suvisaari, J. (2017). Construct validity of the HSCL-25 and SCL-90-Somatization scales among Russian, Somali, and Kurdish origin migrants. *International Journal of Culture and Mental Health*, *10*(1), 1–18.

1 INTRODUCTION

In 2015, the number of involuntarily displaced persons worldwide was higher than ever before (United Nations High Commissioner for Refugees, UNHCR, 2016). The number of refugees globally totaled 63.5 million individuals, of which more than half came from only three countries: Afghanistan, Syria, and Somalia. Most refugees remain in other regions within their countries or in the neighboring geographical area, but the search for safety also leads many to faraway places around the world. In 2015, more than one million individuals sought asylum in Europe (UNHCR, 2016; Eurostat, 2016). In the same year, the number of asylum seekers in Finland exceeded 32,000 (Ministry of the Interior, 2016). This was a sudden but short-lived increase, as in previous years Finland received only 1,500–6,000 asylum seekers annually. In the next year, 2016, the number of asylum seekers entering Finland totaled less than 6,000 individuals (Finnish Immigration Service, 2017). According to nationality, the most numerous groups seeking asylum in Finland in 2015-2017 were Afghans, Iraqis, Syrians, and Somalis (Ministry of the Interior, 2016).

Research shows that migrants, and especially refugees, can be more vulnerable to mental health problems than general populations because of the accumulation of hardships, losses, and stress they encounter both before and after migration (Gerritsen et al., 2006; Kirmayer et al., 2011). Compared to the general population, higher prevalence rates of post-traumatic stress disorder (PTSD) have been found among refugees in North America, Europe, Australia, and New Zealand, while the rates of depression have not always been found to be elevated among refugees (Bhugra, 2003; Fazel, Wheeler, & Danesh, 2005; Kirmayer et al., 2011). In general, the prevalence estimations of mental health problems among refugees and migrants present great variation according specific diagnoses, study populations, and the methods used (Priebe, Giacco, & El-Nagib, 2016). For example, comparative studies have revealed fewer anxiety, PTSD, and depressive disorders among Somalis than among other refugee groups in the Netherlands (Gerritsen et al., 2006) and in the United Kingdom (Silveira & Ebrahim, 1998).

The observed differences in the prevalence rates of mental health problems can be partly explained by methodological challenges in assessing psychological well-being among diverse linguistic and sociocultural groups (Bogic, Njoku, & Priebe, 2015). Research indicates that factors such as gender and sociocultural variables (e.g., religion, cultural values, and social norms) play a central role in how individuals experience and manifest distress (Ballenger et al., 2001; Kirmayer, Robbins, Dworkind, & Yaffe, 1993). Although psychological suffering, on an abstract level, is common to all humans, the more concrete ways of naming, experiencing, explaining, manifesting, or healing mental health problems can vary greatly across different contexts and populations. These sociocultural and methodological issues need to be properly addressed in order to validly assess mental health in both international and multicultural settings (van de Vijver & Leung, 2011). Understanding context-related aspects of well-being is also crucial for tailoring and providing effective care for people in culturally diverse societies.

This thesis focuses on depressive experience, the most prevalent mental health problem on a global scale (Bromet et al., 2011). More specifically, it focuses on how older Somali origin migrants¹ in Finland manifest depressive symptoms and how they explain why people suffer from mental health problems. Information about factors associated with older migrants' and refugees' mental health is needed, as these individuals can be especially vulnerable to depression and other mental health problems that increase their need for services (Abu-Bader, Tirmazi, & Ross-Sherif, 2011; Porter & Haslam, 2005; Silveira & Ebrahim, 1998).

In addition, this thesis examines the validity of two commonly used mental health questionnaires measuring depression, anxiety, and somatization among Somali origin adults, and evaluates whether these questionnaires provide reliable insights into mental health among Finnish Somalis. The research draws partly on comparisons of older Somali origin migrants with matched-pair Finnish-born individuals (Article I) and of adult Somali, Russian, and Kurdish origin migrants (Article III). On a more general level, this thesis seeks to raise awareness of diversity in mental health phenomena, and to provide better understanding of

¹ The generic term 'Somali origin migrant' is used to refer to those native Somali speakers who were born in Somalia and who have later moved to Finland. Many have come to Finland as refugees, and some through family reunification or because of family ties.

mood disorders for mental health professionals and researchers working with migrant populations.

2 IMMIGRATION IN FINLAND

Immigration in Finland has increased in recent years, but compared to other European countries the number of foreign-born residents is still very low; at the end of 2015 they totaled 286,800, or 5 per cent of the total population (Statistics Finland^a, n.d.). In 2016, the four largest foreign-language groups were speakers of Russian (approximately 75,000 individuals), Estonian (49,000 individuals), Arabic (21,000 individuals), and Somali (19,000 individuals; Statistics Finland^b, n.d.). This makes Somalis the biggest African origin group with a predominantly refugee background in Finland.

2.1 Somali diaspora

“Here you have a full stomach, but you are jobless, lonely,
tired, and restless and have new illnesses”
67-year-old Somali man

“I want to go back to a place where I'm not called a refugee,
where I know the language and I'm respected”
55-year-old Somali woman²

Somalia is an East African country located in the Horn of Africa, near the Arabian Peninsula with which it has a long history of commercial, social, and cultural connections (Lewis, 2008). Traditionally most Somalis have been nomadic herders, while some have lived on farming, fishing, or commerce. Compared to many other African nations Somalis are a relatively homogenous group, as they share a common language (Somali), a notion of common shared descent, and religion. Most Somalis practice the Sunni Shafi'ite denomination of Islam (Abdullahi, 2001), although in recent decades the Salafi branch, a more rigid interpretation of Islam, has gained prominence in Somalia and in Somali

² Somali participants in Articles I and II.

communities in the diaspora (Cavallera et al., 2016; Marchal, 2009; Berns McGown, 1999, pp. 30–42). Knowing one’s genealogy (ancestors and clan history) has traditionally been very important for Somalis (Luling, 2006). In Somalia, social organization tends to be based on a patrilineal clan system, and the role of the extended family is highly important for survival and providing individuals with support and safety (Cavallera et al., 2016). Generally, polygamous relationships are accepted according to Islamic orthodoxy (Lewis, 2008). The Somali language has a strong oral tradition, and written Somali in the Latin alphabet was adopted only in 1972 (Abdullahi, 2001). Many older Somalis, especially women, have not attended school and are illiterate.

In the late 19th century, the area inhabited by Somalis was divided into four foreign-ruled regions: British, Italian, French, and Ethiopian territories³ (Abdullahi, 2001; Lewis, 2008). In 1960, Somalia obtained independence and struggled to form a coherent state. After the collapse of Siad Barre’s military regime in 1991, the civil war escalated and severely impaired the country. More than 20 years later Somalia, and particularly its unstable central and southern regions, is still faced with armed conflict, terrorism, famine, poverty, and poor infrastructure, causing many to search for safety in other regions within and outside the country. According to estimates, the Somali diaspora amounts to 1.5–2 million individuals worldwide, and Somalis are one of the biggest refugee groups both globally and in Europe (Hammond et al., 2011; Somalis in Helsinki, 2013).

Most Somalis have come to Finland as refugees, but the number of native Somali speakers also has increased due to family reunifications and children born to Somali speaking families in Finland (Somalis in Helsinki, 2013). As of 2015 approximately one-third of Finnish Somalis were born in Finland to Somali parents (Statistics Finland^a, n.d.) and therefore the majority of Finnish Somalis are young; in 2015, more than 35% were aged under 15 years old. Many Somali origin migrants in Finland have reported experiencing traumatic events, such as war and torture, prior to migration (Castaneda, Rask, Koponen, Mölsä, & Koskinen, 2012). Finnish Somalis also commonly encounter various post-migration hardships and difficulties, such as racism, discrimination, and low rates of employment (Eronen et al., 2014; Jasinskaja-Lahti, Liebkind, & Perhoniemi, 2006).

³ Somalis also inhabited parts of Kenya which was under British jurisdiction in the 19th century. Ethiopia was known as Abyssinia at the time.

Studies among Finnish Somalis have increased in the 21st century and Somalis are the most studied migrant origin population in Finland. However, many studies concerning Somalis in Finland are ethnographies or other qualitative studies (e.g., Hassinen-Ali-Azzani, 2002; Dhalmann, 2011; Linderborg, 2012; Tiilikainen, 2003) whereas psychological and population-based comparative research is less common. Several studies have focused on young Finnish Somalis (e.g., Alitolppa-Niitamo, 2004; Hautaniemi, 2004; Isotalo, 2015) and older Somalis have been largely ignored in research (Mölsä & Tiilikainen, 2008), with a few exceptions⁴ (Linderborg, 2012). This dissertation study focuses on mental health phenomena among older Somali origin migrants (over 50 years old) as well as Somali origin adults between 18 and 64 years using population-based data. Although 50-year-olds are not considered old in Finland, they are in Somalia, where the average life expectancy is approximately 50 years (World Bank, 2013). Previous research has revealed that aging migrants can be at risk for mental health problems due to reduced possibilities for participation in society, e.g., through work, and they may find acculturation (e.g., learning a new language) harder than younger individuals. Somatic ill-health and reduced physical and cognitive capacity associated with old age may pose further restraints on older individuals' mental well-being. For example, in the UK, physical and cognitive impairment in old age and low social support were identified as predisposing factors to depression among ethnic minority individuals (Shah, 2009). In Norway, older African immigrants have reported that poor health and language skills negatively impacted their active social roles (Gele & Harsløf, 2012). Separation from family members, poor social support, loneliness, and changing social roles have been identified as important factors causing distress among aging refugees, including older Somali men in the UK (Silveira & Allebeck, 2001) and older Somalis in Finland (Mölsä, Hjelde, & Tiilikainen, 2010).

⁴ At the time of writing, Mulki Mölsä's dissertation study focusing on mental health among older Somali origin migrants in Finland is also in preparation.

2.1.1 Help-seeking behaviors in Somali communities

“As soon as I came, I had pain in my back and everywhere.
They couldn’t find what’s wrong”
75-year-old Somali woman⁵

In Finland, Somali origin migrants value Finnish health care in general, but they consider the mental health services inappropriate (Mölsä et al., 2010) and feel that health care professionals often lack understanding of their situation and needs, partly due to cultural differences in understanding illnesses (Somalis in Helsinki, 2013). In Sweden, Somali origin migrants have reported dissatisfaction and even mistrust towards psychiatric professionals (Wedel, 2012). A Finnish report on the well-being of foreign-born individuals also revealed that migrants of Middle Eastern and African origin reported experiences of discrimination in Finnish health care services more often than other migrant origin groups (Castaneda et al., 2015). Due to the dissatisfaction with Finnish mental health services, some Finnish Somalis prefer to travel and seek help for mental health problems in Somalia (Tiilikainen & Koehn, 2011), and some Somali origin migrants suffering from mental health problems have been forcibly returned to Somalia by their families in order to get treatment (Tiilikainen, 2011). A study among older Finnish Somalis (the same participants as in Articles I and II of this dissertation) showed that older Somalis seldom used mental health services in Finland. They preferred traditional care, such as religious healing, for mental health problems even though they were entitled to cost-free universal health care like all legal residents of Finland (Mölsä, Tiilikainen, & Punamäki, 2017). Equally, empirical research on Somali populations in the USA, Sweden, and New Zealand has revealed that the mismatch between Somali and Western⁶ psychiatric ways of perceiving mental health is associated with Somali migrants’ reluctance to use the available psychiatric services in their new home countries (Carroll, 2004; Johnsdotter, Ingvarsdotter, Östman, & Carlbom, 2011; Ryan, 2007).

⁵ Somali participant in Articles I and II.

⁶ The use of the word ‘Western’ and the definition and division of the world into ‘Western’ and ‘non-Western’ countries or cultures is problematic because of the enormous cultural, linguistic, and ethnic variation within these regions and the varying criteria used in the definitions. In this thesis, ‘Western’ is used to refer to the United States of America and Canada, Australia, New Zealand, and countries listed by the United Nations (2012) as belonging to Western and Northern Europe.

Besides differing health views, the low usage of mental health services among Somali origin migrants can also be indicative of their unfamiliarity with psychiatric health care services. Prior to the civil war, psychiatric facilities existed in only three cities in Somalia (Berbera, Hargeisa, and Mogadishu; Omar, 1986), and since then the availability and quality of mental health services has not been able to meet the needs of those affected by psychiatric problems in the country (Rivelli, 2010). Instead of mental health care services, support for psychiatric problems among Somalis has focused on traditional healing methods, such as religious healing practices and spirit possession rituals (Cavallera et al., 2016; Johnsdotter et al. 2011; Mölsä, et al., 2010). In Somalia, the mentally ill have also been chained and confined because of a lack of proper health-care resources (Rivelli, 2010). Due to cultural and religious factors associated with Somali conceptions of mental health and well-being, social and mental health professionals have reported challenges in working with Somali origin refugees and migrants (Cavallera et al., 2016; Duale & Alvarez, 2011; Scuglik, Alarcon, Lapeyre, Williams, & Logan, 2007). Information that helps mental health professionals understand their Somali origin patients' views on mental health and needs is, therefore, highly needed.

2.2 General and transcultural psychiatric services in Finland

Since the 1970s, psychiatric services in Finland have focused on reducing the volume of inpatient hospital care with the aim of improving outpatient psychiatric services (Parpola, 2013, pp. 196–200). Whereas in the 1970s there were approximately 20,000 psychiatric hospital beds in Finland, by the end of the 1990s their number had dropped to less than 5,000. Nevertheless, with no better governmental resources to improve outpatient care, NGOs such as the Finnish Association for Mental Health have been forced to take charge of some psychiatric services (Parpola, 2013, pp. 237–238). For non-urgent conditions, the treatment pathway to secondary, specialized psychiatric health-care services in Finland is through primary public health care, occupational health, or private health care where a medical doctor makes a referral to psychiatric health-care services. Third sector actors, such as the SOS crisis center of the Finnish Association for Mental Health, also provide crisis services without referrals.

In Finland, migrants and refugees are entitled and expected to use the same cost-free public health care that is offered to all legal residents, whereas

transcultural psychiatric services are relatively scarce. Foreign origin individuals are also often assessed with the same psychiatric and psychological instruments as native speakers of Finnish and Swedish, the two official languages of Finland. However, migrant origin groups in Finland use the public mental health-care services on offer less frequently than the general population, even though migrants and refugees often report high levels of traumatic experiences and psychiatric distress (Castaneda et al., 2012). Besides sociocultural factors such as cultural differences in preferred treatment methods, language problems, and lack of knowledge regarding services on offer, migrant origin individuals' lower usage of mental health-care services is also affected by barriers at the health-care system level. For example, Mölsä et al. (2017) showed that, compared to Finnish individuals, older Somali origin migrants had significantly lower access to medical doctors at public health-care centers and in the private sector, and lower access to occupational health-care services than Finns. Instead, they used nursing services at public health-care centers more than Finns. Since need for patient referral to secondary, specialized mental health care is evaluated by medical doctors, Somali origin migrants' reduced access to these professionals at local health-care centers, occupational health care and in private health care is one of the barriers for their mental health treatment in Finland.

According to a report about migrants' mental health needs and access to mental health-care services in Finland in the early 2000s, the Finnish public health-care system did not account well for the demands of migrant and refugee origin residents, and Finnish health-care professionals lacked experience and knowledge of how to work with migrant origin patients (Rauta, 2005). There were also regional differences in the availability of mental health services that targeted migrants and refugees. This report recommended that transcultural psychiatric services should be provided nationwide, and training about transcultural issues in mental health should be provided in Finnish universities. However, others have argued that special health-care services for migrant origin residents should not be organized in Finland, but the whole service system should be better equipped to meet the differing needs of individuals (Buchert, 2015).

Traditionally, specific mental health services for culturally and linguistically divergent residents have been scarce in Finland, but in recent years new projects and psychiatric services for migrant origin populations have emerged, such as the Transcultural Psychiatric clinic in Helsinki (Helsinki University Hospital, n.d.) and the Serene project for the treatment of traumatized migrants in Turku (Finnish Association for Mental Health, n.d.). However, most of the mental

health-care services for migrants and refugees are still centered in major Finnish cities, such as Helsinki, Turku, and Tampere. In 2016, the National Institute for Health and Welfare (Terveyden- ja hyvinvoinnin laitos, THL) launched PALOMA, a nationwide project which aims to improve available mental health services for refugee origin populations across Finland (National Institute for Health and Welfare, n.d.).

3 DEPRESSION

Depression is estimated to be the most prevalent psychiatric disorder worldwide (Bromet et al., 2011). It causes a considerable amount of disease burden (Moussavi et al., 2007) which is predicted to increase significantly by the year 2030 (Mathers & Loncar, 2006). In Finland, depression has become a growing public health concern in recent years, with prevalence of major depressive disorder in the general population estimated to be 7.5% (Markkula et al., 2015).

The fifth edition of the Diagnostic and Statistical Manual of Diseases (DSM-5), published by the American Psychiatric Association (2013a), differentiates between several unipolar depressive disorders: disruptive mood dysregulation disorder; major depressive disorder (including major depressive episode); persistent depressive disorder (dysthymia); premenstrual dysphoric disorder; substance-/medication-induced depressive disorder; depressive disorder due to another medical condition; other specified depressive disorder; and unspecified depressive disorder. Of these, the most prevalent disorder is major depressive disorder (MDD; Bromet et al., 2011).

According to DSM-5, criteria for the diagnosis of major depressive disorder include the following symptoms: depressed mood or a loss of interest or pleasure in daily activities for more than two weeks; mood represents a change from the person's baseline; impaired functioning (social, occupational, educational); and specific symptoms (at least 5 out of 9) present nearly every day. The specific symptoms of major depressive disorder are presented in Table 1.

The 10th version of the International Classification of Diseases and Related Health Problems, published by the World Health Organization (ICD-10 Version:2016; WHO, 2016), includes mild, moderate, and severe unipolar depressive episodes, depressive episodes with or without psychotic symptoms, other depressive episodes, and unspecified depressive episodes as well as recurrent depressive disorders (mild, moderate, and severe; with or without psychotic symptoms; other recurrent depressive disorder and unspecified recurrent depressive disorder). The symptoms of depressive episode outlined in ICD-10 include the same symptoms as major depressive disorder in DSM-5 as

well as few other symptoms (reduced self-esteem, reduced confidence, and loss of libido). Depending on the number of symptoms, depressive episode is classified as mild, moderate, or severe (ICD-10 Version:2016; WHO, 2016). The ICD-10 is currently in clinical use in Finland.

Table 1. Specific symptoms of major depressive disorder (MDD; American Psychiatric Association, 2013a).

<ol style="list-style-type: none">1. Depressed mood or irritable most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful)2. Decreased interest or pleasure in most activities, most of each day3. Significant weight change (5%) or change in appetite4. Change in sleep: Insomnia or hypersomnia5. Change in activity: Psychomotor agitation or retardation6. Fatigue or loss of energy7. Guilt/worthlessness: Feelings of worthlessness or excessive or inappropriate guilt8. Concentration: Diminished ability to think or concentrate, or more indecisiveness9. Suicidality: Thoughts of death or suicide, or has suicide plan
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Acknowledging potential sociocultural variation in the manifestation of depressive symptoms is crucial, as no biomedical tests exist for the diagnosis of depression and the diagnosis is based on criteria outlined in, for example, the DSM-5, as presented above. Nevertheless, disease categories, including depression, can be seen as cultural constructs that stem from a worldview specific to a certain time and place (Lewis-Fernández & Kleinman, 1994). In the case of DSM, criteria that are still used for mood disorders are greatly influenced by Emil Kraepelin’s work at the end of the 19th century, which was largely based on clinical observations of typical patients and less on theoretical endeavors (Mondimore, 2005). More recent empirical research has questioned the validity of the diagnostic criteria for depression. For example, during the revision process

of the latest version of the DSM, the reliability of the diagnosis of major depressive disorder was considered “questionable”, with only a 15% likelihood that clinicians would agree on the diagnosis more frequently than by chance alone (Regier et al., 2013, p. 65).

3.1 Cultural psychology framework for studying depression

Culture can be seen as “the embodiment of a worldview through learned and transmitted beliefs, values, and practices” that are affected by the historical, economic, ecological, and political factors in a given context (American Psychological Association, 2002, pp. 8–9). Accordingly, culture can be defined as a social construction that implies shared meanings within a specific group. For example, individuals may differ in their personal values but at the same time share a certain degree of common understanding, or an intersubjective perception, of what is considered normative, acceptable, or valuable within the wider community (Chiu, Gelfand, Yamagishi, Shteynberg, & Wan, 2010).

Studies in (cross-)cultural psychology have revealed that concrete psychological phenomena, such as specific mental health symptoms, can vary according to whether they are found in all, most, or only some of the studied populations, and according to how commonly and in which contexts the phenomena are likely to manifest (Norenzayan & Heine, 2005). For example, some mental health symptoms can be prominent in some, but not all, groups; they can be more common in some groups than in others; or they can be differently associated with other variables (e.g., with other symptoms) depending on the group. In a cultural psychology framework, attention is directed to the interconnectedness of our physical and social worlds and the social character of humans (DiMaggio & Markus, 2010). Culture, mind, and brain are seen as inseparable parts of a larger whole that cannot be understood without understanding its parts (Ryder, Ban, & Chentsova-Dutton, 2011). Psychological phenomena are located on a spectrum of universality where both genes and environment are full contributors (Sasaki & Kim, 2017). Illustrative examples of this joint influence come from studies in cultural neuroscience which have revealed, for example, that the same genetic variant can lead to opposite ways of emotional expression in different cultural contexts. Kim et al. (2011) found that in the USA, where open *emotional expression* is encouraged, a specific genotype was

associated with a higher likelihood of its carriers to express their emotions openly. However, in Korea, where *emotional suppression* is encouraged, the carriers of the same genotype were more likely to suppress their emotions. In both contexts, the same genotype was therefore associated with a higher likelihood to express emotions in a culturally appropriate way. A study comparing American and Japanese individuals found that experiencing negative emotions was associated with higher inflammatory activity (pro-inflammatory biomarkers) among Americans, but not among Japanese (Miyamoto et al., 2013). The researchers explained this finding via cultural and contextual differences in conceiving negative emotions; whereas in the USA negative emotions are commonly seen as problematic, in Japan they are seen as normal and acceptable emotions. These studies show how the roles of genetic or other biological factors cannot fully be understood without considering sociocultural factors and their impacts on well-being. Similarly, besides depression genes, biomarkers, or other physiological components of depression, the impact of social and cultural factors needs to be acknowledged in order to understand depressive phenomena (Lohoff, 2010; Sullivan, Neale, & Kendler, 2000).

This dissertation approached mental health and depression from a culturally-sensitive perspective in order to better understand depressive phenomena among Finnish Somalis. It described and examined the influence of sociocultural factors (i.e., gender, age, and perceptions of mental health problems) on depressive symptom manifestation, as well as the potential methodological challenges in measuring depression among migrant origin populations.

3.2 Prevalence of depression

Depression (or *melancholia*⁷) has not always been recognized in all populations. In the 1950s, the World Health Organization (WHO) published a monograph where depression was estimated to be rare or non-existent in Africa (Carothers, 1953). Symptoms such as feelings of sadness, misery, and self-reproach were considered uncommon, whereas hypochondriac and bodily complaints prevailed. Due to this variation in symptom profiles, it was argued that “such patients cannot be included under the heading of depressives” (Carothers, 1953, p. 146). The lack of sadness and self-reproach, and thereby “the development of

⁷ In clinical terminology, *melancholia* is often used to describe severe clinical depression.

depression in the standard form” (p. 148), was linked to the supposed lack of personal responsibility and to the specific characteristics of ‘the African mind’: “Man in Africa is buffered from reality by a cultural machinery that can cope with most exigencies. [He] can spend most of his life in dreams [...] (p. 122)”.

Since the 1950s, the occurrence and impact of depression has been acknowledged globally (Bromet et al., 2011; Moussavi et al., 2007). Nevertheless, several studies have reported national variation in depression prevalence estimations. A comparative study on late-life depression in 13 sites in nine low and middle-income countries revealed that one-month prevalence rates ranged from 0.3% in rural China to 13.8% in Dominican Republic (Guerra et al., 2016). Lifetime prevalence estimations of major depressive episode across 10 countries worldwide varied between 3% in Japan and 16.9% in the USA (Andrade et al., 2003). A study comparing lifetime prevalence of major depressive disorder across 10 sites found the lowest estimate, 1.5%, in Taiwan and the highest, 19%, in Lebanon (Weissman et al., 1996). A study of 14 countries reported prevalence estimations for major depressive disorder to range between 2.4% in China and 27.3% in Chile (Simon, VonKorff, Piccinelli, Fullerton, & Ormel, 1999). Potential explanations for the low rates of depression in East Asian countries, such as China, Taiwan, and Japan, are discussed in Chapter 3.1.1.

There are no representative population studies available on the prevalence of depression in Somalia, but it is generally estimated that the frequency of different mental health disorders in Somalia is extremely high due to the impact of civil war, traumatic experiences, poverty, unemployment, multiple losses, and many other hardships (Rivelli, 2010). There is also some evidence that the use of *khat*, a narcotic leaf consumed in the Horn of Africa, is associated with high levels of mental health problems among Somalis, and in particular with psychotic disorders (Kroll, Yusuf, & Fujiwara, 2011; Omar et al., 2015) although causality has not been established (Warfa et al., 2007). Concerning Somalis in exile, the prevalence estimations for depression are usually high. A study among a community and primary care sample of 143 Somalis residing in the UK indicated a 27% prevalence rate of current major depression (Bhui et al., 2006). In the Netherlands, depression was estimated to be as high as 60% among 62 Somali asylum seekers and 17% among a group of 25 Somali refugees (Gerritsen et al., 2006). However, in this study, the prevalence rate for PTSD was estimated at only 4% among Somali refugees, whereas among Iranian asylum seekers the prevalence rate for PTSD was 43%. Similarly, a British study of 72 older Somalis estimated the prevalence of depression to be 25% (Silveira & Ebrahim, 1998).

Although high, this was the same prevalence rate as among older white British individuals and considerably lower than the 77% depression prevalence rate among Bengalis. Among Somali, Russian, and Kurdish origin migrants in Finland (the same participants as in Article III of this dissertation), the prevalence rates of depression and anxiety among Somalis were lower than those among Russian and Kurdish origin migrants and similar to the prevalence rates of depression and anxiety in the general Finnish population (Rask et al., 2016). Taken together, previous results on the distress levels of Somali origin migrants and refugees are somewhat conflicting, and estimations vary according to specific diagnoses and study populations.

Besides traumatic and stressful pre-migration experiences, the generally high rates of depression among Somali origin refugees can be indicative of the post-migration hardships that many encounter, including discrimination, separation from family, and social isolation (Castaneda et al., 2012; Jasinskaja-Lahti et al., 2006; Mölsä et al., 2014; Silveira & Allebeck, 2001). The commonly used clinical and convenience samples may also overestimate the prevalence of mental health problems. In addition, the conflicting estimations of mental health problems among Somalis could be partly due to difficulties in assessing mental health in Somali populations. Qualitative ethnographic research has claimed that depression, as understood within the Western psychiatric framework, is not commonly recognized among Somali origin migrants in Australia (Tilbury, 2007), in the USA (Carroll, 2004), or in Finland (Mölsä et al., 2010) thus suggesting a mismatch between Western-defined disease categories and the Somali migrants' lived experiences. Different ways of manifesting depression across sociocultural groups (Draguns & Tanaka-Matsumi, 2003; Guerra et al., 2016; Weissman et al., 1996) may therefore explain some of the observed variation in prevalence estimations. Before summarizing the literature on depressive symptom manifestation in different populations, this chapter turns to literature on emotional expression and affect.

3.2.1 Cultural variation in emotional expression and affect

The identification of mood disorders, such as depression, is affected by cultural norms, beliefs, and linguistic categories, which shape the ways in which emotions and mood states emerge and how they can be expressed and shared in various situations and social interactions (Kirmayer, 2001; Wellenkamp, 1995). There is

vast anthropological and cross-cultural evidence that emotions have different meanings in different sociocultural contexts (Elfenbein & Ambady, 2002; Kirmayer, 1989; Wellenkamp, 1995). In some contexts, expressing feelings of sadness, low mood, and melancholy are somewhat appreciated, and in others they are devalued and corrected. For instance, in ancient Persia sadness and melancholy were interpreted as signs of profound thought and yearning for a deeper understanding of human existence (Good, DelVecchio Good, & Moradi, 1985), whereas traditional Chinese culture regarded emotional expression of sorrow as shameful weakness (Kleinman & Kleinman, 1985).

Research on social norms and cultural values regulating emotional expression and experience could help to explain the low prevalence rates for depression found in East Asia (Andrade et al., 2003; Guerra et al., 2016; Simon et al., 1999; Weissman et al., 1996). For example, instead of openly expressing one's feelings, East Asian individuals are commonly expected to inhibit expression of negative emotions, such as anger or distress, that interfere with social harmony (e.g., Markus & Kitayama, 1991). Low arousal mood states, such as feelings of sadness or calmness, are also more valued in Eastern than North American or Western European contexts, where high arousal states, such as joy and excitement, are considered optimal mood states (Lim, 2016). As a result, some have questioned the assumption that happiness and a positive self-image are equally valued in different populations (Lutz, 1985). Instead, it has been argued that striving for these positive emotions and feelings about oneself is typical of Western contexts, and should not be taken as synonymous with well-being in all populations.

Similarly, there is some empirical evidence that positive feelings may not be as important in promoting mental health in all populations. For example, Leu et al. (2011) found that increases in positive feelings were associated with decreases in depression among European Americans, but the same relationship between positive feelings and depression was not found among Asian origin individuals. The authors explained these findings through the common notion in Asian contexts that positive emotions are not straightforwardly 'good', and that pursuit of positive emotions alone is not seen as realistic. Instead, a balance between negative and positive emotions is considered more important and feasible. It could be, therefore, that low and depressive mood are better tolerated in many contexts in Asia, where the discrepancy between depressive mood and ideal affect or mood states is less pronounced than in Western contexts. Furthermore, traditional East Asian cultural values do not encourage individuals to focus on their inner subjective emotional experience (Dere et al., 2013), which could affect

the reporting of psychological distress. Accordingly, a population study comparing Korean and American individuals found that cross-cultural differences and low rates of depression in East Asia were at least partially caused by different diagnostic thresholds; Koreans reported fewer of all depressive symptoms than Americans, which lowered their threshold for what was considered clinical depression (Chang et al., 2008).

Somali migrant women in Finland have reported that both strong positive and negative emotions may be dangerous, and disclosures of past traumatic experiences are commonly avoided as remembering events is considered distressing and unhelpful (Tiilikainen, 2013, pp. 156–157). Somali expressions of trauma- and loss-related distress may also diverge from Western individual-centered conceptions. For example, in ethnographic research among Somali refugees in Ethiopia, Zarowsky (2004) argued that distress was not typically manifested through pathological psychological states resembling PTSD or other mental health problems such as depression. Instead, their suffering was embodied in a sociopolitical context of war, displacement, and injustice. In this context, the Somali refugees' traumatic experiences provoked, above all, collective anger that bound individuals together and promoted collective action and survival. In contrast, individual experiences of sadness, for example, were less salient forms of distress. Social reality was, therefore, central in understanding Somali refugees' emotional experiences and distress.

As the research examples summarized above show cultural variation in the expression and experience of sad and melancholic feelings, it can be assumed that cultural traditions and cognitions are also embedded in individuals' experience and description of depressive symptoms (Jenkins, 1994).

3.2.2 Cultural variation in depressive symptom manifestation

Comparative cross-cultural psychological studies have revealed diversity in the ways depressive symptoms are manifested. In many industrialized countries in the Western world, and more specifically in the USA, Canada, and Western Europe, salient depressive symptoms include verbalizing depressive affect and feelings of worthlessness, self-blame, and guilt (Draguns & Tanaka-Matsumi, 2003). According to Freud (1917), self-accusations can be regarded as core symptoms of depression as they qualitatively distinguish depression from sadness

and sorrow. Negative ideation concerning oneself (i.e., negative self-evaluation) is also an important notion in Aaron Beck's cognitive model of depression (Beck, 2008). Accordingly, suicidal thoughts and morbidly low self-esteem continue to be considered hallmarks of depression in the Western psychiatric framework, because they are claimed to differentiate depression from normal grief (Wakefield & First, 2012).

Researchers in cultural psychology and psychiatry have argued that these self-centered 'psychological' or 'cognitive depressive symptoms' are typical of societies that emphasize personal responsibility, individual rights, and focusing on internal states, that is, 'individualistic cultures', in Northern America and Western Europe (Marsella, 1980). For example, Finland has been categorized as a highly individualistic society (Diener, Gohm, Suh, & Oishi, 2000; Hofstede, 1980) with an emphasis on individual autonomy over social embeddedness (Schwartz, 2006). Because subjective emotional experience is considered important in these contexts, focus on emotional experience and verbal analysis of mood states subsequently become typical symptoms of depression in many groups with a predominantly individualistic orientation (e.g., Draguns & Tanaka-Matsumi, 2003). Empirical research confirms that in many contexts in the 'majority world'⁸, such as East Asian (Ryder et al., 2008), African (Binitie, 1981), Latin American, and Indian populations (Halbreich et al., 2007), and in some Muslim societies (Al-Issa, 2000), these psychological and individual-focused symptoms are less common. Instead, in these populations, that are commonly considered as collectivistic, typical expressions of distress include general discomfort, pain, and lowered mood. For example, in Somali communities, social cohesion and harmony are typically considered highly important (Koshen, 2007). As societies with predominantly collectivistic orientations emphasize social harmony over individuals' rights to express their emotions and thoughts freely, and do not consider inner emotional experience particularly important, indirect expressions of distress through bodily symptoms can be more appropriate, meaningful, and less stigmatizing ways to communicate psychological distress (e.g., Kleinman & Kleinman, 1985).

However, besides a way of *communicating* distress, bodily symptoms can also be a cultural way of truly *experiencing* distress (Ryder & Chentsova-Dutton, 2012). In order to examine these two possibilities, Zhou et al. (2016, p. 3) tested whether "Chinese somatization" could be explained as a way of communicating distress

⁸ The term 'majority world' is used to refer to the regions of Asia, Africa, and Latin America where most of the world's population lives.

in bodily terms, or rather as a way of experiencing distress in a somatic form. They found that while both factors (bodily communication and somatic experience of distress) emerged in their sample of Chinese university students and psychiatric outpatients, Chinese cultural values were directly associated only with somatic experience of distress. Thus, cultural values may shape the actual experience of distress and bring about a cultural script for manifesting symptoms in a particular way. As such, seeing somatic symptoms solely as a communication strategy that individuals apply in order to avoid mental health stigma, or due to their lack of emotional introspection, is likely to be too simplistic.

Although previous studies on the manifestation of specific depressive symptoms among Somali origin migrants are lacking, it is commonly reported that Somalis express psychological distress through somatic complaints (Cavallera et al., 2016; Tiilikainen, 2003, pp. 201–203; Wedel, 2012). Drawing from the above summarized anthropological and cross-cultural research on affective experiences and depressive symptom manifestation, this dissertation aimed to add to this knowledge by examining somatic-affective and cognitive depressive symptom manifestations among older Somali origin migrants and their matched-pair Finnish comparisons.

3.2.3 Sociodemographic variation in depressive symptom manifestation

Besides cultural values and social norms that guide emotional expression, other factors can also explain why somatic presentations of distress seem to be common in some groups, whereas psychological symptoms prevail in others. Poortinga (2015) has called for a more critical analysis of different ethnic and linguistic groups in cross-cultural research, in order to clarify explanatory factors relating to observed differences when studying cultural groups. Such proposed explanatory factors, besides culture include literacy, affluence, and education, for example; factors which are likely to differ across compared groups.

Important sociodemographic factors shaping the manifestation of psychological distress include, at the very least, age and gender. Age is known to be associated with different depressive symptoms among children, adolescents, and older individuals (e.g., Gotlieb & Hammen, 2002). Some depressive symptoms, such as lack of interest, poor appetite, and hopelessness, have been shown to become more salient as individuals age, whereas psychological and affective depressive symptoms, such as low mood and self-centered negative

ideation, become increasingly rare in older individuals (Powers, Thompson, Futterman, & Gallagher-Thompson, 2002). Empirical evidence confirms this among older individuals in Australia (Christensen et al., 1999) and in the USA: dysphoric mood and feelings of worthlessness or guilt were relatively uncommon depressive symptoms, particularly among older African Americans (Gallo, Anthony, & Muthen, 1994; Gallo, Cooper-Patrick, & Lesikar, 1998). Instead, typical depressive symptoms included sleeping problems, fatigue, and feelings of hopelessness.

Research on gender differences in depression is inconclusive, as some studies have found women to exhibit more 'atypical' depressive symptoms, such as excessive fatigue, overeating and oversleeping, than men, as well as more anxiety and somatization symptoms (Angst, Gamma, Sellaro, Zhang, & Merikangas, 2002; Moskvina et al., 2008), while others have not found any gender differences (Middeldorp, Wray, Andrews, Martin, & Boomsma, 2006). A study comparing Latin American, North African, Indian, Hungarian, and Serbian clinicians' reports of their female patients' typical depressive and anxiety symptoms emphasized the salience of somatic depressive symptoms across different settings (Halbreich et al., 2007). Furthermore, there is some evidence that depression in men manifests itself in other 'atypical' ways, such as anger, violence, irritability, substance abuse, and in other risky behaviors as well as in emotional numbness (Olfiffe & Phillips, 2008).

3.2.4 Are there core symptoms of depression?

The remarkable variation in depressive symptom manifestation and the different categories of mood problems in the diagnostic manuals (e.g., DSM-5) raise questions about the core elements of depression. Are there common features of depression in men and women across different populations, ages, and distress levels that would help identify and define depression? While some scholars have argued that the negative ideation concerning self and the world would be central features of depression (e.g., Freud, 1917; Wakefield & First, 2012), cross-cultural researchers have also claimed that, in fact, somatic symptoms could be a more 'universal' aspect of depression, whereas psychological symptoms (i.e., depressive ideas and feelings) could be characteristic of only some populations, namely North Americans and Western Europeans (Kirmayer et al., 1993). There is some empirical evidence confirming that the cross-cultural difference in depressive

psychological symptoms is more significant than the difference in somatic symptoms (Parker, Cheah, & Roy, 2001; Ryder et al., 2008). Therefore, ‘Western psychologization’ could be seen at least as much of a cultural presentation of depression as the more commonly discussed ‘non-Western somatization’ (Ryder & Chentsova-Dutton, 2012). Some scholars have also claimed that both types of depressive patterns are equally common, but they might not be communicated in similar ways. For example, Patel and Stein (2015) argue that, in sub-Saharan Africa, somatic presentations are commonly manifested spontaneously, while psychological symptoms are manifested when specifically requested. Nevertheless, somatic symptoms are not specific to depression, as they are also related to other mental health problems such as anxiety. The co-presentation of anxiety and somatic symptoms is discussed in chapter 3.3.

Besides the dichotomous contrasting of psychological versus somatic depressive symptoms, specific symptoms of depression-like mood problems can vary even within narrow geographical regions. For example, local ways of manifesting depression-like distress among four different populations in the Great Lakes Region in Africa included unique, group-specific symptoms (Ventevogel, Jordans, Reis, & de Jong, 2013). In the Kwajena Payam district in South Sudan, an individual suffering from *nger yec* may talk when he is alone, whereas an individual in the Yei River County in South Sudan suffering from *yeyeesi* may present headaches. In the Democratic Republic of Congo, *amure alluhire* includes symptoms of confusion, and in Burundi, common symptoms of *ibonge* involve excessive thoughts about the past. In Zimbabwe, speakers of Shona have used the term *kufungisia* to describe excessive thinking that resembles depression or anxiety-like phenomena (Patel, Simunyu, & Gwanzura, 1995). Common aspects of these local ways of suffering often involve symptoms of sadness, social isolation, and excessive thinking. Although Somalis do not commonly acknowledge the existence of a depression-like mental disorder in the form presented in the Western psychiatric framework (e.g., Cavallera et al., 2016), they recognize a type of suffering involving thinking too much, excessive worrying (Kokanovic, Dowrick, Butler, Herrman, & Gunn, 2008), and demoralization (Tiilikainen, 2003, pp. 212–215). Nevertheless, some studies question the relevance of sadness and low mood in depression. For example, a study among South Koreans and Americans found that, while depressed mood was the most frequent depressive symptom in the US, concentration difficulty was the most frequent symptom in South Korea (Chang et al., 2008). In Tanzania,

irritability and social withdrawal were more prominent symptoms of depression than low mood (Kaaya, Lee, Mbwambo, Smith-Fawzi, & Leshabari, 2008).

There is also some evidence that delusions of persecution and hallucinations (e.g., hearing the voices of ancestors) are relatively common symptoms of non-psychotic depression in some African populations (Marsella, 1980; Mosotho, Louw, Calitz, & Esterhuy, 2008), whereas these types of symptoms would usually be indicators of severe, psychotic depression in Western contexts. In Algeria, Al-Issa (2000, pp. 108–110) has explained the occurrence of delusional thought in non-psychotic depression with the fact that delusions of persecution are common symptoms of various mental health problems in the Algerian context. This, in turn, could be due to general mistrust of individuals in society, e.g., towards authorities, and may therefore be “an exaggeration of normal tendencies in the population” (p. 109). Societal changes, such as migration to cities, may have also brought about social isolation and insecurity which can add to the tendency to develop suspicious thoughts. Similarly, social norms and notions regarding spirits and ancestors in many African contexts may cause hallucinations to occur relatively frequently, even in milder depression.

In a Western context, specific depressive symptoms may be more salient in milder versus more severe forms of depression, and thus help to identify the severity of depression. For example, a study using a representative community sample in the USA found that the type, rather than number, of depressive symptoms was the best indicator of the severity of depression, when severity was determined by how much functional and psychosocial impairment it caused (Velázquez, Jokela, & Rosenström, 2017). In severe depression (i.e., with high levels of functional and psychosocial impairment), the most common symptoms among Americans were feelings of worthlessness and psychomotor retardation. Nevertheless, another study among depressed individuals in the USA found that sad mood and concentration problems were associated with high levels of functional impairment (Fried & Nesse, 2014). Depressive symptoms therefore present considerable variation even within one society. For example, Fried and Nesse (2015a) revealed that among 3,703 depressed outpatients in the USA, a total of 1,030 unique depressive profiles emerged and that approximately half of the different symptom profiles included only one individual.

The considerable variation in depressive symptoms questions the notion of depression as a clearly defined disease category, identifiable via a few specific symptoms across different contexts. The heterogeneity of depressive states is also reflected in the numerous depression subtypes in diagnostic classification

systems (such as the DSM-5 and ICD-10). Recently, researchers in evolutionary psychiatry defined 12 subtypes of depression from an evolutionary perspective (Rantala et al., 2017). The depression subtypes were described as varying in their primary causes and, subsequently, in what would be the most effective treatment for each subtype. The recognition and identification of biological, social, and cultural factors that shape depressive phenomena can help to make increasingly better and more accurate diagnoses and, ultimately, to provide more suitable and personalized treatments for individuals suffering from mood problems.

3.3 Comorbidity of depression, anxiety, and somatization

As described previously, somatic symptoms are central features of mood disorders across different populations. In addition to the fact that depressive and somatic symptoms commonly co-occur, they also greatly overlap with symptoms of anxiety. Anxiety disorders can be defined as disorders that share features of excessive fear and anxiety and that are related also to behavioral disturbances (American Psychiatric Association, 2013a). Somatization, in turn, can be defined as the experience and communication of somatic symptoms in the absence of a medical condition, and the tendency to seek medical help for the symptoms (Lipowski, 1988). However, in the latest version of the Diagnostic and Statistical Manual of Diseases (DSM-5; American Psychiatric Association, 2013a), somatization disorder was removed and replaced by somatic symptom disorder. In somatic symptom disorder, a physical cause for the symptoms may or may not be present. Instead, an individual's excessive or disproportionate thoughts and feelings regarding the somatic symptoms are required criteria for the diagnosis. In the ICD-10 (Version:2016; WHO, 2016), somatization disorder is classified under the section of somatoform disorders and the diagnosis requires that the experienced physical symptoms cannot be explained by physical causes.

Anxiety and somatization (when defined as the somatic manifestation of distress) are considered common mental health disorders among refugees, although prevalence estimations vary considerably. For example, a meta-analysis of anxiety among diverse refugee populations revealed prevalence estimations ranging from 20% to 88% (Bogic et al., 2015). Although comparable data about somatization are lacking (partly due to the challenges in defining somatization),

it is considered common among refugees and especially among traumatized and tortured individuals (Rohlof, Knipscheer, & Kleber, 2014).

The comorbidity of depression, anxiety, and somatization is frequent in both migrant (Saraga, Gholam-Rezaee, & Preisig, 2013) and general populations in North America and Europe (Kessler et al., 2003). For example, in the Netherlands, the comorbidity rates between depression and anxiety in a large psychiatric population ranged between 65% and 75% (Lamers et al., 2011). These high comorbidity rates may be partly due to overlap between depressive and anxiety symptoms. For example, in DSM-5, symptoms that are indicative of both major depressive disorder (MDD) and generalized anxiety disorder (GAD) include irritable mood (depressed or irritable mood in depression), fatigue, sleeping difficulties, concentration difficulties, and restlessness or psychomotor agitation (American Psychiatric Association, 2013a). In addition, excessive worrying, which is characteristic of anxiety, closely resembles rumination, or repetitively thinking about a problem, which is considered common in depression.

Some researchers have suggested that, because of the overlap in depressive and anxiety symptoms, separating these disorders into clear-cut categories and identifying specific symptoms as indicators of ‘depression’ or ‘anxiety’ can be artificial and even misleading (Chia & Graves, 2016; Craske et al., 2009; Lee, Kaaya, Mbwambo, Smith-Fawzi, & Leshabari, 2008). In an African context, Patel and Stein (2015, p. 50) argue that “any understanding of depression and anxiety in sub-Saharan Africa—indeed, in all developing countries, and in all probability in developed countries too—must highlight the fact that depression and anxiety more commonly occur together than separately”. In line with this, a study of 600 Somali refugees attending a mental health clinic in the USA found that symptoms of depression and PTSD (classified as a form of anxiety disorder or stress-related disorder⁹) were highly intertwined; the majority of the Somali women presented a form of comorbid depression and PTSD instead of purely depressive or PTSD symptoms (Kroll et al., 2011). The ICD-10 (ICD-10 Version:2016; WHO, 2016), includes a diagnosis of *mixed anxiety and depressive disorder* that should be used when symptoms of anxiety and depression are both present, but neither is clearly predominant.

⁹ DSM-5 re-classified PTSD as a trauma- and stressor-related disorder, not as an anxiety disorder, although its close relationship to anxiety disorders is recognized (American Psychiatric Association, 2013a).

Besides the overlap of anxiety and depressive symptoms, anxiety also resembles somatization (experiencing distress in bodily symptoms), in that anxious feelings and thoughts are often experienced in somatic sensations; for example, in feelings of dizziness, trembling, and one's heart pounding. The difficulty in distinguishing between somatic and anxiety symptoms is also reflected in some psychiatric scales that are designed to measure somatization and anxiety. For example, symptoms of "nervousness and shakiness inside" and "headaches" are included in the anxiety scale of the Hopkins Symptom Checklist questionnaire (HSCL; Derogatis, Lipman, Rickels, Ulenhuth, & Covi, 1974). However, the same symptoms are included as somatization symptoms in the SCL-90 scale (Derogatis, Lipman, & Covi, 1973). Furthermore, seven symptoms in the SCL-90-Revisited scale (Derogatis, 1992) are general symptoms; that is, they are not specific to any disorder. These include poor appetite, trouble falling asleep, waking early in the morning, disturbed sleep, overeating, thoughts of death, and feelings of guilt.

Somatic presentations of distress, such as soreness of muscles and dizziness, can also be closely related to manifestation of anxiety because of individuals' own interpretations of their somatic sensations (Hinton, 2012; Kirmayer & Sartorius, 2007). For example, among Cambodian refugees, cold hands and feet may be interpreted as indicators of stroke, which further exacerbates anxious and fearful cognitions and thus intertwines these somatic symptoms with those of anxiety (Hinton, Um, & Ba, 2001). Among several Latino populations, shaking of the arms and legs and chest tightness can bring about anxiety, as these bodily sensations can be interpreted as symptoms of *ataque de nervios*, a local way of experiencing relatively severe levels of distress (Hinton, Lewis-Fernández, & Pollack, 2009). In contrast, in populations where these types of bodily sensations are not considered indicators of severe conditions, they are less likely to be associated with anxious feelings. The cognitive interpretations of somatic sensations are thus culturally constructed knowledge about symptoms, or "symptom schemas", that assign meanings to the experienced physical sensations (Kirmayer & Sartorius, 2007, p. 834). Accordingly, the ways in which symptoms of depression, anxiety, and somatization co-occur and overlap is likely to vary across different groups because of sociocultural differences in how mental health conceptions are understood, and in the ways symptoms are interpreted and experienced.

In this dissertation, the connections between depressive, anxiety, and somatization symptoms were analyzed in a representative population-based sample of Somali, Russian and Kurdish origin migrants in Finland.

3.4 Historical changes in psychiatric diagnoses: from neuroses and stress to depression

Understanding of depression or depression-like phenomena in different contexts would not be complete without considering the societal and political influences that shape disease categories and the prevalence rates of specific diagnoses throughout history. An example of sociopolitical influences on mental illness is the way in which non-psychotic mood and anxiety problems have been labelled and diagnosed within psychiatry since the 19th century. For example, *neurasthenia*, a condition that typically manifests itself in symptoms of fatigue, concentration problems, and different bodily symptoms, such as headaches and dizziness, was so commonly encountered in the USA during the late 19th and early 20th centuries that it was called “the American disease” (Wheeler, 1909, p. 5). However, during the first half of the 20th century, diagnoses of neurasthenia decreased radically in the USA, and similar types of manifestations of psychological distress became to be known as *psychoneuroses* or stress (Horwitz, 2010). They, in turn, were followed by anxiety, which became the most commonly diagnosed mental health disorder in the USA in around the 1950s. In 1980, neurasthenia was removed altogether from the 3rd edition of the DSM (DSM-III; American Psychiatric Association, 1980) and in the next decade it was classified as a ‘culture-bound syndrome’, typically associated with East Asian cultures (DSM-IV; American Psychiatric Association, 1994)¹⁰.

According to sociologists and historians of psychiatry (Horwitz, 2010; Shorter, 2013), diagnoses of depression were rare in the USA until the 1970s and mainly covered severe forms of depression. The increase in the rates of depression diagnoses occurred around the same time as new antidepressant medication became available in the 1970s. According to Horwitz (2010), scientific ambitions within the field of psychiatry led to an interest in a clearly defined disease category, *depression*, that was potentially more beneficial in finding causal mechanisms and specific treatments for mental health suffering than the

¹⁰ A diagnosis of neurasthenia is included in the ICD-10 in the section of neurotic, stress-related and somatoform disorders (Version:2016; WHO, 2016)

wider stress categories of neurasthenia, psychoneuroses, or anxiety. The rising prevalence rates of depression in the US during the 20th century thus coincide with the emergence of biological psychiatry.

Similar changes in labeling mental health problems took place later in China. Neurasthenia, *shenjing shuairuo*, has sometimes been called “the Chinese version of major depression” (Eshun & Caldwell-Colbert, 2009, p. 182) and diagnoses of neurasthenia were common, especially in rural China, prior to 1980s. However, in later years neurasthenia diagnoses have become increasingly rare whereas diagnoses of depression have increased, particularly in urban China (Lee, 1999). According to Lee (1999, p. 349), the “dramatic disappearance” of neurasthenia in China is not solely due to advances in empirical understanding of mood problems, but also to the Westernization of Chinese psychiatrists and their development of the view that depression can be treated with antidepressant drugs, whereas such specific medication does not exist for neurasthenia.

Variation in how psychological distress is conceived, or in the prevalence of specific mental health diagnoses, does not only vary across sociocultural groups. Symptom patterns and specific diagnoses also change over time in relation to societal, political, and scientific circumstances. For example, symptoms such as fatigue, sleeping difficulties, concentration difficulties, restlessness, or bodily pains can be primarily interpreted as indicators of either depression or anxiety according to the dominant psychiatric view, and similar conditions may therefore receive different names at different times. Prevailing disease categories and disease labels can also shape what is perceived as adequate means of communicating distress (Shorter, 1992). This idea is discussed further in chapter 4.2.1.

4 “PEELING THE ONION OF CULTURE”

Although research has revealed cross-cultural differences in the manifestation of mental health problems, empirical evidence is still relatively scarce regarding the underlying reasons for this variation between ethnic and linguistic groups (Ryder et al., 2008). It has been proposed that, instead of comparing different groups in relation to a specific outcome (e.g., depressive and anxiety symptoms), more attention should be paid to “peeling the onion of culture” (Poortinga, van de Vijver, Joe, & van de Koppel, 1987, p. 22); that is, analyzing the mechanisms that lead to observed differences (Matsumoto & Yoo, 2006; Ryder, Ban, & Chentsova-Dutton, 2011). In this thesis, two potential factors were examined in relation to depressive symptom manifestation: individual difficulties in emotional processing (alexithymia) and perceived causes of mental health problems (causal attributions of mental health problems).

4.1 Difficulties in emotional processing (alexithymia)

One potential reason for the manifestation of distress through psychological (or cognitive) versus somatic depressive symptoms could be individual differences in emotional processing (Taylor, 2000; Waller & Scheidt, 2006). The Greek term *alexithymia*, lit. ‘no words for feelings’, has its roots in psychoanalytic theories which claim that when individuals are not able to express their feelings in words, they will instead present medically unexplained symptoms as a way for anxious affect to manifest itself (Mai, 2004). Individuals who have difficulties in their emotional processing would therefore be at risk for somatization. Alexithymia is considered a personality characteristic and it involves difficulties in identifying and describing emotions and in reflecting on inner states (Taylor, Bagby, & Parker, 2003). It has been suggested that alexithymic tendencies could contribute to somatic symptoms, especially among individuals of sociocultural groups where open emotional expression and reflection on internal experience are not valued or encouraged (Dion, 1996). This argument points mainly to those sociocultural groups that place more emphasis on collectivistic than on individualistic values

and responsibilities; i.e., societies that are often categorized as ‘non-Western’. Some empirical evidence is available to support this view. For example, high alexithymia levels have been found to predict somatic depressive symptoms among depressed psychiatric patients in Turkey (Sayar, Kirmayer, & Taillefer, 2003). High levels of alexithymia have also been found among Asians and Asian Americans with interdependent self-construals or self-definitions, which can be seen as an internalized, individual level of culture and typical of populations with collectivistic orientation (Konrath, Grynberg, Corneille, Hamming, & Luminet, 2011). However, associations between alexithymia, depression, and somatization are not specific to these sociocultural groups but are also commonly reported in many other populations (Bamonti et al., 2010; Waller & Scheidt, 2006), including Finns (Honkalampi, Hintikka, Tanskanen, Lehtinen, & Viinamäki, 2000).

Some researchers have also raised concerns about the way emotional difficulties are conceptualized within the alexithymia construct. For example, some components of alexithymia may not tap into emotional processing itself but rather into cultural values. Specifically, it seems that difficulties in reflecting on inner states (conceptualized as externally-oriented thinking; Bagby, Parker, & Taylor, 1994) do not necessarily reflect actual individual difficulties in emotional processing, but rather whether reflecting on inner emotional experience is considered important or not (Dere, Falk, & Ryder, 2012; Dere et al., 2013; Ryder et al., 2008). For example, items that measure externally-oriented thinking include statements such as, “Being in touch with emotions is essential,” (reversely coded) and, “I prefer talking to people about their daily activities rather than their feelings” (TAS-20 scale; Bagby et al., 1994). Because reflection on inner states and emotions is considered less important in certain populations, such as East Asians, items like these may lead to overestimations of alexithymia in some sociocultural groups and distort understanding of how difficulties in emotional processing are associated with manifestations of distress. Accordingly, researchers have called for cautiousness in the measurement of alexithymia across different sociocultural groups (Dere et al., 2012, 2013). Furthermore, a literature review revealed that the different aspects of the alexithymia construct seem to be differently associated with somatic symptoms, with difficulty in identifying feelings having the strongest connections with symptom reports and externally-oriented thinking having practically no associations with reported levels of somatic symptoms (De Gucht & Heiser, 2003).

In this dissertation, associations between alexithymia, depressive symptoms (somatic-affective versus cognitive), and somatization were analyzed among

older Somali origin migrants and Finnish-born comparisons in order to gain understanding the role of emotional processing in symptom manifestation in the two groups.

4.2 Causal attributions of mental health problems

Causal attributions of mental health problems are perceptions of the causes of psychiatric problems. These explanations are closely related to ideas of what constitutes adequate help for mental health problems and identification of probable outcomes (Weiss & Somma, 2007). The most common causal attributions of mental health problems among various sociocultural groups of African, Caribbean, and Asian origin are material and social factors, such as poverty and interpersonal problems, as well as spiritual and religious phenomena (Aidoo & Harpham, 2001; Lim, Hoek, & Blom, 2015; McCabe & Priebe, 2004; Sorsdahl, Flisher, Wilson, & Stein 2010). For example, in Burundi, South Sudan, and the Democratic Republic of Congo, local views about the causes of non-psychotic mental health problems, including depression-like experiences, highlighted that these problems stemmed from accumulated hardships, such as loss of property or the death of family members (Ventevogel et al., 2013). A literature review of 14 Western and non-Western countries found that social factors and stress caused by life events (e.g., poverty, losing a job) were perceived by lay individuals as the most commonly perceived causes for depression across all 14 contexts (Hagmayer & Engelmann, 2014).

However, other types of causal attributions of mental health problems seem to vary more between populations. For example, Hagmayer and Engelman (2014) found that in Western contexts, perceptions of supernatural and religious causes of mental health problems were not as common as elsewhere. Psychological and personality causes (e.g., cognitive biases) were the second most common causal attributions of depression (after social causes and stress) among lay people in Western countries. Biomedical causal attributions, such as heredity and biochemical causes, are also typical in North America and Western Europe, especially among mental health professionals. Research among psychiatry experts showed that most participants attributed disorders such as schizophrenia and bipolar disorder exclusively to biomedical factors (Ahn, Proctor, & Flanagan, 2009), and not to a combination of different biomedical, psychological, or environmental variables. In Finland, a study among lay people, nurses, doctors,

and members of parliament showed that the majority considered depression to be a medical state, which was evaluated as more of a disease than, for example, high blood pressure or a hip fracture (Tikkinen, Leinonen, Guyatt, Ebrahim, & Järvinen, 2013). In contrast, biomedical explanations of mental health problems have been reported to be relatively rare outside Western contexts (Carroll, 2004; Lawrence et al., 2006). The different types of causal attributions can be conceptualized and categorized according to the role of the individual and the role of the community or life events in the illness onset (Eisenbruch, 1990; Sterlin, 2006; White, 1982). *Internal* or *individual-centered causes* emphasize factors within the individual (e.g., genes, personality) whereas *external causes* highlight the importance of factors outside the individual (e.g., religion, living environments).

The way illnesses are explained is associated with what is considered effective treatment (Ahn et al., 2009; Sorsdahl et al., 2010), and thus also with help-seeking behaviors. In Finland, biomedical attributions and focus on internal causes for depression play a central role also in the recommended and offered treatments for depression, emphasizing antidepressant drugs and individual therapy (Duodecim, 2016). Differing understandings of the causes of mental health problems, and thereby of effective treatment, may partly explain why some refugee origin groups seldom use mental health services in many European countries (Gerritsen et al., 2006; McCrone et al., 2005), including Finland (Castaneda et al., 2012).

In addition to differences in understanding mental health problems across sociocultural groups, views on what causes mental health problems can also differ between individuals according to sociodemographic factors such as gender, age, and education. Moreover, in the context of migration, perceptions of mental health problems may change as individuals come into contact with salient ideas, values, and conceptions in their new home country. This thesis focuses on analyzing older Somali origin migrants' causal attributions of mental health problems. The causal attributions are examined in relation to participants' demographic characteristics, their contact with the Finnish psychiatric health care system, and proxy indicators of acculturation to Finnish society.

4.2.1 Causal attributions and symptom manifestation

Besides service use and satisfaction with mental health services, the way people understand and perceive mental distress and its causes may impact their ways of

manifesting symptoms. According to the historian of medicine, Edward Shorter (1992), different sociocultural contexts can affect the manifestation of mental health symptoms by defining which symptoms are relevant in a particular context. This “symptom pool” is thought to contain different symptoms that resonate with the salient ideas and values of the surrounding living environment (Shorter, 1992, pp. 5–10). Individuals living in a specific context would therefore be able to express their suffering to others (often unconsciously) in an understandable and meaningful way, by choosing appropriate symptoms from the “pool”. A subjective experience that fits a cultural script (i.e., what is perceived as common) is likely to be more meaningful and amplified (Ryder et al., 2011).

Additionally, the cognitive processes involved in explaining and understanding mental health problems (e.g., attention, interpretation) may either intensify or attenuate certain symptoms (Kirmayer & Sartorius, 2007). In other words, general perceptions of mental health problems can affect mental health symptoms by ascribing meanings to specific symptoms. Symptoms that are a part of ‘illness prototypes’ can become more prominent than symptoms that do not fit cultural models of illness. For example, loss of consciousness can be a more common symptom among some Latin American groups compared to other sociocultural groups, because among Latinos this symptom fits into conceptions of *ataque de nervios* and is a part of the salient illness prototype (Kirmayer & Sartorius, 2007). The surrounding social reality may thus allow or reinforce some symptoms and bring about cultural idioms of distress; i.e., symptoms that serve a communicative purpose in the wider community (Nichter, 1981). Concerning depression, the perceived role and responsibility of the individual with regard to illness onset can shape whether individual-focused symptoms, such as low self-esteem or feelings of worthlessness, are emphasized or not. For example, interpreting low self-esteem as a sign of depression, and individual characteristics such as personality as important factors in the illness onset, may further amplify low self-esteem and negative feelings about the self as symptoms of depression, thus creating a feedback loop where these symptoms become meaningful and, consequently, more common.

As cultural conceptions of mental health can be seen as relevant for the subjective experience and manifestation of symptoms, this dissertation examined perceptions of the causes of mental health problems (i.e., causal attributions of mental health problems) and their associations with the manifestation of specific

depressive symptoms (i.e., somatic-affective and cognitive depressive symptoms) among older Somali origin migrants.

5 SOMALI CONCEPTIONS OF MENTAL HEALTH

“If a person is sad and low in spirits, it does not mean they are mad.
If a person has depression (*qalbijab*), there is always
a reason for it and the person knows it.
Therefore, she/he has to do something about the problem.”

Asha

(Tiilikainen, 2013, p. 158)

Instead of a dualistic division between mental and somatic problems, traditional Somali medicine sees health in a holistic way where somatic and psychological well-being intertwine with each other and cannot be separated (Slikkerveer, 1990, p. 167). Notions related to causes, expressions, and illness categories of mental distress are overlapping, and many problems, such as low mood, crying, or persistent headaches, that can be considered indicators of mental disorders in Western psychiatry are commonly seen as a normal part of life in Somali communities (Bentley & Owens, 2008).

Somalis do not typically differentiate qualitatively between different psychiatric problems (e.g., depression being different from PTSD) but individuals are seen as differing instead in the amounts of suffering, and only extreme amounts of suffering are considered a mental health problem (Johnsdotter et al., 2011; Loewenthal, Mohamed, Mukhopadhyay, Ganesh, & Thomas, 2012). Emotional suffering or feelings of anxiety and low mood are seen as natural reactions to adversities in life. However, when strong emotions and their causes are not solved properly, they can lead to *waalli* (or *waali/walli*), ‘madness’. *Waalli* is associated with socially disturbing behavior and incapability of managing everyday tasks such as personal hygiene (Tiilikainen, 2003, pp. 215–218; Carroll, 2004) corresponding to psychosis spectrum disorders in the Western psychiatric framework. Although *waalli* is usually considered a mental health problem, it is not considered a disease; that is, an abnormal functioning of the body or brain. Instead, Somalis often attribute *waalli* to difficult life experiences; strong emotional states that are not resolved appropriately; or *jinn*

(or *djinn*), invisible spirits created by Allah (Mölsä et al., 2010). Recovery from *waalli* is unlikely, and the perceived irreversible character of mental health problems makes suffering from them frightening and stigmatizing (Carroll, 2004; Guerin, Guerin, Diiriye, & Yates, 2004; Rivelli, 2010).

There is no single linguistic equivalent for depression in the Somali language. Terms denoting strong emotional experiences such as *welwel* (worry), *niyadjab* or *qalbijab* (demoralization and sadness due to disappointment), *murugo* (sadness), and *qulub* (disappointment, frustration, sadness) come the closest (Carroll, 2004; Cavallera et al., 2016; Tiilikainen, 2003, pp. 212–218). In addition, *islabadal* is a form of emotional distress that resembles depression-like experiences (McMichael, 2003, pp. 251–267). Symptoms of *islabadal* involve loss of motivation and appetite, tearfulness, anxiety, sleeplessness, and talking to oneself, which stem from loss of social belongingness and community, family separation, and the struggles of everyday life in the diaspora. The term that is most commonly used to describe mood problems, sadness, or demoralization varies significantly in different parts of Somalia (Cavallera et al., 2016) and across Somali communities in the diaspora (Carroll, 2004; McMichael, 2003, pp. 251–267; Tiilikainen, 2003, pp. 212–218). A common aspect to all these emotional states is that they should be resolved properly by changing social circumstances and receiving help from social and religious networks, or else they can lead to more severe forms of suffering, most commonly to *waalli*. In addition, some forms of emotional distress are gendered. For example, *buufis* relates to sadness and distress in the context of unmet resettlement hopes and dreams, and it involves, for example, poor appetite and insomnia (Horst, 2006). *Buufis* is common among men whereas *maseyrka*, a strong emotional experience of envy and jealousy stemming from polygamous relationships, mainly affects women (Mölsä et al., 2010).

5.1 Causal attributions of mental health problems in Somali communities

In Somalia, the social world occupies a central position in well-being, and illnesses are commonly attributed to various life problems and social reality (Carroll, 2004; Tiilikainen, 2010). Previous studies have confirmed that Somali

origin migrants consider the social world, and pre- and post-migration life experiences such as war, discrimination, loneliness, and loss of loved ones, essential factors that pose a strain on mental well-being (Johnsdotter et al., 2011; Mölsä et al., 2010; Ryan, 2007).

In many Somali communities, religious factors and spiritual phenomena are also central in understanding why some people suffer emotionally or physically. Different types of suffering can be seen as a punishment or a test from Allah (Tiilikainen, 2000). *Jinn*, invisible spirits or beings created by Allah and presented in the Koran (Dein, Alexander, & Napier, 2008), are common explanations of mental health problems among many Muslim-faith groups, including Somalis. According to Islamic theology, *jinn* resemble humans and live among people in similar ways as humans (e.g., they form relationships and work). Somalis consider that hardships in life may bring about vulnerabilities to *jinn* and individuals can be attacked by a *jinni* because of bad luck, being in certain suspicious places (e.g., dark or unclean environments and walking under trees; Ryan, 2007), or if a person has made it angry, for example, by accidentally stepping on it (Cavallera et al., 2016).

Traditionally, other types of spirits have also been thought to cause suffering within Somali communities, such as sadness, sleeping problems, and bodily pains (Tiilikainen, 2010). Nevertheless, mental health conceptions and causal attributions are susceptible to change in time, sociopolitical context, and culture. For example, the more puritanical interpretations of Islam in Somalia in recent years and the increased awareness of religious teachings in exile (e.g., Berns McGown, 1999) have shaped conceptions about the role of spirits, evil eye, and witchcraft for illness and health (Mölsä et al., 2010). Previously commonly known *saar* (or *zar*) spirits are nowadays often seen as being against Islam, whereas the power of *jinn* cannot be denied due to their prominence in Islamic theology (Tiilikainen, 2010). The various problems caused by *jinn* spirits cannot be treated with Western medicine, but rather with appropriate rituals, Koran readings, and adherence to religious and social networks (Carroll, 2004; Guerin et al., 2004; Johnsdotter et al., 2011; Wedel, 2012).

6 CROSS-CULTURAL ASSESSMENT OF DEPRESSION

In order to make accurate diagnoses and estimations of the prevalence of depression or other mental health problems, clinical assessment methods such as depressive screening instruments and scales should be valid; that is, they need to measure what they are intended to measure. Potentially different ways of conceptualizing and manifesting distress can, however, make it challenging to use certain scales in multicultural contexts when they were created in a specific sociocultural context. Failure to establish scale validity can lead to spurious assumptions about mental health phenomena, and can affect subsequent research and knowledge. In clinical settings, the use of invalid scales can hinder and bias accurate diagnoses and affect access to suitable mental health services.

6.1 Development of culturally valid diagnostic instruments

Because of the various ways mental health problems may present themselves in different contexts, some researchers have developed and validated screening and diagnostic instruments for specific ethnic and linguistic populations and for multicultural settings. These aspirations commonly combine etic ('universalist') and emic ('culture-specific') approaches, such as modifying existing psychiatric instruments (etic approach) with local symptoms derived from ethnographic interviews (emic approach). For example, a 13-item depression screening instrument in Haitian Creole included three local idioms of distress: *de la la* (low energy); *kè sere* (constricted heart); and *kalkile twòp* (thinking too much; Rasmussen et al., 2015). Different methods can also be combined in order to assess mental health in a more valid way. In Rwanda, the presence of clinical depression was approximated with the use of two instruments: a culturally-adapted Hopkins Symptom Checklist-25 (HSCL-25; Derogatis et al., 1974) depression and anxiety questionnaire (including an added question about psychomotor agitation), and a locally-developed scale of functional impairment

covering relevant tasks in the community that were important indicators of ability to function (Bolton, Neugebauer, & Ndogoni, 2002).

Besides psychiatric questionnaires, clinical interviews can be used and modified to take into account cultural ways of experiencing distress. Bhui et al. (2006) have described the validation of the MINI Neuropsychiatric Interview (which assesses depression and anxiety) in the Somali language in the UK. The validation process included a stepwise translation protocol starting with identifying key terms in the Somali language, using bilingual translators speaking different Somali dialects, and discussing translated materials in focus group interviews with Somali origin professionals and lay individuals. In addition, bilingual Somali researchers were trained to identify only those manifestations of distress that were considered pathological from the Somali cultural framework. Finally, statistical methods were used to assess the reliability and construct validity of the Somali version of the MINI.

More general cultural psychiatric methods for diagnosing mental health problems have also been developed that are not specific to a certain ethnic or linguistic group. For example, the fifth version of the DSM (DSM-5; American Psychiatric Association, 2013a) includes a semi-structured diagnostic interview to help understand and diagnose mental health problems in multicultural settings. The Cultural Formulation Interview (CFI) includes questions that assess patients' cultural description of the problem, their perceptions of the cause of the problem, and their help-seeking behaviors. As such, the CFI focuses on the patient's subjective illness experience without making assumptions about the patient's cultural background or how it might affect their mental health (Lewis-Fernández et al., 2014). The CFI is also available in Finnish and can be found online (Finnish Psychiatric Association, n.d.). A Swedish study among migrant and refugee origin outpatients diagnosed with non-psychotic mental health problems found that in 56.5% of the cases, the diagnosis was changed when using the Outline for Cultural Formulation (OCF) of DSM-IV (previous version of the CFI; Bäärnhielm, Åberg Wistedt, & Rosso, 2015). Among other benefits, the cultural formulation interview helped clinicians to revise their diagnoses by providing them with more information about their patients' background and subjective experiences, and helped clinicians to forge better connections with their patients.

6.2 Test validity and equivalence

When previously developed psychiatric questionnaires are used, rather than those adapted to specific populations, test equivalence becomes a central issue in assessing mental health across different groups. *Equivalence* can be defined as “the state of being equivalent or interchangeable” (Collins English Dictionary, 1998; “equivalence”, p. 523). In cross-cultural research, *equivalence* refers to several different concepts and it is closely related to the concept of *invariance*¹¹. An equivalent depression questionnaire or scale is one that captures the depression levels of two individuals suffering from an equally severe depression regardless of the individuals’ group membership (e.g., cultural background; Fischer & Fontaine, 2011; van de Vijver & Tanzer, 2004). If individuals with the same level of depression score differently on a scale because of their group membership, then the scale does not perform equally well in all groups and, therefore, is not equivalent. *Equivalence* is also closely related to *validity*: a valid scale is an equivalent scale. However, statistical equivalence alone does not guarantee that the scale is valid. For example, it is possible that a statistically equivalent depression scale does not measure all the relevant aspects of depressive experience in a particular sociocultural group, if salient symptoms for that group are not included in the scale.

6.2.1 Different levels of equivalence

The term *construct* (or *functional*) *equivalence* is used to denote the *qualitative similarity* of concepts under examination. For example, construct equivalence of depression would mean that the concept of depression (i.e., semantic meaning, symptoms) is identical in two or more groups. Because of the different ways mental health problems are named, conceptualized, and expressed, achieving full construct equivalence in mental health concepts is uncommon (van de Vijver & Leung, 2011). Instead, partial construct equivalence is easier to achieve; that is, that the concept shares some common traits across groups but is not qualitatively identical.

Quantitative aspects of equivalence comprise different levels of invariance and statistical procedures (van de Vijver & Leung, 2011). Comparison of test scores

¹¹ *Equivalence* is more often used to describe the conceptual aspects of similarity whereas *invariance* is used to refer to the statistical methods for testing equivalence.

on psychological questionnaires across groups through statistical means is crucial, as psychiatric assessment methods typically use Likert type scales where symptoms are evaluated using ordinal variables on a scale; e.g., with answer options varying from 1 to 3 or 4 (i.e., 1 = *Never/Not at all*, 4 = *Always/Very much*). Because these numerical options are not continuous units that can be observed and measured physically in the way length or weight can be, researchers must examine the scales in order to verify that the difference (or distance) between options 1 *Never* and 2 *Almost never* (and 2 and 3 and so on) is the same in all the compared groups, and that the scales have the same starting point (or point of origin).

In statistical terms, two levels of invariance are commonly differentiated: *weak* and *strong measurement invariance*. Weak measurement invariance comprises *structural* and *metric equivalence*, meaning that the scale has a similar factor structure (i.e., number of factors and item distribution into the factors) across groups and that the item loadings are also equal across groups (van de Vijver & Leung, 2011). Weak measurement invariance also entails that the measurement unit is the same in different groups. For example, in the case of Celsius and Fahrenheit scales, the measurement unit in both scales is temperature and the change in temperature measured by both scales is the same: one degree in Celsius scale corresponds to 1.8 degrees in Fahrenheit scale. In measuring depression, the same measurement unit means that the difference in the change in depressive scores is the same across groups (e.g., an increase of depressive score by 4 points is equally large in all groups). However, weak measurement invariance does not tell us whether the point of origin of the measurement unit is the same. For example, in the case of Celsius and Fahrenheit, the scales do not have the same starting point: a temperature of zero degrees on the Fahrenheit scale corresponds to -17.8 degrees on the Celsius scale and therefore, without knowing the starting point of these scales, temperatures cannot be directly compared. When assessing depression (or other psychological phenomena), we do not know *a priori* whether or not different groups have the same point of scale origin. Therefore, although a scale would demonstrate weak measurement invariance (i.e., the same measurement unit), it does not allow direct comparisons of assessment scores or means across groups. Instead, only relative comparisons, such as changes of depressive scores within a group, are meaningful.

In order to compare if the severity of depressive scores (e.g., mean scores) across two or more groups is the same, *strong, scalar, or full measurement invariance* needs to be achieved (Fischer & Fontaine, 2011). Strong measurement invariance

entails that the scales have the same measurement unit and the same point of origin (e.g., both scales starting at zero), making numerical comparisons legitimate and meaningful. Depressive scores of, for example, 34 on a scale with strong measurement invariance would indicate the same symptom severity in all the studied groups.

Achieving strong measurement invariance is especially relevant in psychiatric and psychological research and clinical practice, where questionnaires and assessment scores (e.g., depressive scores) are used to differentiate between clinically significant and non-significant depression, to determine the severity of depression, and for making conclusions about the prevalence and treatment of depression. Whenever assessment scores are used to calculate sum, mean, or cut-off scores, it should be verified that the applied scale measures what it is supposed to measure (e.g., depression) and that the assessment scores (and differences in assessment scores) have the same unit of measurement and the same point of origin. If the methods used are not invariant across groups, researchers and clinicians may make invalid conclusions; for example, they may interpret group differences where there are none, or they may not find them when they are present. However, researchers in mental health often lack awareness of these issues which can affect the validity of their research methods (Maters, Sanderman, Kim, & Coyne, 2013). This thesis examined whether commonly used depression, anxiety, and somatization scales, such as the HSCL-25 (Derogatis et al., 1974) and the somatization subscale of the Symptom Checklist-90 (SCL-90-Somatization; Derogatis et al., 1973), perform in the way they are supposed to among Somali origin migrants in Finland, and whether these scales can be used to make valid estimations of depression, anxiety, and somatization among the Somali population in Finland. The analyses were done in a comparative setting where the validity of these scales was compared among Somali, Russian, and Kurdish origin migrants in Finland.

AIMS OF THE RESEARCH

The general aim of this dissertation was to incorporate cultural awareness into both psychiatric knowledge of depressive symptom manifestation, and the assessment of depression, anxiety, and somatization symptoms in the context of migration in Finland. The manifestation of different types of depressive symptoms was examined in relation to difficulties in emotional processing (alexithymia) and perceived causes of mental health problems (causal attributions of mental health problems). The aims, research questions, and hypotheses of this dissertation were as follows:

First, it focused on the manifestation of depressive symptoms among older Somali origin migrants and Finnish-born comparison individuals.

The aims and research questions were as follows:

- 1) To analyze how older Somali origin migrants and Finnish-born individuals manifest depressive symptoms. Based on cross-cultural and anthropological research on depressive symptom manifestation in different populations, it was hypothesized that Somalis would manifest more somatic-affective depressive symptoms (e.g., poor appetite and fatigue) than cognitive depressive symptoms (e.g., feelings of guilt and self-blame), and that Finns would manifest more cognitive depressive symptoms than somatic-affective depressive symptoms. The salience of both types of depressive symptoms was also analyzed by comparing symptom manifestation across groups; that is, between Somalis and Finns and between men and women in both groups.
- 2) To examine and compare the associations between difficulties in emotional processing and depressive and somatization symptoms among older Somalis and Finns, with the aim of better understanding mechanisms leading to the manifestation of depressive and somatization symptoms. This is in line with previous research and theories suggesting that difficulties in emotional processing (alexithymia) could explain the

varying rates of somatic and psychological expressions of distress in different sociocultural groups.

Second, it focused on older Somali origin migrants' perceived causes of mental health problems.

The aims and research questions were as follows:

- 1) To examine how older Somali origin migrants explain the causes of mental health problems. As mental health views are not fixed but instead susceptible to change, causal attributions of mental health problems were analyzed in relation to demographic characteristics (gender, age, and education), diagnostic characteristics (psychiatric diagnosis and/or treatment history), and proxies of acculturation (time spent in Finland, Finnish language proficiency, and Finnish nationality).
- 2) To examine how these causal attributions of mental health problems were associated with depressive symptom manifestation. Based on previous research on cultural illness models (or scripts) shaping symptom manifestation, it was hypothesized that intra-individual causal attributions of mental health problems (e.g., excessive worrying causing mental health problems), which locate the causes for illness in factors within the individual, would be associated with the manifestation of cognitive depressive symptoms (e.g., guilt) that emphasize the individual's role in mental health. Further, it was hypothesized that causal attributions of mental health problems involving life experiences (e.g., war causing mental health problems), which allocate causes for illness to factors outside the individual, would be associated with the manifestation of somatic-affective symptoms (e.g., insomnia) that do not emphasize the individual's role in mental health. No specific hypothesis was set regarding depressive symptom manifestation and socioreligious attributions of mental health problems (e.g., God's will causing mental health problems), as these causal attributions locate the causes for illness in factors both within the individual (e.g., religious adherence) and outside the individual (e.g., faith).

Third, as research has revealed local and group-specific ways of experiencing and manifesting mental health problems in different populations, this thesis focused on how well psychiatric questionnaires developed in a Western context

(namely, HSCL-25 and SCL-90-Somatization scales) measured depression, anxiety, and somatization among Somali origin adults. The validity of the scales was analyzed in a comparative setting among Somali, Russian, and Kurdish origin migrants in Finland.

The aim was to evaluate whether these scales measure depression, anxiety, and somatization in a valid way in the studied migrant origin populations. In statistical terms, the scales' psychometric properties were examined, with the aim of testing if weak or strong measurement invariance could be established.

MATERIALS AND METHODS

7 PARTICIPANTS AND PROCEDURE

Table 2. Participants, research questions, and measures in the articles

	Article I	Article II	Article III
Participants	128 older Somali origin migrants and 128 matched-pair Finnish-born individuals aged between 50 and 79 years	128 older Somali origin migrants aged between 50 and 79 years (the same as in Article I)	378 Somali, 462 Russian, and 516 Kurdish origin migrants aged between 18 and 64 years
Main research question(s)	How do older Somali origin migrants and Finnish comparisons manifest depressive symptoms? How are difficulties in emotional processing (alexithymia) associated with depressive and somatization symptoms in the two groups?	What are the most common causal attributions of mental health problems among older Somali origin migrants? Are they associated with the manifestation of depressive symptoms?	Do non-adapted psychiatric questionnaires (HSCL-25 and SCL-90-Somatization) measure depression, anxiety, and somatization as intended among Somali, Russian, and Kurdish origin migrants?
Measurement of depression	BDI scale	BDI scale	HSCL-25 scale
Measurement of anxiety	-	-	HSCL-25 scale
Measurement of somatization	SCL-90-R-Somatization scale	-	SCL-90-Somatization scale
Measurement of alexithymia	TAS-20 scale	-	-

Causal attributions	-	"What are the three most important causes for mental health problems?"	-
Demographic characteristics	-	Gender, age, and education	-
Diagnostic characteristics	-	Psychiatric diagnosis and/or psychiatric treatment history	-
Acculturation proxies	-	Finnish nationality, Time spent in Finland, Finnish language proficiency	-

Notes. BDI = Beck Depression Inventory; HSCL-25 = Hopkins Symptom Checklist-25; SCL-90-R-Somatization = Somatization subscale of the Symptom Checklist-90-R; SCL-90-Somatization = Somatization subscale of the Symptom Checklist-90; TAS-20 = Toronto Alexithymia Scale

7.1 Participants in studies on depressive symptom manifestation and causal attributions of mental health problems (Articles I and II)

In Articles I and II, the Somali participants were 128¹² older (50-79 years of age) Somali origin migrants (M age = 57.90 years, SD = .50) of whom more than half (59%) were women. They were all born in Somalia and legal residents of Finland, living in the Helsinki metropolitan area. The participants were chosen from the National Population Registry. If they were not contactable by phone, the preselected participants were located and contacted through social networks and mosques, cultural centers, language classes, and coffee shops. The research visits were carried out by Somali-speaking research assistants in 2007. The research visits lasted on average two hours, and took place in the participants' homes or in some of the common meeting places within the Somali community. The participation rate among the contacted individuals was 93%.

The Finnish comparisons (Article I) were 128 Finnish-born individuals who were matched in age, gender, education, and civic status to the Somali

¹² The sample size of 128 Somali origin individuals and 128 Finnish origin matched pairs was estimated to be sufficient to produce good power (above .80) for the subsequent statistical analyses (i.e., *t*-tests, ANOVA, Pearson correlations).

participants¹³. Finnish participants' information came from the Finnish Health 2000 study conducted by the National Institute for Health and Welfare in 2000 (Aromaa & Koskinen, 2003). The Finnish participants answered the same information as the Somali participants in Article I. The contact information of the Finnish sample population was obtained from the National Population Registry. The research data were collected during home visits and health examinations, during which the participants were given questionnaires to be returned at the next research visit or to be mailed back. The participation rate in the interviews was 88%, and in the health examinations 80%.

7.2 Participants in the study on measuring depression, anxiety, and somatization in Finnish migrant populations with non-adapted psychiatric questionnaires (Article III)

The participants in Article III were 378 Somali, 462 Russian, and 516 Kurdish origin migrants, aged between 18 and 64 years, who were born in Russia or the former Soviet Union (native Russian or Finnish speakers), Somalia, and Iraq or Iran (native Kurdish speakers). All individuals had lived in Finland for at least one year prior to the study. The data were part of a large-scale population-based Finnish Migrant Health and Well-being study (Maamu) conducted by the National Institute for Health and Welfare in 2010–2012 (Castaneda et al., 2012). Contact information was obtained from the National Population Registry according to residents in six Finnish municipalities: Helsinki, Espoo, Vantaa, Turku, Tampere, and Vaasa. The sampling method was stratified random sampling by municipality and ethnic group. In order to produce population-level estimates that are representative of the Somali, Russian, and Kurdish populations in Finland, and in order to reduce bias due to non-response, inverse probability weights (IPW; Robins, Rotnitzky, & Zhao, 1994) were calculated according to

¹³ As part of the matching process, 4,531 Finnish participants (93.1% Finnish and 6.9% Swedish speakers) in the Health 2000 study (Aromaa & Koskinen, 2003) were selected. Of these, corresponding pairs for the 128 Somali participants were chosen according to gender, age (classified as 50-59, 60-69, and 70-79 years), and education (none, vocational, university). Because practically all Finns receive at least primary education, whereas many older Somali participants have no formal education at all, the levels of education in the category of 'no education' differed among Finns and Somalis (Finnish participants with only primary education and Somali participants without primary education).

ethnic group, age group, gender, municipality, and marital status. These weights were used throughout this dissertation.

The Hopkins Symptom Checklist-25 (HSCL-25; Derogatis et al., 1974) and Symptom Checklist-90 (SCL-90)-Somatization (Derogatis et al., 1973) scales were administered during health examinations by native Somali, Russian, and Kurdish speaking research nurses. Most participants answered the research questionnaires in a written format. The participation rate in the health examination was 38% in the Somali group, 46% in the Russian group, and 53% in the Kurdish group. In this thesis, only participants who had answered at least 31 questions of the HSCL-25 and SCL-90-Somatization scales (35 questions in total) were included.

8 MEASURES

8.1 Depression and anxiety

In Articles I and II, depression was measured with the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). This scale has 21 symptoms that relate to depressive mood, thoughts, and behavior during the past seven days. The answer options of each item range in intensity on a scale of 0 to 3 (e.g., “I do not feel sad; I feel sad; I am sad all the time, and I can’t snap out of it; I am so sad or unhappy that I can’t stand it”).

In Article III, depression and anxiety were measured with the Hopkins Symptom Checklist-25 (HSCL-25), a bi-factorial instrument based on the Hopkins Symptom Checklist questionnaire (Derogatis et al., 1974) and designed to measure depression and anxiety. It has 15 items relating to depression (e.g., “Feeling no interest in things”) and 10 items relating to anxiety (e.g., “Being suddenly scared for no apparent reason”). Answers are given on a scale from 1 (*Not at all bothered*) to 4 (*Extremely bothered*) and estimated reflecting on the past seven days. The HSCL-25 is reported to be a valid instrument across different ethnic and cultural groups (Bean, Derluyn, Eurelings-Bontekoe, Broekaert, & Spinhoven, 2007; Mouanoutoua & Brown, 1995; Syed, Zachrisson, Dalgard, Dalen, & Ahlberg, 2008). It is frequently used to assess depression and anxiety among refugee populations (Bogic et al., 2015) and its use with migrants in multicultural settings has been recommended (Davidson, Murray, & Schweitzer, 2010). However, questions have been raised regarding its reliability and validity among Somali origin refugees (Onyut et al., 2009).

8.2 Somatization

In Article I, somatization was measured via the Somatization subscale of the Symptom Checklist-90-R instrument (SCL-90-R; Derogatis, 1992). The subscale includes 12 items regarding somatization symptoms; e.g., “soreness of muscles”. The participants were asked to estimate on a 5-point Likert scale how much they

had suffered from the specific symptoms during the last month (1 = *Not at all*; 5 = *Very much*).

In Article III, somatization was measured via the Somatization subscale of the Symptom Checklist-90 instrument (SCL-90; Derogatis et al., 1973). The SCL-90-Somatization scale comprises 10 items regarding somatic discomfort and pains, such as “trouble breathing” or “pains in heart or chest”. Symptom severity is evaluated over the past seven days, on a scale of 1 (*Not at all bothered*) to 4 (*Extremely bothered*). Two somatization items, “headaches” and “faintness or dizziness”, are included in the SCL-90-R-Somatization scale, but not in the SCL-90-Somatization scale where they are included in the anxiety subscale. Excluding these two, the other items in the SCL-90-R-Somatization and SCL-90-Somatization scales are the same.

8.3 Difficulties in emotional processing (alexithymia)

Difficulties in emotional processing were conceptualized as alexithymia and measured with the Toronto Alexithymia Scale (TAS-20; Bagby et al., 1994) in Article I. The scale consists of 20 statements on recognizing and describing emotions, and externally-oriented thinking. The TAS-20 has three subscales: *difficulty identifying feelings* (DIF; e.g., “I am often uncertain about my feelings”); *difficulty describing feelings* (DDF; e.g., “It is hard for me to find out the right words to describe my feelings”); and *externally oriented thinking* (EOT; e.g., “I prefer rather talking with people about their daily routine than about their feelings”, reverse-coded). The answer options are on a 5-point Likert scale (1 = *Not at all true*; 5 = *Very true*).

8.4 Causal attributions of mental health problems

In Article II, perceptions of the causes of mental health problems (causal attributions of mental health problems) were examined by asking participants to name the three most important causes for mental health problems. All responses were listed and conceptual categories underlying the responses were identified through content analysis. The emerging categories were named as (a) *life experiences* (answers such as poverty, war, hard life, and loss of property), (b) *interpersonal causes* (answers related to social networks, loneliness, interpersonal problems, and

jealousy due to polygamous relationships), (c) *religious causes* (answers related to God and *jinn* spirits), (d) *psychological causes* (answers related to emotional experience and cognitive-behavioral responses such as thinking too much¹⁴ and gambling), and (e) *somatic causes* (answers related to insomnia, somatic problems, and substance use).

In order to analyze the associations between causal attribution categories, demographic characteristics, diagnostic characteristics, acculturation proxies, and depressive symptom manifestation, three wider attribution categories were formed. The first category combined *interpersonal* and *religious causes* into one category labeled *socioreligious causes*. This decision was based on traditional Somali medicine, which sees health as relational and dependent on balance in the social world and on one's relation to God, spirits, and other humans (Slikkerveer, 1990, p. 167). The second category combined *psychological* and *somatic causes* into *intraindividual causes*, in line with holistic health views in Somali culture that contradict dualistic division between psychological and physical factors. The third category included *life experiences* (e.g., war, poverty) and was the same as the category emergent through content analysis.

8.5 Other measures

Demographic characteristics (Article II) included three variables: gender (male, female); age (50-59 years, 60-69 years, 70-79 years); and education (none, vocational, university).

Diagnostic characteristics (Article II). Participants were asked whether they had been diagnosed with a psychiatric disorder (psychosis, depression, anxiety, or substance abuse) and whether they had been hospitalized, received medication, or visited a doctor due to the disorder. A dichotomous variable of psychiatric diagnosis and/or treatment history (yes/no) was formed.

Proxies of acculturation (Article II). In order to analyze how living in Finland might be associated with causal attributions of mental health problems, three proxy indicators of acculturation were used: Finnish nationality (yes/no); time spent in Finland; and Finnish language proficiency. Time spent in Finland was

¹⁴ Thinking too much is a common distress-related idiom in use around the world (Kaiser et al., 2015). Although it can be seen as a cultural way of understanding distress, it also resembles ruminative tendencies that are common features of depression and anxiety as understood in the Western psychiatric framework. Accordingly, in this dissertation study, causal attributions involving 'thinking too much' were classified as a psychological/intraindividual factor.

divided into three classes: 0–5 years; 6–10 years; and 11–20 years. Finnish language proficiency was categorized as either not knowing any Finnish or having at least basic knowledge of the language.

8.6 Translation procedure

In Articles I and II, the questionnaires were translated from Finnish into Somali language by a professional translator, and three Somali language specialists checked the translations. Special attention was paid to semantics in order to ensure the appropriate meanings of psychiatric terminology. In Article II, answers of causal attributions of mental health problems were translated from Somali into Finnish and English by a native Somali speaker. The translations were checked by another native Somali speaker working at the University of Helsinki, Finland. In Article III, previously translated versions of the HSCL-25 in Somali, Russian, and Kurdish (Sorani dialect) were used (see Bean et al., 2007). All other study material in Article III, including information leaflets, consent forms, and the SCL-90-Somatization questionnaire were translated in Somali, Russian, and Kurdish by professional translators, and checked and modified where necessary by the bilingual fieldworkers working on the Maamu study.

9 STATISTICAL ANALYSES

9.1 Depressive symptoms, somatization, and difficulties in emotional processing (Article I)

Internal consistencies of all measures, and associations between the scales, were examined separately for Somali and Finnish participant groups. Separate factor analyses and Procrustes rotations (configural invariance) were conducted for depression (BDI; Beck et al., 1961) and alexithymia (TAS-20; Bagby et al., 1994) scales in order to confirm their factor structures. More robust analyses of measurement invariance, such as structural equation modeling (SEM), were not conducted because of the relatively small samples sizes (128 individuals in both groups). For the use of SEM, it is commonly recommended that the sample size should be around 200 or with a sample-size-to-parameter ratio of 20:1, that is, in the case of the BDI scale (21 items), the ideal sample size would be 420 (Kline, 2011; pp. 11–12).

The depression (BDI) items were first divided theoretically into two categories, *somatic-affective* and *cognitive depressive* symptoms, and the division was confirmed and modified by running separate principal axis factor analyses in both groups. The proportionality coefficients (i.e., Tucker's *phi*) for the final factor solution were both above .85, thus suggesting acceptable structural equivalence for the somatic-affective and cognitive categories (Ten Berge, 1986). There were 10 items in the final somatic-affective symptoms category: depressed mood; irritability; loss of interest; indecisiveness; difficulties working; insomnia; fatigue; loss of appetite; somatic preoccupation; and loss of interest in sex. The cognitive symptoms category included eight items that represent self-centered negative ideation: pessimism/hopelessness; sense of failure; dissatisfaction; guilt; self-dislike; self-blame/self-accusations; suicidal ideation; and body image change.

The preliminary analyses of the alexithymia scale (TAS-20) revealed that the *externally oriented thinking* (EOT) subscale lacked internal consistency among Somalis, and that the TAS-20 scale with all the three subscales had poor structural equivalence in the Somali and Finnish groups. After removing the EOT subscale, the structural equivalence improved considerably. Therefore, only *difficulty*

identifying feelings (DIF) and *difficulty describing feelings* (DDF) subscales were used in measuring difficulties in emotional processing in the subsequent analyses.

The manifestation of somatic-affective and cognitive depressive symptoms within Somali and Finnish groups, and between men and women in both groups, was analyzed with dependent samples *t*-tests. Depressive symptoms across the groups were analyzed with MANOVA. Associations between difficulties in emotional processing (alexithymia), depressive symptoms (somatic-affective and cognitive), and somatization were examined with Pearson correlation coefficients, and the strengths of the correlations were analyzed with Fisher transformations (χ scores).

9.2 Causal attributions of mental health problems (Article II)

In Article II, a new principal axis factor analysis of the depressive symptoms (BDI items) for the Somali group was conducted because four items did not fit well within the two-factor structure (somatic-affective and cognitive depressive symptoms) in the Somali and Finnish groups (Article I). In the final factor solution with only the Somali group (Article II), the somatic-affective symptoms category included 14 items regarding lowered mood and somatic discomforts: depressed mood; irritability; loss of interest; indecisiveness; difficulties working; insomnia; fatigue; loss of appetite; somatic preoccupation; loss of interest in sex; hopelessness/pessimism; feeling of punishment; weight loss; and crying¹⁵. The cognitive depressive symptom category included seven items about negative feelings and ideas about self: sense of failure; dissatisfaction; guilt; self-dislike; self-blame/self-accusations; suicidal ideation; and body image change.

Associations between causal attribution categories and demographic characteristics, diagnostic characteristics, and acculturation proxies were analyzed using chi-squared tests (χ^2 values). In order to analyze associations between causal attribution categories and depressive symptom manifestation, dichotomous variables of socioreligious, intraindividual, and life experiences attribution categories were formed (i.e., no = not reported; yes = reported). Due to non-normality in the data, associations between the dichotomous causal attribution

¹⁵ The somatic-affective category in Article II therefore included three symptoms (feeling of punishment, weight loss, and crying) that were excluded in the depressive factor solution among Finns and Somalis due to dissimilar loadings of these symptoms in Article I. In Article II, the symptom of hopelessness/pessimism was classified as a somatic-affective symptom instead of a cognitive depressive symptom (Article I).

categories and the manifestation of depressive symptoms (somatic-affective versus cognitive) were examined with Mann–Whitney U tests (pairwise non-parametric comparisons between each attribution category and somatic-affective and cognitive depressive symptoms).

9.3 Validity of the questionnaires measuring depression, anxiety, and somatization (Article III)

An exploratory structural equation modeling (ESEM) approach (Marsh, Morin, Parker, & Kaur, 2014) was used in order to analyze the validity (measurement invariance) of the HSCL-25 (depression and anxiety) and SCL-90-Somatization scales. ESEM is theory-driven and it is used to test the fit between datasets and existing theoretical models, but it also allows cross-loading of items into different factors. Therefore, it can be considered to be particularly suitable for studying co-morbid mental health phenomena (Arias, Ponce, Martínez-Molina, Arias, & Núñez, 2016). Successive models constraining progressively different sets of parameters for measurement invariance were chosen (i.e., first testing configural invariance, then weak invariance, then strong invariance; Marsh et al., 2014).

The psychometric properties of the HSCL-25 and SCL-90-Somatization scales were also examined with two different exploratory analyses, exploratory factor analysis (EFA) and network analysis, separately in each of the three migrant groups. Network analysis is used to analyze associations that individual items (symptoms) have with each other. There are no specific recommendations for minimum sample sizes in network analysis (Borsboom & Cramer, 2013), and in previous studies sample sizes have ranged from a few hundred (e.g., Frewen, Schmittmann, Bringmann, & Borsboom, 2013) to tens of thousands of individuals (e.g., Fried, Epskamp, Nesse, Tuerlinckx, & Borsboom, 2016). The symptoms within a network are seen as mutually interacting and potentially reinforcing each other (i.e., insomnia may cause fatigue and worry, which reinforces insomnia). The results are presented in a visual network for each group, where the most central symptoms (i.e., those that have many connections with other symptoms) are presented in the middle of the network and the least central symptoms at the periphery (Borsboom & Cramer, 2013). The strength of the connections between symptoms is presented in lines varying in their thickness: the stronger the correlation between symptoms, the stronger the line

between them. In this dissertation study, positive correlations are displayed in green and negative correlations in red lines.

10 ETHICAL CONSIDERATIONS

Psychological research conducted in Finland should follow the guidelines for responsible conduct of research and procedures for handling allegations of misconduct in Finland (the RCR Guidelines; Finnish Advisory Board on Research Integrity, 2012), and the American Psychological Association's Ethical Guidelines (2010) that are pertinent to all psychological research. Since the potential participants in this research were selected and contacted using register information, and the research involved questions about sensitive issues (e.g., mental health) that might provoke psychological distress, the research required and obtained permission from relevant ethical committees. Concerning the Somali participants in Articles I and II, permission was granted by the Epidemiological Ethics Committee of the Hospital District of Helsinki and Uusimaa (HUS), Finland, as well as from the National Institute for Health and Welfare. Concerning the Finnish participants in Article I, the Epidemiological Ethics Committee of the Hospital District of Helsinki and Uusimaa (HUS), Finland, reviewed and approved the study protocol of the Health 2000 study. For the Article III, ethical approval was obtained from the Coordinating Ethical Committee of the Helsinki and Uusimaa Hospital Region (HUS), Finland.

Adequately informing participants about scientific research and obtaining their informed consent can be challenging when conducting research among illiterate and/or vulnerable populations. The APA Ethical Guidelines (2010, p. 6) states that psychologists should “[...] obtain the informed consent of the individual or individuals using language that is reasonably understandable to that person or persons [...]”. When studying migrant populations, it is crucial to offer information about the study in the participant's native language. In addition, it is necessary to address any lack of understanding regarding the research's purpose, methods, or use of results (i.e., what it actually means to participate in a study) which might stem from unfamiliarity with academic research or lack of formal education. Therefore, in addition to offering all possible participants pertinent information about the research in their native languages, the information was offered in an easy-to-understand way. Because of the low literacy rate among the older Somali participants in Articles I and II, they were also informed orally about

the study and they provided only oral informed consent. Besides illiteracy, oral informed consent was preferred because refugees and migrants often have past negative experiences with authorities that might affect their willingness to sign official documents.

In Article III, potential participants were sent an invitation letter describing the study rationale both in Finnish and in their native language. Participants were also informed about the research at the beginning of the interviews and health examinations, and they were given the opportunity to ask questions. After the participants were aware of the study's purpose and procedure, and their anonymity and voluntary participation in the study, they were asked to sign an informed consent document.

Probing participants about stressful issues and life situations may bring about psychological problems such as anxiety, worries, and sleeping difficulties. This possibility was taken into account by providing the participants, if necessary, with relevant information about where to seek help. As many Somali participants may not consider the Finnish mental health services as adequate or appropriate ways to deal with psychological distress and life problems (Tiilikainen & Koehn, 2011), the older Somali participants (Articles I and II) were offered guidance also in reaching traditional Somali healing options (i.e., Koran readings) if they so preferred. Concerning the participants in Article III, all interviewers and nurses were instructed to give advice on seeking help and relevant services, if the interviewers and nurses considered it necessary after the research visits.

RESULTS

11 SOCIODEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS

In Articles I and II, the mean age of the older Somali origin migrants was 57.9 years and 59% of the participants were women. Most of the participants reported having no formal schooling, and more than half were either unemployed or retired. Concerning ethnic identity, 88% of the participants reported identifying themselves either as Somali, Muslim Somali or African Somali, while 9% identified themselves as Black or Black African and 3% as Muslim.

The Finnish participants were matched to the Somali participants according to gender, age, education, and civil status and therefore, with respect to these variables, the Somali and Finnish participants were alike. However, whereas most of the Finnish participants (78%) were in full-time employment, this was true of only 28% of the Somali participants. The Somali participants' length of stay in Finland varied between one and 20 years, and on average they had lived in Finland for 9.4 years. Approximately half (48%) reported being illiterate and not knowing any Finnish, whereas 14 participants (11%) indicated having good Finnish language proficiency.

Overall, 17 participants (10 women and seven men; 13%) had been diagnosed with a psychiatric disorder and/or received psychiatric treatment because of a mental health problem. Altogether, there were 11 diagnoses of psychosis, six of depression, nine of anxiety, and one substance abuse problem, thus indicating co-morbid problems. Six of the respondents had been hospitalized and four had received medication for their condition. During the 12 months prior to the study, five participants (4%) had seen a doctor at least once because of psychiatric problems.

In Article III, slightly more than half of the Somali participants (56%) were young adults (18–34 years old) whereas the share of individuals between the ages of 55 and 64 years was 6%. More than half (57%) of the Somali participants were women, and approximately half (48%) had received primary or secondary education. Less than one-third (29%) reported having a job, and approximately half (52%) of the Somali participants reported speaking one of the national languages of Finland, Finnish or Swedish, well. The average time lived in Finland

was 12 years and the average age when coming to Finland was 22 years. Approximately half of the Somali participants had arrived in Finland as refugees or asylum seekers. Compared to the Somali participants in Articles I and II, the Somali participants in Article III were, on average, younger, had received more education, and reported having a better command of Finnish and/or Swedish.

In Article III, the Somali participants were compared to Russian and Kurdish origin migrants. Finnish nationality was the only background variable that was similarly distributed among Somalis, Russians, and Kurds. Somalis and Kurds had lower levels of education and employment than Russians, and they had come to Finland more often as refugees or asylum seekers. These group differences can be considered representative of Somali, Russian and Kurdish origin migrants in Finland and are thus characteristic of these migrant populations. With respect to group differences concerning age, gender, and civic status, inverse probability weights (IPW; Robins et al., 1994) were applied in order for the samples to be representative of Somali, Russian, and Kurdish origin populations in Finland.

The Maamu study included a question on national identity. Most Somali, Russian, and Kurdish origin migrants (when approximated with the use of inverse probability weights to calculate national identity among all the respondents in the Maamu study) considered themselves to be nationals of two or more countries or ethnic groups: 93% of Somali origin migrants considered themselves as nationals of Somalia and Finland; 82% of Russian origin migrants considered themselves as nationals of Russia and Finland; and of the Kurdish origin migrants, 38% considered themselves as Kurdish and as nationals of Finland, 32% as Kurdish and as nationals of Iraq, and 27% as Kurdish and as nationals of Iran¹⁶.

¹⁶ Other identified national identities were Russian and other unspecified national identity among Somali origin migrants; Ukrainian, Latvian, Kazakhstani, and Jewish identities among Russian origin migrants; and Iranian and Finnish, Iraqi and Finnish, and Canadian identity among Kurdish origin migrants.

12 MANIFESTATION OF DEPRESSIVE SYMPTOMS

The first aim of this thesis was to examine depressive symptom manifestation among older Somali origin migrants and Finnish-born individuals. Further, associations between difficulties in emotional processing (alexithymia), depressive symptoms, and somatization symptoms were analyzed in the two groups. As hypothesized, older Somali origin migrants manifested more somatic-affective depressive symptoms (e.g., insomnia and somatic preoccupation) than cognitive depressive symptoms (e.g., self-blame and feelings of guilt). Contrary to the hypothesis that Finns would manifest more cognitive depressive symptoms than somatic-affective symptoms, Finns, like Somalis, manifested more somatic-affective symptoms than cognitive depressive symptoms.

Comparisons of depressive symptoms between groups revealed that Somalis had higher levels of somatic-affective depressive symptoms than Finns, whereas Finns had higher levels of cognitive depressive symptoms than Somalis. These comparisons should, however, be interpreted cautiously since the depression scale's equivalence was not examined and only configural invariance (that is, the similarity of the factor structures across groups) was established. Therefore, in addition to the between-group comparisons, more reliable comparisons were done within each group which highlighted the salience of somatic-affective symptoms over cognitive depressive symptoms among both Somalis and Finns. Furthermore, the effect size of the within-group comparisons (i.e., the magnitude of the observed difference between somatic-affective and cognitive depressive symptoms in both groups) was large in the Somali group and intermediate in the Finnish group (Cohen's d for t -test results), whereas the effect sizes for the between-group comparisons (i.e., the magnitude of the observed difference between Somalis manifesting more somatic-affective symptoms and Finns manifesting more cognitive depressive symptoms) were small (Cohen's d for ANOVA test results).

With regard to gender and depressive symptom manifestation, Somali and Finnish women had higher overall levels of depression. Women also manifested more somatic-affective depressive symptoms than men in both groups. However, there were no gender differences in the manifestation of cognitive

depressive symptoms in either group¹⁷ (Article I). The effect size of the observed gender differences in somatic-affective depressive symptoms was intermediate among Somalis and small among Finns (Cohen's *d* for *t*-test results).

12.1 Difficulties in emotional processing, depressive symptoms, and somatization symptoms

Difficulties in emotional processing, conceptualized as alexithymia, were analyzed as a potential factor shaping symptom manifestation in relation to somatic-affective, cognitive depressive, and somatization symptoms. High levels of alexithymia (difficulties in identifying and describing feelings) correlated with high levels of somatic-affective and cognitive depressive symptoms in both groups. The associations between alexithymia and somatic-affective and cognitive depressive symptoms were stronger among Finns than among Somalis. High levels of alexithymia were also associated with high levels of somatization symptoms in both groups. The strength of the association was equally strong in the Finnish and the Somali groups. Finally, depression and somatization symptoms were associated in both groups, with the connection being stronger among Somalis than Finns (Article I). The effect sizes of the statistically significant results (Cohen's *d* for χ^2 test) were small.

¹⁷ This result differs from that published in Article I, where the role of gender in symptom manifestation was analyzed comparing Somalis and Finns and men and women using MANOVA. Here, when depressive symptoms were analyzed between men and women separately in the two groups, the difference in cognitive depressive symptoms between men and women did not reach statistical significance.

13 CAUSAL ATTRIBUTIONS OF MENTAL HEALTH PROBLEMS

The second aim of this thesis was to examine how older Somali origin migrants explain mental health problems and how these causal attributions are associated with the participants' demographic characteristics, diagnostic characteristics, and proxies of acculturation. Causal attributions were also analyzed as a potential mechanism affecting the manifestation of somatic-affective and cognitive depressive symptoms.

13.1 Older Somali origin migrants' perceptions of the causes of mental health problems

In total, the older Somali participants gave 336 answers¹⁸ about potential causes of mental health problems. The five most commonly reported single causes were: *jinn* spirits (invisible beings created by Allah); *maseyrka* (jealousy, especially that related to polygamous relationships); general unspecified problems and difficulties in life; poverty; and war. Uncommon single causes, which were reported only once or twice, were sorcery, curse, *welwel* (worry), *buufis* (sadness and distress related to migration experience), brain chemistry, and syphilis.

When these single causes were classified into five wider attribution categories, the most commonly endorsed attribution category was life experiences: over half (57%) of the older Somali origin migrants explained mental health problems with hard life experiences, such as war and poverty. Likewise, more than half (52%) of the participants endorsed interpersonal causes for mental health problems, such as loneliness and losing family members. Religious causes, such as *jinn* spirits or God's will, were stated as causing mental health problems by 41% of the participants. Psychological causes, such as excessive worrying and strong

¹⁸ Each participant was asked to state the three most important causes for mental health problems. Most reported three causes, whereas some only one or two potential causes.

emotional experience, and somatic causes, such as diabetes and substance use, were endorsed by 26% and 23% of the participants, respectively.

When causal attributions were analyzed in relation to demographic characteristics, diagnostic characteristics, and proxy indicators of acculturation, the results revealed that intraindividual attributions (including psychological and somatic causes) were more common among men than among women, while socioreligious attributions (including interpersonal and religious causes) were more frequent among women than among men. Life experience attributions were more common among participants with a university-level education than among those who had lower levels of education or no formal schooling. Intraindividual attributions were more common among those who had either no formal schooling or those who had a university education than among participants with vocational-level schooling. Thus, higher levels of education were not straightforwardly associated with certain types of causal attributions. Age and proxy indicators of acculturation were not associated with the causal attribution categories. Intraindividual attributions (psychological and somatic causes) were more common among participants with a psychiatric diagnosis and/or treatment history than among other participants (Article II). The effect sizes of the statistically significant results (Cohen's d for χ^2 test) were small for all the associations, except for the association between gender and intraindividual causal attributions which had an intermediate effect size.

13.2 Causal attributions of mental health problems and depressive symptom manifestation

Confirming the first hypothesis about causal attributions and depressive symptom manifestation, participants who attributed mental health problems to life experiences (e.g., war, poverty, and hardships in life), manifested fewer cognitive depressive symptoms (e.g., self-blame and feelings of guilt) than others (i.e., participants who did not attribute mental health problems to life experiences). However, when controlling for multiple comparisons (false discovery rate; Benjamini & Hochberg, 1995) the result became only marginally significant. The effect size of the result (Cohen's d for Mann–Whitney U test) was small. Contrary to the second hypothesis, life experiences attributions were not associated with somatic-affective depressive symptoms (e.g., insomnia and

somatic preoccupation). Finally, socioreligious attributions were not associated with either type of depressive symptoms (Article II).

14 MEASUREMENT OF DEPRESSION, ANXIETY, AND SOMATIZATION AMONG SOMALI, RUSSIAN, AND KURDISH ORIGIN MIGRANTS

The third aim of this thesis was to examine how well the Hopkins Symptom Checklist scale (HSCL-25; Derogatis et al., 1974), measuring depression and anxiety, and the Somatization subscale of the Symptom Checklist-90 (SCL-90-Somatization; Derogatis et al., 1973) perform among Somali, Russian, and Kurdish origin migrants. The theoretical three-factor structure (depression, anxiety, and somatization) of the HSCL-25 and SCL-90-Somatization scales could not be found in any of the three migrant groups. Neither weak nor strong measurement invariance could be established, thus indicating that the scales did not measure depression, anxiety, and somatization in a valid way in these migrant populations.

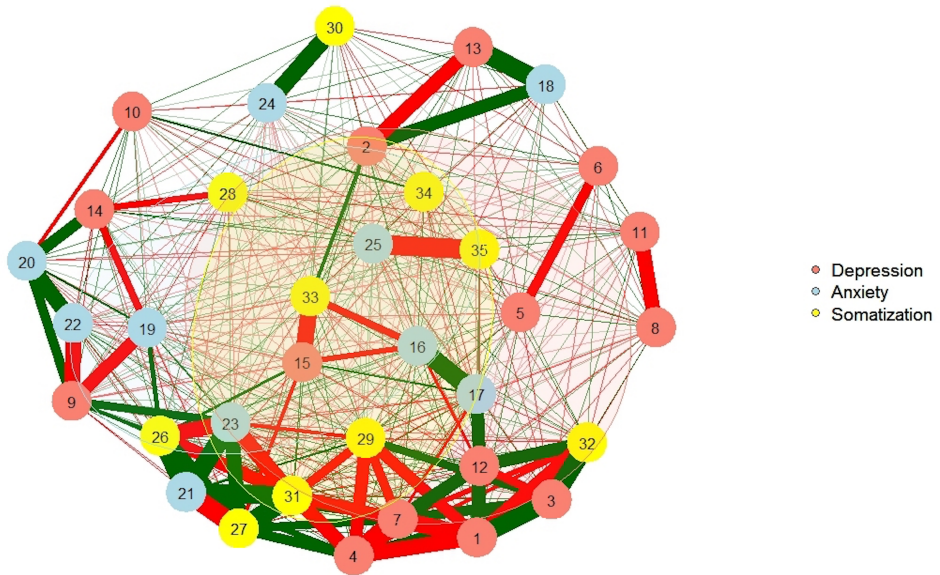
The two exploratory analyses, exploratory factor analysis and network analysis, suggested that the difficulties in establishing measurement invariance stemmed from a mismatch between the theoretical structure of the scales and the data set. First, exploratory factor analysis revealed that the optimal factor structure was different in the three migrant groups: the factor structure for the Somali group included five factors, whereas symptoms loaded onto three factors in the Russian and Kurdish groups. Although three factors emerged among Kurds and Russians, these factors did not match the theoretical three-factor structure of the HSCL-25 and SCL-90-Somatization scales. In the Russian and Kurdish groups, Factor 1 consisted of items indicating depressive mood and hyperarousal, although some items loaded differently in the two groups. In both groups, all the SCL-90-Somatization items loaded on Factor 2, and Factor 3 had only one depressive item (“poor appetite” among Russians and “worrying” among Kurds).

The five-factor structure in the Somali group differed the most from the theoretical three-factor structure of the HSCL-25 and SCL-90-Somatization scales and from the factor solutions in the Russian and Kurdish groups. Factors 1 and 4 in the Somali group comprised a mixture of depression, anxiety and

somatization symptoms. Factor 2 included depression and anxiety items. Factor 3 comprised three depression items: “feeling blue”, “feeling lonely” and “worrying”. Finally, the fifth factor consisted of one depressive symptom (“poor appetite”) and two somatization symptoms (“hot or cold spells” and “numbness or tingling in parts of the body”). Five of the symptoms did not load on any factor in the Somali group. In addition, the psychometric indicators suggested that the observed factor structures for each group fit poorly with the datasets, thus questioning whether depression, anxiety, and somatization symptoms can be grouped together in any number of factors in meaningful ways. Network analysis confirmed that depression, anxiety, and somatization symptoms overlapped in unique ways in each migrant group, making it difficult to separate symptoms into theoretical concepts (latent factors) of depression, anxiety, and somatization. In addition, visual inspection of the network analysis showed considerable variation between groups in terms of the most central symptoms (i.e., those in the middle of the figures) and the specific connections symptoms had with each other.

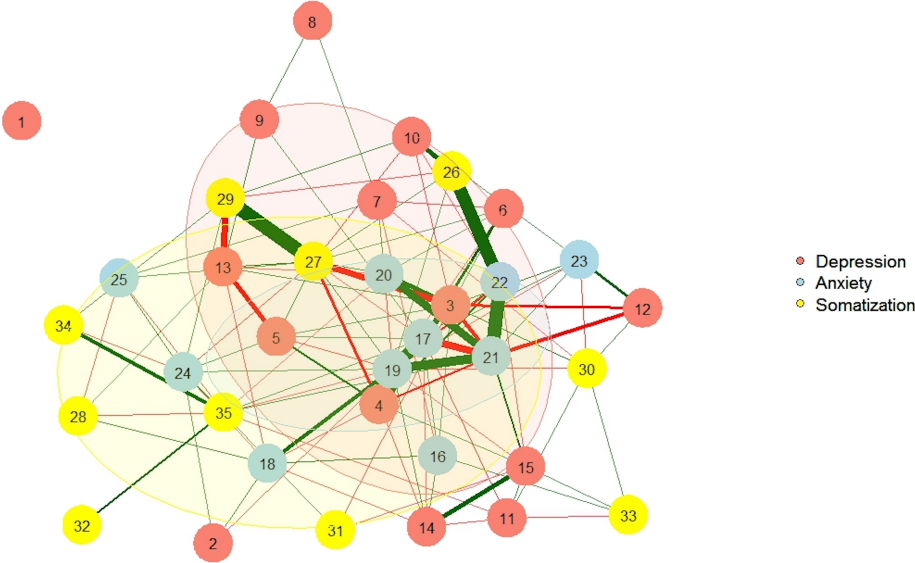
The symptom networks of each migrant group are presented in Figures 1-3. In the figures, red color nodes (circles) describe depressive symptoms, blue nodes anxiety symptoms, and yellow nodes somatization symptoms. Item numbers corresponding to specific symptoms in the networks are presented in Table 3. Green lines between nodes (symptoms) are positive correlations and red lines negative correlations. The thickness of the lines between the circles represents the strength of the correlations between symptoms; the stronger the correlation, the thicker the line. The position of the nodes in the network also reflects correlations between symptoms: strongly correlated symptoms are located in the middle of the networks and symptoms with weaker connections to other symptoms are in the periphery.

Figure 1. Network analysis of depression, anxiety, and somatization symptoms among Somali origin migrants.



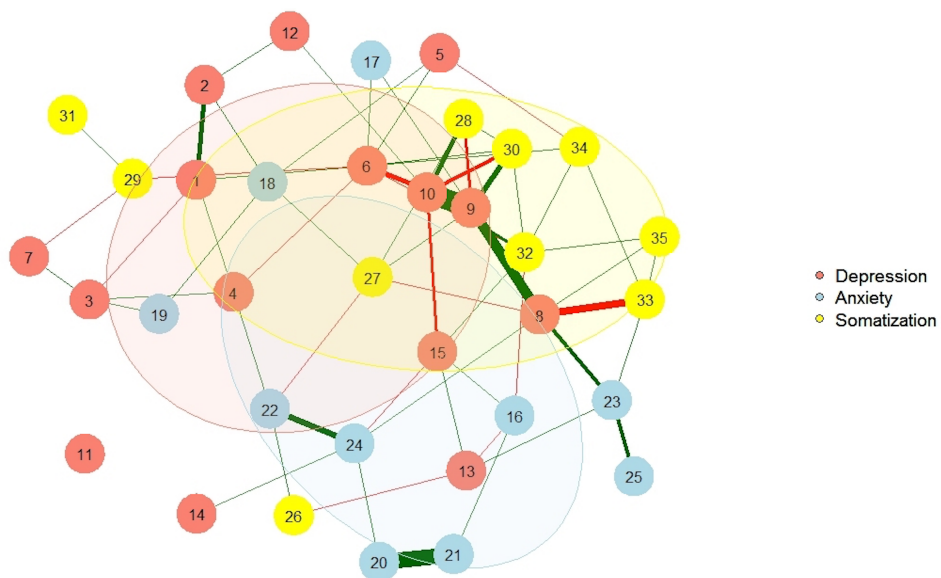
Note. Table 3 lists symptoms corresponding to the numbers in the network. Only Bonferroni-adjusted correlations above .20 are shown.

Figure 2. Network analysis of depression, anxiety, and somatization symptoms among Russian origin migrants.



Note. Table 3 lists symptoms corresponding to the numbers in the network. Only Bonferroni-adjusted correlations above .20 are shown.

Figure 3. Network analysis of depression, anxiety, and somatization symptoms among Kurdish origin migrants



Note. Table 3 lists symptoms corresponding to the numbers in the network. Only Bonferroni-adjusted correlations above .20 are shown.

Table 3. Items in the depression, anxiety, and somatization scales (HSCL-25 and SCL-90-Somatization)

Item	Subscale
1. Loss of sexual interest or pleasure	DEP
2. Feeling low in energy, slowed down	DEP
3. Thoughts of ending one's life	DEP
4. Poor appetite	DEP ¹
5. Crying easily	DEP
6. Feeling trapped or caught	DEP
7. Blaming oneself for things	DEP
8. Feeling lonely	DEP
9. Feeling blue	DEP
10. Worrying too much about things	DEP
11. Feeling no interest in things	DEP
12. Difficulty falling asleep or staying asleep	DEP ¹
13. Feeling hopeless about the future	DEP
14. Feeling everything is an effort	DEP
15. Feelings of worthlessness	DEP
16. Nervousness or shakiness inside	ANX
17. Trembling	ANX
18. Being suddenly scared for no apparent reason	ANX
19. Feeling fearful	ANX
20. Heart pounding or racing	ANX
21. Feeling tense or keyed up	ANX
22. Spells of terror or panic	ANX
23. Feeling restless, not being able to sit still	ANX
24. Headaches	ANX ²
25. Faintness, dizziness, or weakness	ANX ²
26. Pains in heart or chest	SOM
27. Pains in lower back	SOM
28. Nausea or upset stomach	SOM
29. Soreness of muscles	SOM
30. Trouble getting your breath	SOM

31. Hot or cold spells	SOM
32. Numbness or tingling in parts of your body	SOM
33. A lump in your throat	SOM
34. Feeling weak in parts of your body	SOM
35. Heavy feelings in your arms or legs	SOM

Notes. DEP = Hopkins Symptom Checklist-25 (Derogatis et al., 1974), depression subscale;

ANX = Hopkins Symptom Checklist-25 (Derogatis et al., 1974), anxiety subscale;

SOM = Symptom Checklist-90 (Derogatis et al., 1973), somatization subscale.

¹ Item is included in the depression subscale of the HSCL-25, but not in the depression subscale of the SCL-90.

² Item is included in the anxiety subscale of the HSCL-25, but not in the anxiety subscale of the SCL-90.

Somali origin migrants differed from the Russian and Kurdish groups in their endorsement of depression and anxiety symptoms as the most central symptoms of distress, and in the specific ways symptoms were interconnected. On average, Somali origin migrants endorsed fewer depressive and anxiety symptoms than Russians or Kurds. Among Somalis, the most central symptoms in the network involved a mixture of depression, anxiety, and somatization, whereas in the Russian group most central symptoms were a combination of anxiety and depressive symptoms, and in the Kurdish group depressive and somatization symptoms. Somalis also differed from the Kurdish and Russian groups in that the number of connections between symptoms, including negative ones, was the highest. However, some symptoms were very seldom reported in the Somali group. For example, 11 of the 35 symptoms were reported as never experienced by 90% or more of the Somali participants. All of these 11 symptoms were questions intended to measure depression and anxiety. The lowest symptom endorsement was for the item relating to suicidal thoughts: 98% of the Somalis indicated never having suicidal ideas. Suicidal ideation was almost equally as rare among Russian origin migrants: 96% reported never having suicidal thoughts, while the same was true of 82% of the Kurdish origin migrants. Connections between different symptoms were stronger among Somalis than among Kurds or Russians, suggesting that symptoms overlapped more in the Somali group. It is also noteworthy that in each of the Russian and Kurdish groups there was one depressive symptom that was not associated with any other symptom in each network: “loss of sexual interest“ (number 1 in the figure) among Russians, and “feeling no interest in things” (number 11 in the figure) among Kurds (Article III).

DISCUSSION

In comparative (cross-)cultural psychology, the question remains as to whether differences that are commonly found across ethnic and linguistic groups regarding specific psychological outcomes (i.e., depressive symptom manifestation) can be explained by cultural factors, such as social norms about expressing emotions, cultural values, and illness conceptions, or by sociodemographic characteristics such as literacy and education which may differ in the compared groups (Poortinga, 2015). This thesis aimed to disentangle depressive phenomena by studying older Somali origin migrants (over 50 years of age) as well as younger Somali origin migrants (between 18-64 years of age), and by comparing Somali migrants to Finnish-born individuals and to Russian and Kurdish origin migrants using population-based data. Depressive symptoms were also examined by focusing on the role of gender, difficulties in emotional processing (alexithymia), and causal attributions of mental health problems.

The results of this research revealed both similarities and differences between Somali migrants and the other ethnic groups regarding depressive symptom manifestation. Somatic-affective depressive symptoms prevailed over cognitive depressive symptoms both among Somalis and Finns, and women in both groups reported higher levels of depression than men. Reports of depressive symptoms were discrepant between the two samples of Somali origin migrants, with older Somalis manifesting relatively high levels of depressive symptoms whereas the younger Somali adults rarely manifested depressive or anxiety symptoms. Differences also emerged between Somali, Russian, and Kurdish origin migrants in the manifestation and co-occurrence of depressive, anxiety, and somatization symptoms. Somali origin migrants manifested fewer depression and anxiety symptoms than Russian and Kurdish origin migrants, and the symptoms of depression, anxiety, and somatization overlapped among Somalis in particular. Moreover, the connections between depressive, anxiety, and somatization symptoms were unique in each of the three migrant groups, and the different symptom patterns in the groups suggested challenges in the use of non-adapted psychiatric scales in measuring depression, anxiety, and somatization among Somali, Russian, and Kurdish populations in Finland.

Besides symptom manifestation, the ways in which individuals make sense of psychological distress and suffering can vary greatly across sociocultural groups. One aim of this thesis was to better understand Somali origin migrants' views on the causes of mental health problems by examining these causal attributions in relation to Somali participants' age, gender, education, acculturation proxies (e.g., the length of stay in Finland), and their previous contact with psychiatric services. In general, older Somalis emphasized adverse life experiences, such as war and poverty, and social and religious factors, such as loneliness and *jinn* spirits, as the most important determinants for mental health problems, whereas genetic and personality factors were absent. Perceived conceptions about the causes of mental health problems were relatively stable; for example, length of stay in Finland and having Finnish nationality were not associated with the older Somalis' views on mental health. However, Somali women and men, and individuals with a history of psychiatric contact, emphasized different causes for mental health problems than others. The results also indicated that perceived causes of mental health problems were associated with the manifestation of specific depressive symptoms. Together, the results of this dissertation and the literature in general suggest that mental health phenomena cannot be understood without considering the role of sociodemographic and cultural factors in shaping symptom manifestation, and that the research methods used are central in our understanding of mental health in global and multicultural contexts.

15 'NON-WESTERN SOMATIZATION' AND 'WESTERN PSYCHOLOGIZATION' REVISITED

In this thesis, the manifestation of depressive symptoms was examined among older Somali origin migrants and Finnish-born comparisons. The results revealed that Somali participants manifested higher levels of somatic-affective depressive symptoms (e.g., insomnia and poor appetite) than Finns and that Finns manifested more cognitive depressive symptoms (e.g., feelings of guilt and self-blame) than Somalis. The results were, therefore, in line with previous findings reporting variation in the manifestation of depressive symptoms across cultural groups. Somatic symptoms of depression have been found to be more salient than psychological or cognitive depressive symptoms among groups of African, Asian, and Latin American descent, whereas psychological or cognitive symptoms are typical of depression in groups of North American or Western European origin (Halbreich et al., 2007; Marsella, 1980; Weissman, 1996). Subsequently, somatization (experiencing psychological distress in bodily pains and discomforts) is commonly considered to be a mental health characteristic of many non-Western populations.

Nevertheless, when depressive symptom manifestation was analyzed within the Somali and Finnish groups, the results showed that somatic-affective depressive symptoms were more common than cognitive depressive symptoms in both groups. Thus, the question arises as to whether Somalis and Finns were more alike than they were different in their depressive symptom manifestation. The interpretation of these results is not straightforward as it depends on the chosen methodological criteria which affect the validity of research findings. Strict statistical criteria require that all group level comparisons, such as comparing depressive symptoms between Somalis and Finns, should be based on fully equivalent methods (i.e., questionnaires should have strong measurement invariance) or the scales' items should be shown to function identically (i.e., by testing for differential item functioning). If these methodological criteria are not met, the comparisons lack mathematical foundation and thus may not be meaningful. In this dissertation, full equivalence of the Beck Depression Inventory (BDI; Beck et al., 1961), i.e., identical functioning of the scale between

Somalis and Finns, was not established, meaning that results regarding group comparisons should be interpreted cautiously. Instead, more emphasis should be put on the results suggesting similarities in depressive symptom manifestation among both Somalis and Finns.

Furthermore, this thesis analyzed difficulties in emotional processing (alexithymia) as a plausible factor in explaining the commonly reported cross-cultural differences in somatic manifestations of distress. Difficulties in emotional processing were associated with depressive symptoms (somatic-affective and cognitive) and somatization symptoms among both older Somalis and Finns. These results were in line with other research showing that difficulties in emotional processing are associated with higher levels of depression and somatic manifestations of distress in various populations (Bamonti et al., 2010; Honkalampi et al., 2000; Sayar et al., 2003; Waller & Scheidt, 2006). However, difficulties in emotional processing were not associated with somatic-affective depressive symptoms or somatization symptoms in a way that would indicate the African origin Somali migrants' greater tendency to somatization. On the contrary: the strength of the associations between difficulties in emotional processing and somatic-affective as well as cognitive depressive symptoms were stronger in the Finnish group than in the Somali group.

The results therefore suggest that a personality characteristic involving difficulties in emotional processing could play a more important role for depression among Finns than among Somalis. This manner of interpretation is in line with some studies indicating that emotional experiences are more important for well-being in societies and groups with individualistic emphasis, such as Finland (e.g., Schwartz, 2006), whereas social factors could be more central determinants for well-being among sociocultural groups that emphasize collectivistic values, such as Somalis (e.g., Koshen, 2007). For example, a study comparing emotional experiences and social factors in relation to well-being in 41 countries found that the connection between an individual's emotional state and well-being was strongest in Finland and weakest in Nigeria (Suh, Diener, Oishi, & Triandis, 1998). Social factors, such as obeying social norms, were instead more important for well-being in countries with a collectivistic orientation. The older Somali participants in this dissertation study had similar views about mental health; they highlighted life events and social causes as important factors for well-being, whereas personality characteristics were not seen as important determinants of mental health.

Although the results suggested that difficulties in emotional processing (alexithymia) and depressive symptoms were more strongly associated among Finns than Somalis, the association between difficulties in emotional processing and somatization symptoms did not differ between the groups. This result indicates that difficulties in emotional processing should not be considered as predisposing Somalis to somatization more than Finns. Somatic manifestations of distress, which are reported to be common among Somalis, are therefore likely to be due to other factors than individual difficulties in focusing on emotional experience. Plausible explanations are, instead, cultural ways of communicating and experiencing distress that highlight bodily experiences and manifestations of emotional suffering. This is in line with Somali medicine's views on mental and physical well-being as inseparable (Slikkerveer, 1990, p. 167) and Somali women in Finland reporting that emotions are located in the heart and liver (Tiiilikainen, 2013, p. 157).

Furthermore, in this dissertation, the association between depressive and somatization symptoms was stronger among older Somalis than Finns (Article I) and symptoms of depression, anxiety, and somatization overlapped considerably among Somali origin adults (Article III). Among Somali origin adults, it was particularly challenging to divide symptoms into groups of depression, anxiety, and somatization. Whereas among Russians and Kurds somatization symptoms emerged as a separate group (latent factor) from the depression and anxiety symptoms, in the Somali group somatization symptoms did not cluster together separately from depressive or anxiety symptoms. The co-existence of depressive, anxiety, and somatization symptoms among Somalis is also in line with other research suggesting that the manifestation of non-psychotic psychiatric symptoms in Somali communities does not fit into the categorical division of mental health disorders in the Western psychiatric framework (Kroll et al., 2011). The overlap or co-morbidity of symptoms also concurs with Somali mental health notions that do not differentiate between different types of mental health suffering (i.e., seeing depressive or anxiety as qualitatively different) but rather in the amount of distress an individual has (Johnsdotter et al., 2011). Together, the results suggest that somatic manifestations of distress among Somalis can be seen as a way, or a 'cultural script', of experiencing distress (Ryder & Chentsova-Dutton, 2012; Zhou et al., 2016).

15.1 Theoretical and cultural considerations for depressive symptom manifestation

The results of this dissertation suggest that defining depression and anxiety as separate categories with specific symptom profiles, and differentiating them from somatization, is challenging. Mood, anxiety, and somatization symptoms occurred together in different combinations among Somali, Russian, and Kurdish origin migrants, supporting instead the notion that depressive symptoms greatly overlap and co-exist with anxiety and somatization symptoms. These results concur with the increasing number of studies criticizing the categorical approach to mental health where psychiatric problems are seen as qualitatively distinct categories from one another, and where an individual either suffers from a condition or does not (i.e., meets the criteria of the condition or does not; Haslam, Holland, & Kuppens, 2012; Kotov et al., 2017; Miller, Fogler, Wolf, Kaloupek, & Keane, 2008). Instead, a more suitable way to conceptualize mental health problems could be found in a dimensional approach, where individuals suffering from mental health problems are seen as differing in the extent of their distress (e.g., in their general amounts of negative affectivity, somatic sensations, or fearful reactions) and in the different symptom combinations they have. A dimensional approach better explains the considerable heterogeneity of depressive symptoms among depressed individuals (Fried & Nesse, 2015a) and the commonly reported high levels of co-morbidity between depression, anxiety, and somatization (Kessler et al., 2003; Saraga et al., 2013), as it allows for flexibility in the types of symptoms and symptom combinations an individual or a sociocultural group may present. Instead of differentiating between problems such as depression and anxiety, the larger psychopathological categories in the dimensional approach can be conceptualized as, for example, internalizing (e.g., mood and anxiety problems), externalizing (e.g., substance use disorders), and psychotic problems (e.g., distorted thought and loss of contact with reality; Wright et al., 2013). In addition, the term *common mental disorders* (CMD), which describes affective, anxious, and somatic manifestations of distress (Patel & Stein, 2015), corresponds conceptually to internalizing problems.

A shift away from categorical classification systems is sometimes objected to because specific diagnoses are seen as helpful in communication regarding mental health (i.e., a shared understanding of what is meant by the term *major depressive disorder*) or as helpful in finding the underlying causes of different disorders. However, disorders such as depression are heterogeneous in nature and there are

many different ways to meet the criteria for major depressive disorder (Zimmerman, Ellison, Young, Chelminski, & Dalrymple, 2015). This heterogeneity both complicates our understanding of what it actually means if an individual is diagnosed with major depressive disorder and poses challenges for the search for specific causes (or, for example, biomarkers of depression), because the variation and heterogeneity of depressive phenomena is not erased by maintaining categorical diagnostic systems. Furthermore, there is a risk that categorical diagnostic systems, together with limited resources in psychiatric services in Finland (Parpola, 2013, pp. 196–200), lead to greater focus on diagnoses than on individuals in organizing and providing mental health services. While dimensional classification systems do not resolve the problem of heterogeneity of mental health problems, they can be seen as an improvement on categorical classification systems due to their better reflection of reality. A shift away from categorical diagnoses could also benefit the treatment of mood disorders if individual life trajectories and subjective experiences were to guide the focus of treatment more than the diagnoses these individuals receive.

Besides a lack of differentiation between depressive, anxiety, and somatization symptoms, the research described in this dissertation observed differing symptom patterns between Somali, Russian, and Kurdish origin migrant groups, highlighting sociocultural variation in the manifestation of these symptoms. The unique ways symptoms can relate to each other in different populations has been explained, for example, by the interpretations individuals in different sociocultural groups make of their symptoms and bodily sensations, such as numbness or dizziness (Kirmayer & Sartorius, 2007). When bodily sensations are perceived as indicators of a potentially dangerous state, such as stroke, they can provoke anxious thoughts and are thereby associated with anxiety symptoms, whereas more benign interpretations are less likely to be associated with anxious symptoms. The interpretations and culturally constructed knowledge about symptoms can therefore shape subjective suffering differently one group as compared to another.

Sociocultural context may also shape symptom manifestation by creating cultural idioms of distress; that is, meaningful symptoms that allow individuals to communicate their distress to others. Meaningful symptoms in one context are not necessary meaningful in another context. For example, the depressive symptom of guilt may be more meaningful in sociocultural groups that highlight individual responsibilities and an individual's role in illness, such as personality traits or cognitive biases in causing depression. In Somali communities, causes of

mental health problems are commonly located outside the individual, in social relationships or the surrounding living environment (Guerin et al., 2004), and therefore, individual-focused symptoms placing the person in the center of suffering may not be appropriate ways of experiencing and communicating distress. Indeed, the results of this thesis indicated that Somali origin migrants' mental health conceptions could play a role in shaping depressive symptom manifestation; older Somalis who explained mental health problems with stressful life experiences, such as war and poverty, manifested fewer cognitive depressive symptoms, such as guilt and feelings of worthlessness, than Somali participants who did not explain mental health problems with life experiences. The results therefore suggest that causal attributions emphasizing factors outside the individual are related to a lesser degree of negative self-appraisals. Attributing psychological suffering to external factors can instead shift an individual's attention towards symptoms that better fit this type of cultural script, such as general discomforts or thoughts about punishment or persecution.

The fact that older Somalis emphasized life experiences (i.e., external causes) as important causes of mental health problems in general could also explain the salience of somatic-affective symptoms over cognitive depressive symptoms. The finding that older Finns manifested somatic-affective depressive symptoms more than cognitive depressive symptoms is interesting; one could expect that the general individualistic emphasis and explanation models of Western psychiatry focusing on the role of the individual in illness onset, which can be considered typical in Finnish society, could amplify cognitive depressive symptoms and negative self-centered symptoms in depression among Finns. However, as the perceived causes of mental health problems among older Finns were not examined, it is possible that they too emphasized social causes and difficult life events as causing mental health problems. Indeed, these social and external factors have been found to be the most common explanations that lay individuals across different living environments have about the causes of mental health problems (Hagmayer & Engelmann, 2014). It is also worth mentioning that as the Finns were matched to the Somali participants according to Somali participants' age, gender, education, and civic status, Finnish and Somali participants were similar with respect to these factors. This could also explain the similarity of their depressive symptom manifestation. Furthermore, the fact that both groups were non-clinical samples could be associated with the lower levels of cognitive depressive symptoms in both groups. For example, the symptom of feelings of worthlessness (classified as a cognitive depressive symptom in this

dissertation) has been found to be a good indicator of severe depression among American individuals (Velázquez et al., 2017). The low levels of cognitive depressive symptoms among Finns could therefore reflect the participants' generally low levels of depression. However, more research with more robust methods is required to determine the role of mental health conceptions, such as causal attributions of mental health problems, and symptom manifestation among different sociocultural groups.

15.2 Sociodemographic considerations for depressive symptom manifestation

15.2.1 Gender and depressive symptom manifestation

Besides ethnic or cultural group membership, sociodemographic factors, such as gender, age, and education, may also shape symptom manifestation. In this dissertation, gender was an important factor in depressive symptom manifestation as both Somali and Finnish origin women manifested more somatic-affective depressive symptoms (e.g., fatigue, insomnia, and low mood) than men. However, men and women did not differ in the manifestation of cognitive depressive symptoms (e.g., feelings of guilt or self-blame). These results can be attributed to the fact that the somatic-affective category included, besides somatic symptoms, emotional manifestations of distress, such as feelings of sadness, which can be more common among women than men. For example, a study among Pashtun women in Afghanistan found that emotional responses to distress, such as sadness or crying, were more gender-specific than social or somatic symptoms, such as disruptions in social functioning or pains and discomforts (Ventevogel et al., 2007). Other studies have reported women as showing more 'atypical' depressive symptoms, such as excessive fatigue and somatization symptoms, than men (e.g., Angst et al., 2002; Kim et al., 2015; Moskvina et al., 2008). Higher reports of somatic-affective symptoms found amongst women in this dissertation may therefore be due to either more prominent affective depressive symptoms, or somatic symptoms, or both.

The results also showed that women manifested more depressive symptoms than men when all kinds of depressive symptoms were analyzed (i.e., when somatic-affective and cognitive depressive symptoms were summed together).

Higher depression rates in women than in men is a common finding in different populations, but there is some research available showing no gender differences (Onuyt et al., 2009) or the opposite tendencies in some African societies with women reporting less distress than men (Patel & Stein, 2015). These conflicting findings question the role of hormonal or other biological factors as a sole causal factor of depression among women, and rather point to social factors and life difficulties as also predisposing women to depression more than men. The fact that both Somali and Finnish women reported higher levels of depression than men is interesting, as older Somali and Finnish women's lives in Finland can be seen as rather different; many older Somali women are illiterate, without formal schooling, unemployed, and lack, for example, the necessary language skills needed to participate in the Finnish society, whereas this is generally not true of Finnish women. Nevertheless, women's social roles (e.g., women being in charge of child care and most domestic chores at home besides paid work), lower salaries, and more precarious position in the labor market can be seen as posing a strain on women in Finland (Julkunen, 2010; Miettinen & Rotkirch, 2012, pp. 57–74).

The lower rates of depressive symptoms among men can also reflect men's 'atypical' depressive symptoms. Oliffe and Phillips (2008) have suggested that men's depressive symptom profile includes symptoms such as anger and risky behaviors, which could at times impede the recognition of depression among men. In this dissertation, it is also possible that the depression scale used (Beck Depression Inventory; BDI) performed differently among men and women, which could affect the validity of comparisons of depressive symptoms between men and women. For example, in a study among Afghan patients, Ventevogel et al. (2007) found that the depression and anxiety subscales of the Hopkins Symptom Checklist-25 (HSCL-25) performed worse among women than among men, and that the general cut-off score to detect depression, 1.76, was too low for women and too high for men. For women, the optimal cut-off for recognizing depression was 2.25, whereas for men the optimal cut-off was 1.50. As scale invariance with respect to gender was not examined in this dissertation, it is unclear whether the observed gender differences in depressive symptoms reflect true levels of depression among men and women, or whether the BDI instrument was more sensitive to detection of depressive symptoms among women than among men. In mental health research, scale validity should therefore be examined according to both sociocultural group and gender.

15.2.2 Age and depressive symptom manifestation

Besides gender, age can shape depressive symptom manifestation. The salience of somatic-affective depressive symptoms over cognitive depressive symptoms among older Somalis and Finns may reflect the fact that these symptoms are reported as becoming more common as individuals age, whereas cognitive symptoms such as self-blame become less common (Christensen et al., 1999; Gallo et al., 1994; Gallo et al., 1998). Researchers have suggested that a depletion syndrome, including symptoms such as social withdrawal, apathy, and fatigue, could be characteristic of depression in older age due to a decrease in older individuals' active roles in society and an increase in social isolation and loneliness (Adams, 2001). In addition, symptoms such as fatigue and somatic preoccupation may reflect physical changes that commonly occur with aging.

In general, Somali origin migrants aged over 50 reported relatively high levels of depressive symptoms (Article I) whereas Somali origin migrants between 18 and 64 years old reported only a few depressive or anxiety symptoms (Article III). This difference could be due to older Somalis (50-79 years old in Article I) having a higher risk for mental health problems than the younger participants, of whom only 6% were aged between 55 and 64 years (Article III). This finding concurs with previous research reporting that older refugees are particularly at risk for mental health problems. For example, older individuals' poor physical health and lack of social support in the new home country may increase their predisposition to depression when compared to younger individuals (Gele & Harsløf, 2012; Shah, 2009; Silveira & Allebeck, 2001).

However, the younger Somali origin adults also reported depressive and anxiety symptoms seldom when compared to Russian and Kurdish origin migrants (Article III), which suggests that age is likely not the sole relevant explanatory factor for the discrepant results of the two Somali samples' reports of depression. The salience of somatic manifestations of distress and low reports of psychological distress in some Somali populations have been explained by mental health stigma in Somali communities (e.g., Cavallera et al., 2016). It is therefore possible that the stigma associated with mental health problems might have prevented the younger Somali adults from reporting psychological distress (depression and anxiety symptoms). Nevertheless, one can also question whether the specific depression or anxiety items that the Somali migrants seldom reported having (e.g., "feeling no interest in things" [depression item that 91% reported never having] or "feeling restless" [anxiety item that 95% reported never having];

HSCL-25, Derogatis et al., 1974) are seen as stigmatizing or indicators of mental illness. It should be remembered that, in Somali communities, mental health stigma commonly relates to severe psychiatric conditions that resemble psychotic-level disturbances, whereas depression-like experiences are not usually considered to be mental health problems but rather normal reactions to adversities in life. As such, it could also be that the rarely reported depressive and anxiety symptoms (Article III) correspond to low levels of actual experienced distress. Another study using the same data found that Somali origin migrants had a more positive subjective view of their overall health, and considered their quality of life better, than Russian or Kurdish origin migrants (Castaneda et al., 2012).

It has been suggested that the large, supportive social community of Finnish Somalis could be a protective factor against health problems. In addition, strong religious commitment among Somalis may also protect their mental health. For example, a study using the same data as Articles I and II found that strong religious commitment buffered against PTSD and somatization symptoms among older Somalis who had experienced high levels of traumatic events (Mölsä, Kuittinen, Tiilikainen, Honkasalo, & Punamäki, 2017). Interestingly, religious adherence was not a protective factor against depressive symptoms among these older Somalis. The role of religious commitment could nevertheless play an important role in protecting younger Somalis from depression, and future studies should focus on examining levels of religious adherence and mental health in individuals of different ages. For example, how observant are young Finnish Somalis, and does religious observance and practice protect their mental health?

Younger individuals may also have other factors promoting their resilience. For example, bi-cultural identity (that is, feeling part of two communities) is associated with better well-being and adjustment than monoculturalism, such as feeling either a Somali or a Finn (Hong, Zhan, Morris, & Benet-Martínez, 2016). Compared to older Somalis (Article I), younger Somali adults (Article III) reported having a better command of Finnish, higher levels of education, and had stayed on average two years longer in Finland. In addition, the majority of Somali, Russian, and Kurdish origin participants identified themselves as nationals of two or more countries or ethnic groups, and not, for example, as solely Somalis or Finnish. In contrast, the older Somalis in Articles I and II considered themselves as mainly Somalis and/or as Muslim Somalis. The differences in Somali participants' background can therefore be indicative of

younger Somalis' better knowledge of and more active role in Finnish society, and could in part explain the differences in reported distress.

16 WHAT ARE CORE SYMPTOMS OF DEPRESSION?

The variation in depressive symptom manifestation poses a challenge for defining and diagnosing depression, as the diagnosis is based on symptom presentation. Central criteria used in the definition, diagnosis, and measurement of depression have historical roots in the works of Kraepelin (Mondimore, 2005) and Freud (1917) that are reflected in the criteria outlined in, for example, the Diagnostic and Statistical Manual of Diseases (DSM-5; American Psychiatric Association, 2013a). In addition, commonly used psychiatric scales for measuring depression, such as the Beck Depression Inventory (BDI; Beck et al., 1961) and Hopkins Symptom Checklist-25 (HSCL-25; Derogatis et al., 1974) as used in this dissertation, were developed in North America approximately four decades ago and have not changed considerably since (Fried et al., 2016). Feelings of guilt and worthlessness as a central part of depression were already presented by Freud in the early 20th century (Freud, 1917), and negative ideas about the self have been used to qualitatively differentiate between normal grief and pathological depression (American Psychiatric Association, 2013b). Similarly, the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) states that, for depressive episode, “self-esteem and self-confidence are almost always reduced and, even in the mild form, some ideas of guilt or worthlessness are often present” (WHO, 2016; Chapter V, Mental and behavioural disorders; F32 Depressive episode). However, cultural studies have long shown that feelings of worthlessness and low self-esteem are not necessarily salient symptoms of depression worldwide (Al-Issa, 2000; Binitie, 1981; Marsella, 1980).

Besides low self-esteem, guilt, and feelings of worthlessness, suicidal ideas have also been stated as differentiating depression from grief (American Psychiatric Association, 2013b). In this dissertation, 98% of Somali participants (Article III) reported never having suicidal ideas. This finding could reflect the common interpretation that the Koran prohibits suicide (Bentley & Owens, 2008). However, research is inconclusive as, for example, one study among Somali refugees did not find an association between depression, anxiety, and

suicidal ideas (Bhui et al., 2003), while another study reported suicidality levels as high as 9% among Somali refugees (Bhui et al., 2006). It is also noteworthy to mention that, in this dissertation, there were differences between Somali and Kurdish origin migrants in their reports of suicidal ideas, in spite of the fact that both groups largely comprise people of Muslim faith. Of the Kurdish origin migrants, 16% reported having suicidal thoughts at least sometimes. The relatively high reports of suicidal thoughts among Kurdish origin migrants may reflect their high levels of experienced distress. For example, Mofidi et al. (2008) found that suicidal thoughts were not unusual among Iranian Kurds suffering from poor mental health. Poor mental health among Kurds may be due to the complicated political context and armed conflict affecting the Kurdish population over several decades. Nevertheless, this dissertation did not compare distress levels between Somali, Russian, and Kurdish origin migrants, because statistically calculating and comparing mean scores of mental distress between these groups was infeasible due to lack of invariance of both the HSCL-25 scale and the Somatization subscale of the Symptom Checklist-90 (SCL-90-Somatization; Derogatis et al., 1973). While it is unclear whether religious factors could reduce suicidal ideation among some individuals, or only affect their willingness to disclose suicidal thoughts, it is noteworthy that suicidal ideas can be a taboo in Somali and other Muslim communities and therefore not always reliable indicators of depression severity in these populations. Besides religion, the population-based samples used in this dissertation might also affect the low reports of suicidal thought among Somalis and Russians, of whom 96% reported never having suicidal thoughts.

Historically, failure to identify somatic symptoms of distress and the absence of self-reproach led to the conclusion that depression in Africa was non-existent (Carothers, 1953). A narrow definition of depression where a few symptoms, such as guilt or suicidal thought, are selected as core symptoms of depression risks dismissing the potential variation in symptom patterns across different sociocultural groups. This type of narrow categorical definition could result, unintentionally, in the belief that depression is specific to only some groups, mainly found in Northern America and Europe; regions where only around 16% of the world's population live (United Nations, Department of Economic and Social Affairs, Population Division, 2017).

Instead of low self-esteem, self-reproach, or suicidal ideas, several empirical studies have suggested that feelings of sadness could be a key component of non-psychotic, depression-like mood disorders both in 'Western' and 'non-Western'

contexts (Fried & Nesse, 2014; Fried et al., 2016; Ventevogel et al., 2013). Depressed mood (or irritable mood, or loss of interest or pleasure in daily activities) is also a required symptomatic criterion among at least five of the nine other symptoms in DSM-5 (American Psychiatric Association, 2013a). However, the validity of the symptom criteria presented in the DSM-5 has been questioned. For example, using a network approach, Fried et al. (2016) found that depressive symptoms presented in the DSM-5 are not better or more relevant indicators of depression than symptoms that are not presented in the DSM-5. In addition, commonly used depression scales, such as the BDI or HSCL-25, each have only one item assessing mood (e.g., “depressed mood” in BDI; “feeling blue” in HSCL-25). In evaluating the severity of depression, clinical cut-off scores (based on sum scores) are used where all items are assigned the same value regardless of their theoretical or clinical relevance (Fried & Nesse, 2015b). This practice reflects the idea that all depressive symptoms are indicators of a latent, underlying depression construct that manifests itself through various different symptoms, and that all symptoms are equally important indicators of depression.

However, assigning more relevance to certain depressive symptoms than others has its challenges, as the more relevant symptoms can vary from one context or sociocultural group to another. In this thesis, depressed or sad mood was not an equally central symptom for depression in all the studied migrant groups when examined via network analysis. In the Kurdish group, the item “feeling blue” (HSCL-25 scale) was among the most central symptoms in the symptom network. In contrast, in the Russian and Somali groups, “feeling blue” was not a central symptom. It had very few, weak connections to all other symptoms in the Russian group, and in the Somali group it was not associated with any other depressive symptom. Moreover, in the Kurdish group, the depressive symptom of “feeling no interest in things” was not associated with any other depressive, anxiety, or somatization symptom, although loss of interest in daily activities is a key criterion for major depressive disorder in DSM-5 (American Psychiatric Association, 2013a). Sad or depressed mood or loss of interest may not be salient symptoms of depression-like experience in all sociocultural groups, or when depressive symptoms are assessed in population-based samples.

In the search for potential key symptoms of depression, attention should be paid to how depression is defined (e.g., as a Western-defined disease category or as more general non-psychotic mood problems) and in the variation in symptom profiles according to sociodemographic characteristics and the severity of

depression. Cross-cultural comparisons across individuals with differing levels of distress are needed, but considerations for participant selection are crucial, as patient samples may distort the symptom profiles to match Western psychiatric taxonomies and therefore obscure potential cross-cultural variation in symptom manifestation.

17 RELIGIOUS AND SOCIOCULTURAL CONSIDERATIONS FOR PERCEIVED CAUSES OF MENTAL HEALTH PROBLEMS

Conceptions about what causes mental health problems, and what kind of treatment is efficacious, vary in time and across different sociocultural groups and living environments. However, differences may also be present between individuals according to their gender, age, education, and personal experiences of mental health problems. Moreover, in the context of migration, mental health conceptions can shift as individuals come into contact with salient ideas and conceptions in their new home country. This dissertation revealed that while some sociodemographic characteristics, such as gender, were important in older Somali origin migrants' views on what causes mental health problems, contact with Finnish society, namely the length of stay in Finland, Finnish nationality, or knowledge of the Finnish language, was not. The results therefore suggest that, among older migrants, conceptions about mental health can be relatively stable. Moreover, older Somali origin migrants' views on the causes of mental health problems were considerably different than the prevailing psychiatric framework, which suggests personality characteristics and genetic factors as relevant causes for mental health problems (e.g., Dunn et al., 2015; Klein, Kotov, & Bufferd, 2011). Of the older Somali origin migrants, none explained mental health problems through personality factors, cognitive biases, or heredity.

In general, older Somali origin migrants considered that difficult life experiences, such as war and poverty, were the most important causes of mental health problems. The emphasis on adverse life events in causing mental health problems concurs with research on the causes of depression. Exposure to stressful life events (Hammen, 2005; Rojo-Moreno, Livianos-Aldana, Cervera-Martínez, Domínguez Carabantes, & Reig-Cebrian, 2002), including the loss of a spouse (Fried et al., 2015), has been found to be associated with increased levels of depression. Equally, the older Somali migrants' views on the causes of mental health problems were in line with empirical evidence from low-income countries that highlights the role of social surroundings and difficult living environments,

such as unemployment, hunger, and violence, in mental health (Desjarlais, Eisenberg, Good, & Kleinman 1995).

Empirical studies among Somalis and other refugee groups confirm that the difficulties they face in exile have a negative impact on their well-being. In Finland, a study found that the separation from childhood family was associated with poorer well-being among Somali and Kurdish origin adults (the same participants as in this dissertation's Article III) and made their acculturation to Finnish society more difficult (manifested through, e.g., unemployment, difficulties in learning the national languages, and experiences of loneliness; Rask et al., 2016). In Australia, it was found that the refugee determination process, and specifically the number of rejections experienced therein, predicted asylum seekers' PTSD symptoms (Hocking, Kennedy, & Sundram, 2015). In contrast, asylum seekers' employment served as a protective factor against psychiatric symptoms.

17.1 Religious and cultural considerations for perceptions about mental health problems

Additional commonly-cited causes of mental health problems were *jinn* spirits, invisible beings created by Allah, and *maseyrka*, jealousy related to polygamous relationships, which both reflect religious and cultural aspects of Somali communities. While *jinn* spirits were a commonly cited cause, other spirit categories, curses, and witchcraft were absent or highly uncommon answers. According to Ioan Lewis (2008), beliefs in witchcraft have been less common in Somalia than elsewhere in Africa due to the strong impact of Islam among Somalis. For example, while other spirits can be seen as being against Islamic teachings, *jinn* spirits cannot as they are mentioned in the Koran (Tiiilikainen, 2010) thus making them legitimate causes of suffering and common causal attributions of mental health problems in many Muslim-faith populations (Dein et al., 2008; Lim et al., 2015).

The importance of Islam in the lives of Somalis has increased in recent years, both in Somalia and in exile (Marchal, 2009; Berns McGown, 1999, pp. 30–42). In the diaspora, Islamic faith is seen as providing a sense of connection and a meaningful and familiar framework for many Somalis during resettlement, when they may be far away from family or other social networks (McMichael, 2003, pp. 183–187). Religious adherences in the diaspora can also help to maintain Somali

cultural and ethnic identity, and can be associated with political awakening in exile (Berns McGown, 1999, pp. 69–100). Familiarity with the teachings of the Koran and orthodox Islam are therefore likely factors in shaping older Finnish Somalis' understanding of suffering.

The absence of answers related to witchcraft or curse can also be indicative of the change in social roles of older Somalis once in Finland. Traditionally, older people have had an important role in Somali communities and they have also had the power to bless or curse others (Helander, 1995). In Finland, many may feel that they have lost their central social role and place in the Somali community as respected individuals, and that they are also disregarded in Finnish society (Mölsä & Tiilikainen, 2008).

17.2 Sociodemographic considerations for perceptions of mental health problems

Gender was an important factor in older Somalis' understanding of mental health. Somali women emphasized the role of interpersonal relationships (e.g., *maseyrka*, loneliness) and religious factors (e.g., *jinn*, God's will) more than men. Somali men instead emphasized the roles of psychological and behavioral causes (e.g., worrying, gambling) and somatic causes (e.g., substance use, diabetes) more than women. This observed gender difference in attributions can be interpreted as reflecting the different social roles, chores, acceptable behaviors, and responsibilities in Somali communities. For example, in Somalia, substance use such as chewing *khat* (a narcotic leaf) is not permissible for women in public places (Cavallera et al., 2016), which could be reflected in women and men's differing perspectives on substance use as a cause of mental health problems. Interpersonal relationships, such as the support of other women, can be seen as especially significant for Somali women, who are in charge of raising children, taking care of the home, and organizing important social events, such as weddings, in the diaspora (Tiilikainen, 2003, pp. 188–191). Lack of social support from other women poses strains on Somali women's everyday life and well-being in Finland (Tiilikainen, 2003, pp. 124–125). Among the older Somali women of this dissertation, *maseyrka* (jealousy related to polygamous relationships) was a commonly cited single cause for mental health problems. This is in line with the fact that polygamous marriages in Somalia have been considered as jealousy-provoking (Lewis, 2008), especially for the first wife (Cavallera et al., 2016). The

first wife is considered the head of the family of wives, and although the husband should treat all wives equally, in reality he may prefer the youngest or the most attractive. Indeed, the Somali word for co-wife, *dangalo*, can also be interpreted as jealousy (Lewis, 2008).

Contrary to the general belief that traditional health views would diminish with formal education, high levels of education were not straightforwardly associated with older Somalis' causal attributions. For example, half of the participants with higher education endorsed socioreligious causal attributions, including *jinn* spirits, for mental health. Highly educated Somali origin migrants and those with no formal schooling also had similar understandings of intraindividual causes, such as excessive thinking or substance use, of mental health problems. In addition, individuals with higher levels of education were more likely to report stressful life experiences (e.g., war) as important causes of mental health problems than those with less formal education. It is noteworthy that, in general, stressful life experiences were among the most commonly reported causes of mental health problems among all the older Somalis. Formal education was therefore not a decisive factor in older Somalis' views on mental health.

In addition, age or proxy indicators of acculturation were not associated with the perceived causes of mental health problems, thus further suggesting stability of the older Somalis' mental health views. Nevertheless, age variation among the participants was not particularly significant as the individuals were between 50 and 79 years of age. It is likely that mental health views would differ considerably more among younger Finnish Somalis, who have commonly received their education in Finland, who have a better knowledge of the language, and of whom many are bi-cultural. The fact that proxy indicators of acculturation (that is, how long the participants had lived in Finland, their command of the Finnish language, or having a Finnish nationality) were not associated with the perceived causes of mental health problems may also reflect the contextual barriers Somalis face in their acculturation to and participation in Finnish society. On average, older Somalis had high levels of unemployment and half reported not knowing any Finnish. Therefore, many may be unfamiliar with prevailing views on mental health in Finland, or may not consider that the general psychiatric views in Finland are suitable for explaining their experiences of suffering. Accordingly, those individuals who had a history of psychiatric contact or a mental health diagnosis, and thus personal experiences of Finnish mental health practices, reported more causal attributions involving intraindividual factors (such as

thinking too much, excessive worrying, or substance abuse) than those individuals who did not have a history of psychiatric contact. In this way, causal attributions can shift in relation to personal experiences of psychiatric problems and contact with psychiatric services.

Nevertheless, biomedical attributions (e.g., heredity, biochemical imbalances) and causes related to factors such as personality traits were completely absent or highly uncommonly cited causes of mental health problems among all participants, indicating a mismatch between general psychiatric views on mental health and those of older Somalis. This result is in line with other reports that biomedical causes are relatively uncommonly cited among lay populations (Hagmayer & Engelmann, 2014), and especially in the majority world (Aidoo & Harpham, 2001; Lawrence et al., 2006; McCabe & Priebe, 2004; Sorsdahl et al., 2010; Ventevogel et al., 2013). The emphasis on the individual's role in explaining human behavior and suffering, or 'egocentricity', has been claimed to be a cultural specificity of Western contexts, which shapes our understanding of psychopathology as essentially an internal characteristic of the individual and disregards social aspects of suffering (Lewis-Fernández & Kleinman, 1994). In many other contexts, psychiatric problems are not seen as essentially internal to the individual but as a result of social relationships and adverse life events.

17.3 Perceptions of mental health problems and mental health stigma

It should be highlighted that although older Somalis' conceptions of mental health were quite different from mainstream psychiatric views, they should not be viewed unquestionably as erroneous conceptions which need to be corrected. Although reducing stigma associated with severe mental health problems among Somalis is important, adopting conceptions of mental health problems that emphasize the individual's role and biochemical factors should not necessarily be seen as helpful in doing so. Research contradicts the common belief that viewing psychiatric problems as diseases can eradicate stigma relating to mental health. For example, although attributions of mental health disorders to genetic causes increased among lay Americans between 1996 and 2006, tolerance towards mental health problems did not increase (Schnittker, 2008). On the contrary, such beliefs regarding genetic causes were found to be associated with perceived dangerousness of individuals suffering from schizophrenia. Similarly, a meta-

analysis found that, unlike psychosocial attributions, biomedical attributions of mental health problems were associated with negative attitudes towards, and views of dangerousness and unpredictability of, individuals with mental health problems (Read, Haslam, Sayce, & Davies, 2006). Focusing on biomedical models of mental health problems can lead to views of psychiatric problems as innate to individuals and difficult to change. Therefore, instead of focusing on biomedical views in psychoeducation about mental health, more helpful ways of reducing stigma related to mental health among Somalis could include provision of information about how some symptoms (e.g., strong emotions or recurrent thoughts) are common and understandable reactions after stressful and overwhelming events. In addition, emphasis on the efficacy of available treatments even for severe psychiatric conditions, while not excluding meaningful traditional Somali ways of healing (such as Koran readings), could be helpful in reducing stigma related to mental health among Somali origin migrants.

The potentially different views of migrant origin patients and mental health workers regarding mental health can also co-exist simultaneously. For example, traditional Somali medicine integrates Western medicine with religious healing and herbal remedies (Slikkerveer, 1990) and Somali women in Finland have successfully combined religious and scientific explanations and remedies for treating common illnesses (Tiilikainen, 2013, pp. 152–153). This type of approach to mental health, where the two notions of Western psychiatry and Somali migrants' views are not in conflict but are compatible with each other, could promote Somali origin migrants' willingness to seek help in Finland. In addition, Somali views emphasizing stressful and traumatic life experiences as the most important causes of mental health problems can be readily shared between individuals and psychiatric professionals from different contexts. They could therefore be a good starting point for establishing a confidential relationship. Considering that older Somali origin migrants in Finland face barriers in their access to doctors' appointments (Mölsä et al., 2017) and psychiatric services, the role of other health-care professionals such as nurses, as well as social workers, is emphasized in guiding older Somalis in the service system and in promoting their mental health literacy in a culturally sensitive manner.

18 GOOD PRACTICES OF PSYCHIATRIC ASSESSMENT IN MULTICULTURAL AND GLOBAL CONTEXTS

“More commonly. . . psychologists accept that while everyone has culture, it is mainly relevant elsewhere where it produces certain exotic affects that anthropologists study. It is as if others have culture while we have human nature.”

Schwartz, White, & Lutz (1992, p. 329)

The impression one gets from much of psychological research is an implicit belief that the research methods used, and typically developed in the USA or Western Europe, reflect psychological processes regardless of time or place. At times, when it is recognized that the targeted psychological phenomena might vary from one population to another, the cross-cultural validity of the research methods is not empirically examined but rather assumed based on previous research. For example, the Hopkins Symptom Checklist-25 (HSCL-25; Derogatis et al., 1974) depression and anxiety scale has been reported to be cross-culturally valid (Bean et al., 2007; Mouanoutoua & Brown, 1995; Syed et al., 2008) and its use with migrants has been recommended (Davidson et al., 2010).

This thesis evaluated how well the HSCL-25 scale and the Somatization subscale of the Symptom Checklist-90 (SCL-90-Somatization; Derogatis et al., 1973) performed among Somali, Russian, and Kurdish origin migrants living in Finland. The results revealed considerable limitations in these scales' validity among the three different migrant groups. In statistical terms, it was not possible to establish weak or strong measurement invariance, meaning that the scales did not measure depression, anxiety, and somatization as intended. This finding is particularly noteworthy considering that the statistical method used in the analyses, exploratory structural equation modeling, allowed for specific symptoms of depression, anxiety, or somatization be co-morbid (i.e., a certain symptom could both be a symptom of depression and anxiety). Thus, even when

allowing the symptoms of depression, anxiety, and somatization to co-exist simultaneously, underlying clusters of depression, anxiety, and somatization did not emerge. Therefore, the results suggest that caution should be taken in the use of non-validated methods among migrants and refugees, and highlight the need to develop valid instruments and the use of alternative diagnostic methods for assessing mental health in a cross-cultural context.

General recommendations about a specific scale and its usefulness among migrants may be misleading as specific migrant populations, such as Somali and Russian origin migrants in Finland, differ from one another on average with respect to several factors, such as language, religion and religious commitment, cultural customs, as well as past and current life experiences. Instead, researchers should verify that the methods they use meet the necessary criteria for cross-cultural research and, where possible, also seek to develop new scales that are valid in the context of their research. Clinicians assessing mental health internationally, and in multicultural settings involving migrants or other minority groups, should likewise be aware of the limitations of the methods used. The development and validation of depression or other psychiatric scales for specific sociocultural groups is time consuming and expensive, but necessary in order to gain valid information on mental health.

In addition, the use of different scales in different populations should not be seen as hindering the comparability of research findings across settings. For example, Fried (2017) found that seven (Western) depression scales that are commonly used in research covered in total 52 different depressive symptoms. Thus, existing depression scales vary considerably in their content. More important than the exact similarity of the questionnaires' content is that they validly measure the targeted phenomena (van de Vijver & Tanzer, 2004). Weaver and Kaiser (2015) have also proposed a mixed-methods approach to studying and comparing mental health across different settings. This stepwise approach includes: first, identifying local ways of expressing distress through ethnographies and other qualitative methods; second, developing questionnaires for measuring this distress; and third, comparing how these local expressions of distress map onto biomedical and psychiatric characterizations of conditions such as anxiety and depression, both statistically and ethnographically. Therefore, acknowledging group-specific manifestations of distress does not necessarily limit mental health comparisons across different settings.

The use of mental health scales that do not meet the necessary methodological criteria is likely to distort our understanding of the prevalence and severity of

mental health problems. Sum scores or general cut-off scores that are not adjusted to a specific group may over- or underestimate the prevalence of depression or other problems. For example, the sensitivity and specificity of the HSCL-25 scale to detect depression has been questioned among Afghan refugees in Japan, where the standard cut-off of 1.75 lead to an overestimation of depression (Ichikawa, Nakahara, & Wakai, 2006). When using the best-performing cut-off value in this refugee sample, the estimated rate of clinical depression dropped from 86% to 53%. Researchers and clinicians working with Somali, Russian, and Kurdish origin migrants in Finland should therefore avoid calculating sum or cut-off scores using the HSCL-25 and SCL-90-Somatization scales, as the results may not reflect true levels of depression, anxiety, or somatization in these groups. Instead, qualitative methods, such as culturally-informed clinical interviews, should be preferred.

It is also noteworthy to mention that even if statistical methods indicate that an existing psychiatric scale is valid among migrant groups, purely statistical methods confirming validity cannot reveal whether or not the scale is representative of depressive-like problems in a specific group. Without qualitative studies examining local or group-specific mental health concepts, it is not possible to gather any substantially new information about what depression is like, for example, in Somali communities. The inclusion of potentially relevant aspects of mood problems in Somali communities would require using an emic ('bottom-up' or 'culture-specific') perspective focusing on understanding depression with qualitative methods, such as focus group interviews. Depression questionnaires may also include questions, such as suicidal ideas or loss of libido, that relate to sensitive issues in certain groups and may thus distort usefulness of the scales. In addition, inclusion of local idioms of distress has been found to improve predictions of functional impairment more than solely relying on existing psychiatric scales intended to measure depression- or trauma-related anxiety (Jayawickreme, Jayawickreme, Atanasov, Goonasekera, & Foa, 2012). Emic-based research that recognizes common idioms of distress may also be more readily understandable to lay individuals, and can help to reduce mental health related stigma by making discussions about mental health easier to understand (Kaiser et al., 2015). In contrast, solely confirming existing theoretical structures or scales from an etic perspective may lead to "category fallacy" (Kleinman, 1977, p. 4) where previously defined psychiatric concepts, such as depression, find support because the diagnostic criteria and measurement scales exclude alternative ways of suffering by default.

This dissertation also revealed important methodological shortcomings in the assessment of alexithymia (difficulties in emotional processing) among older Finnish Somalis. The psychometric properties of the externally-oriented thinking (EOT) subscale of the Toronto Alexithymia Scale (TAS-20; Bagby et al., 1994) were poor and indicated that the subscale did not perform well among Somalis. These results concur with others who have suggested that the externally-oriented thinking subscale measures cultural values (e.g., “I prefer talking to people about their daily activities rather than their feelings”) rather than individual emotional capacities. Studies examining alexithymia, or emotional processing in general, should therefore critically scrutinize the meaning and validity of specific items and scales in each population before drawing conclusions about individual emotional processing.

19 REINFORCING OTHERNESS OR APPRAISING DIVERSITY?

“Marking people as different is often the first step towards treating them differently”
(Poortinga, 2015, p. 5)

Comparisons of groups of individuals based on their nationality or ethnic background are problematic as they are rooted in the idea that cultural heritage or ethnicity is the most relevant factor binding these, often very heterogeneous, individuals together. In particular, comparisons which report differences between the studied sociocultural and linguistic groups (especially between migrants or refugees and general populations) may be interpreted as reinforcing ‘otherness’ or ‘othering’ (Löytty, 2005). Comparing these groups may unintentionally highlight the migrant and foreign status of the migrant origin individuals and thus distance them from the general, “mainstream”, population. This, in turn, may lead to problems in equality, as differences are often seen as categorical opposites (dichotomies) or as hierarchies where one variant is seen as better or more normal than the other (Löytty, 2005). ‘Otherness’ is also closely related to stereotyping and to the division between ‘us’ and ‘them’ (Suojanen, 1996, pp. 26–28). When talking about ethnic and cultural groups, one also runs the risk of reducing individuals to their cultural background and neglecting all the other factors that make individuals unique, regardless of their ethnic background (Kleinman & Benson, 2006).

‘Otherness’ is not only related to cross-cultural research, but it also encompasses all types of research where researchers study social groups that they themselves do not belong into, such as men doing research on women or vice versa (Kitzinger & Wilkinson, 1996). Matching researchers to their study populations is often impossible, particularly in community or population studies with heterogeneous study samples. The idea that one should only conduct research within one’s own social or cultural group also promotes the idea that understanding others’ experience is profoundly limited, and therefore highlights

the differences, rather than similarities, between individuals. However, researchers' awareness about their own sociocultural background, and how it shapes their understanding of the studied phenomena, is important as it can affect how results are interpreted. To give an example from this dissertation, it was at first tempting to classify the older Somali participants' causal attributions of mental health problems involving sorcery or curse as 'supernatural' causes due to personal views on the matter. However, in the participants' understanding these are not supernatural but social causes, essentially involving relationships with other humans.

In spite of these limitations, this dissertation study aims to promote understanding of Finnish Somalis and their mental health needs among both the general population and mental health practitioners. Although focusing on sociocultural differences between groups might have negative repercussions, it should also be emphasized that ignoring sociocultural differences can lead to oppression and lack of equity if the needs and experiences of minority or underprivileged groups are not recognized (Kitzinger & Wilkinson, 1996). Instead of forcing stereotypes, this thesis aimed to acknowledge plurality in psychological functioning, or in the words of Richard Shweder (1993, p. 507), recognizing "universalism without the uniformity". Psychological phenomena are not independent from their surrounding contexts, nor can psychological processes be fully understood without considering the potential influences of societal, cultural, religious, and/or political factors in shaping them. Therefore, Western ways of experiencing and manifesting mental health problems are by no means more 'real', 'culture-free', or 'normal' than any other potential variant, and should not be seen as a baseline against which other variants are compared.

20 STRENGTHS AND LIMITATIONS

The strengths of this dissertation include representative samples of the study populations, which were derived from wider migrant origin and Finnish populations using national registers. In addition, the matched-pair setting assisted comparisons between older Somali origin migrants and Finnish-born individuals, and mitigated some of the sociodemographic differences that normally exist between these groups. The relatively large sample sizes in Article III allowed for complex statistical analyses and generalization of the results to respective migrant populations in Finland. Population- and community-based mental health research among Somali origin migrants in Europe is rare and previous research has mostly targeted younger individuals (Bhui et al., 2006). Furthermore, there is a lack of large, representative population-based studies on migrant well-being that also considers methodological challenges inherent in cross-cultural assessment.

The participation rate among older Somalis was exceptionally high, reaching 93% (Articles I and II). However, among the younger Somali origin adults (Article III), the participation rate in the health examination that included mental health assessment via the HSCL-25 (Derogatis et al., 1974) and SCL-90-Somatization subscale (Derogatis et al., 1973) was relatively low, 38%, and may have affected the results. In order to control for bias due to non-response, Inverse Probability Weights were applied in the analyses. Although this may not be sufficient to account for the missing data, the unpublished results of Juntunen et al. (submitted) indicate that non-response among Somalis was not associated with sociodemographic variables (gender, age, citizenship, residential area, marital status, and number of residents in the household), prescription medicines, and social allowances (disability, care, and rehabilitation).

The majority of the previous research on mental health among Somalis has focused on patient samples, whereas population-based studies are less common. However, the focus on population-based samples instead of clinical populations in this dissertation has to be taken into account when interpreting the results, as psychiatric and depressive symptom manifestation may be different in patient as compared to non-clinical samples. Mental health research among individuals with a psychiatric contact and/or a diagnosis is also problematic in cross-cultural

comparisons, as this way of sampling participants can bias symptom manifestations to be more like those defined in diagnostic classification systems, and thus closer to Western views on distress. Contact with psychiatric health care may further shape the individual's subjective experience of distress. For example, the results of this thesis indicated that those older Somali origin migrants who had previous contact with psychiatric health care reported more intraindividual causal attributions of mental health problems (e.g., emotional experience or behavior) than those without experiences of psychiatric care. Population samples of Finnish Somalis are also useful because many Somali origin migrants do not actively seek help for mental health problems in the Finnish psychiatric health-care system (Mölsä et al., 2017), which would therefore narrow the potential study population considerably. Furthermore, in this thesis, depressive symptom manifestation was not compared between Somali origin migrants with high or low levels of distress. This was due to challenges in comparing individuals with low depressive scores and those who score above the clinical cut-off, as the validity of the cut-off scores varies across groups (Ichikawa et al., 2006; Ventevogel, 2007). Therefore, the actual clinical cut-off score for the Somali group should be determined first.

In this dissertation, depressive symptom manifestation was analyzed using well-known and commonly used psychiatric scales, namely the Beck Depression Inventory (BDI; Beck et al., 1961) and the aforementioned HSCL-25. This allows interpretation of the results in relation to previous findings and provides important information for clinicians using these instruments. However, differences in symptom manifestation using self-report methods, such as the BDI and HSCL-25, may partly reflect cross-cultural differences in response style. For example, individuals may be more prone to agree or disagree on an item regardless of its content. A study among Asian and Caucasian students found that Asian students reported more symptoms on a self-report depression questionnaire (BDI) than Caucasian students, but the two groups did not differ in their levels of depression when analyzed with clinical diagnostic interviews (Lam, Pepper, & Ryabchenko, 2004). In addition, self-report methods that are based on the recall of symptoms during the past seven or 30 days may also bring about individual differences in memory functioning that do not reflect the actual experience of the symptoms in the moment, but rather how the individual recalls his or her mood (Scollon, Diener, Oishi, & Biswas-Diener, 2004). Therefore, methods that require recollection of past feelings and symptoms may be more culturally biased than methods that focus on feelings in-the-moment. In addition,

use of questionnaires that apply five-point Likert scales, like the questionnaires used in this dissertation, can be problematic among illiterate individuals who tend to use the scales as having only three options (e.g., none, somewhat, a lot; Chachamovich, Fleck, & Power, 2009). Nevertheless, these problems arise in all questionnaire-based assessment in clinical and research settings, and further highlight the need for development of valid assessment methods to measure mental health in a specific group. As questionnaire-derived information about psychological processes and mental health is often bound to the specific context where the questionnaires have been developed, and thus hard to transfer to other contexts and populations, future research should make efforts to use alternative research methods in assessing depressive phenomena, such as measurements of physiological functioning or observational methods (Tsai & Chentsova-Dutton, 2002), which can overcome some of the challenges in self-report and questionnaire-based research.

The translation procedures used in the studies also possess some limitations. Although attention was paid to ensure semantically equivalent translations, it should be acknowledged that traditional translation methods of questions intended to measure mental health phenomena can lead to linguistically biased items (van de Vijver & Tanzer, 2004). Appropriate and recommended translation procedures of mental health questionnaires include, for example, cognitive interviews (Willis, 2015) or the committee approach (van de Vijver & Tanzer, 2004). These methods are likely to reveal subtle nuances that may not be apparent in more traditional translation procedures, such as only forward or forward-backward translation. Van Ommeren et al. (1999) have proposed a step-by-step translation procedure to guarantee that the items in a translated psychiatric scale are equivalent to what the scale is intended to measure. This procedure includes, for example, the inclusion of both bilingual translators and bilingual professionals as well as local lay individuals who evaluate the translated items before conducting a pilot study. A thorough translation procedure often results in some changes to the original scale in order for the translated scale to be comprehensible and valid. Nevertheless, it should also be remembered that an adequate test translation without necessary test adaptation is usually not enough to guarantee that the scale performs as intended.

Analysis of causal attributions in relation to depressive symptom manifestation deserves criticism concerning the reduction of the causal attribution categories into dichotomous variables (yes/no) and subsequent comparison of each attribution category separately to depressive symptoms.

Analysis of the associations between causal attributions and symptom manifestation could benefit from more specific measurement of the causal attributions. For example, the use of a questionnaire with different potential attributions and a range of answer options could help to capture some associations that did not emerge in this dissertation when analyzing the attributions as dichotomous variables. The allocation of single causal attributions into wider attribution categories was also challenging, as Somali ways of understanding the causes of mental health problems might not concur with those of Western psychology. For example, *maseyrka* (jealousy related to polygamous relationships) was categorized as a social cause although it could also be seen as describing an individual-level, emotional, experience. Further, *jinn* (invisible spirits) were categorized as a religious cause due to their prominence in Islamic theology, but they could also be seen as external causes or life experiences.

The use of robust statistical methods, such as exploratory structural equation modeling and network analysis, offered a deeper insight into the psychometric properties of the HSCL-25 and SCL-90-Somatization scales than estimates of internal consistency (i.e., Cronbach's alpha). The results call for caution in relying on internal consistency estimates as sole indicators of reliability, as Cronbach's alphas of the HSCL-25 and SCL-90-Somatization scales indicated good internal reliabilities (between .74 and .87) while the other statistical methods revealed important methodological limitations in the functioning of the scales. In analyzing the validity of the HSCL-25 and SCL-90-Somatization scales, information about individuals' actual ability to function or some other golden criterion would have been highly useful to evaluate whether the scales captured real levels of symptoms of individuals who, for example, had been diagnosed with mental health problems or had a reduced ability to function. Nevertheless, the fact that it was not possible to establish even weak measurement invariance strongly questions the usefulness of these scales in measuring depression, anxiety, or somatization as separate psychiatric categories. A critique of the network analysis is that the correlations between symptoms include also symptoms with very little variation, such as suicidal ideation among Somalis. The graphic presentations of correlations of this small variation may be hard to interpret as strong correlations of even little variance are shown as thick lines.

In Articles I and II, the use of p -values in determining statistically significant results should be criticized. Overreliance on p -values and null-hypothesis testing alone may distort our understanding of research findings (Cumming, 2014). Use of statistical approaches other than null-hypothesis testing (e.g., effect sizes,

confidence intervals, and meta-analyses), and striving for replication of results in different samples, are important steps in providing more reliable research outcomes. In line with these recommendations, the effect sizes were calculated for all the statistically significant results of this dissertation. Most of the effect sizes were small (Cohen's *d* between .20 and .40). Although small effect sizes indicate that the strength of the phenomena was relatively modest, small effect sizes are nevertheless not trivial or uncommon in psychological research. Furthermore, some effect sizes were intermediate (i.e., difference between somatic-affective and cognitive depressive symptoms among Finns) or large (i.e., difference between somatic-affective and cognitive depressive symptoms among Somalis), indicating that the strength of the observed differences in symptom manifestation were relatively strong.

A further critique involves the conceptualization and measurement of some of the variables in the studies. Group-membership was based on country of birth, and besides country of birth and ethnic or national identity, there was no deeper analysis of cultural components on an individual level. Although Finnish and Somali cultural conventions may be seen, for example, as highlighting individual and collectivistic tendencies to different degrees, there are also within-group variations in, for example, cultural values of individualism and collectivism and in other values that can be decisive for understanding mental health phenomena. Therefore, conceptualizing and measuring cultural values, norms, and ideas on an individual level could have further helped to unpack depressive symptom manifestation.

Another critique concerns the assessment of somatization. Because this research focused on self-reported symptoms, and actual somatic diseases were not controlled for, some of the reported somatic symptoms could have been due to a medical condition and this may thus distort some of the findings. Associations between depressive, anxiety, and somatic symptoms can also reflect the fact that pain and somatic discomforts create mood problems and anxious affect (Gureje et al., 2008). Furthermore, the somatization scales used in this dissertation study were not fully compatible: the SCL-90-Somatization scale (Derogatis et al., 1973), used in Article III, has 10 questions about somatic sensations, whereas there are 12 somatization questions in the revised scale (SCL-90-R-Somatization; Derogatis 1992) used in Article I. Therefore, although both scales intend to measure somatization, the constructs are not identical. In future research, more attention should be paid to the definition and measurement of somatization.

Finally, the conceptualization and measurement of acculturation calls for further attention. Proxy indices of acculturation, such as time spent in a country or citizenship, are only crude estimations of acculturation processes which involve complex emotional, cognitive, and behavioral aspects. A deeper focus on acculturation processes and multiculturalism could provide more insights into how individuals experience and manifest symptoms. Bi-cultural and transnational identities are particularly salient among young Somalis living in the diaspora, who feel belongingness at times to several different countries and cultural contexts (Omar, 2016). In future studies, the complex processes of transnational identities and lifestyles, as well as step-migration (i.e., the countries in which individuals have lived prior to coming to Finland), would be important factors to consider when studying migrant well-being, symptom manifestation, and subjective experiences of distress.

21 CONCLUSIONS AND PRACTICAL IMPLICATIONS

This thesis aimed to add to the knowledge of how depression is manifested and should be assessed among Somali origin migrants in Finland, and provided new information on how Finnish Somalis explain mental health problems. The population-based research setting, together with comparative analyses of symptom manifestation and qualitative analyses of perceptions of mental health problems, provided knowledge of Finnish Somalis' mental health which is valuable for the Finnish health-care system. The results can help psychiatric and other health-care professionals to better evaluate and treat their Somali origin patients' mental health and understand their views on ill health. Although human suffering is common to all individuals regardless of their origin, the more concrete ways in which we name, think about, and express distress varies across time and populations. With an increasing number of individuals from different social, linguistic, and cultural backgrounds in Finland, recognizing the diversity in mental health phenomena and offering adequate help are key concerns in the health-care service system. While merely having an immigrant or refugee background is not a sufficient reason to guide individuals to specific transcultural health-care services, it is important that the service system provides options for those who find the general health-care services inadequate or hard to access. Mental health professionals' general understanding and acceptance of diversity in well-being and illness is likely to increase individuals' willingness to seek help and to generate feelings of comfort and trust. Professionals' awareness of their own cultural and social background, and a respectful curiosity about their patients' experiences and views, occupies a central role in multicultural health care, or indeed in any therapeutic or health care encounter. Mental health-care services for migrants and refugees should also aim to provide low barriers, or easy access, to services and a holistic approach to health. Collaboration between health-care professionals, social workers, and integration services is also crucial.

Culturally-informed knowledge about the variation in mental health phenomena is essential for the recognition and diagnosis of mental health problems in psychiatric services. However, psychiatric questionnaires measuring mental health problems, such as depression, reflect mainly Western-defined

psychiatric concepts. This may limit their usefulness in evaluating mental health problems both globally and among diverse sociocultural groups, as indeed suggested by the results of this dissertation. A culturally sensitive approach is therefore necessary in order to validly assess the prevalence and severity of mental health problems. Instead of screening mental health problems with non-validated questionnaires, better practices in multicultural clinical work involve the use of qualitative methods such as clinical interviews, focusing on the lived illness experience of the individual and his/her social world.

On a societal level, more efforts should be made to promote refugee origin individuals' well-being by focusing on improving their social situation. Somali origin migrants commonly consider stressful life events and interruptions in social relationships to negatively impact on their well-being, and see depression as a reaction to the adverse life events many have experienced. Although individual-focused treatments (i.e., medication and psychotherapy) are necessary, they are not sufficient in promoting mental health among refugees. Besides facilitating access to suitable health-care services, social policies should aspire to improve refugee origin individuals' mental health through focus on factors known to pose a strain on well-being, e.g., family reunifications, the long refugee determination processes, and access to the labor market (Hocking et al., 2015; Rask et al., 2016).

This thesis on depressive phenomena among older and adult Finnish Somalis drew theoretically on research traditions in psychology, psychiatry, and anthropology. Accordingly, a general aim was to add to interdisciplinary understanding of mental health such as expressions and subjective views on ill health. This type of knowledge is highly necessary in today's world, where the amount of involuntarily displaced individuals is higher than ever before and an increasing number of individuals also cross borders voluntarily. Globalization and the transnational reality in which many individuals live, including Somalis in the diaspora, pose both challenges and opportunities for advancing our understanding of how psychological well-being and ill health emerge from the interconnectedness of human biology and the surrounding sociocultural reality.

REFERENCES

- Abdullahi, M D. (2001). *Culture and Customs of Somalia*. Westport, Connecticut: Greenwood Press.
- Abu-Bader, S. H., Tirmazi, M. T., & Ross-Sheriff, F. (2011). The impact of acculturation on depression among older Muslim immigrants in the United States. *Journal of Gerontological Social Work*, 54(4), 425-448. doi:10.1080/01634372.2011.560928
- Adams, K. B. (2001). Depressive symptoms, depletion, or developmental change? Withdrawal, apathy, and lack of vigor in the geriatric depression scale. *The Gerontologist*, 41(6), 768-777. doi:10.1093/geront/41.6.768
- Ahn, W.-k., Proctor, C. C., & Flanagan, E. H. (2009). Mental health clinicians' beliefs about the biological, psychological, and environmental bases of mental disorders. *Cognitive Science*, 33, 147-182. doi:10.1111/j.1551-6709.2009.01008.x
- Aidoo, M., & Harpham, T. (2001). The explanatory models of mental health amongst low-income women and health care practitioners in Lusaka, Zambia. *Health Policy and Planning*, 16, 206-213.
- Al-Issa, I. (2000). Culture and mental illness in Algeria. In I. Al-Issa (Ed.) *Al-Junun: Mental Illness in the Islamic World* (pp. 101-120). Madison, Connecticut: International Universities Press, Inc.
- Alitolppa-Niitamo, A. (2004). *The Ice Breakers. Somali-Speaking Youth in Metropolitan Helsinki with a Focus on the Context of Formal Education* Helsinki: The Population Research Institute.
- Andrade, L., Caraveo-Anduaga, J.J., Berglund, P., Bilj, R.V., de Graaf, R., Vollebergh, W., ... Wittchen, H.-U. (2003). The epidemiology of major depressive episodes: Results from the International Consortium of Psychiatric Epidemiology (ICPE) Surveys. *International Journal of Methods in Psychiatric Research*, 12, 3-21.
- American Psychiatric Association (APA) (1980). *Diagnostic and Statistical Manual of Diseases, 3rd Edition*. American Psychiatric Association.
- American Psychiatric Association (APA) (1994). *Diagnostic and Statistical Manual of Diseases, 4th Edition*. American Psychiatric Association.
- American Psychiatric Association (APA) (2013a). *Diagnostic and Statistical Manual of Diseases, 5th Edition*. American Psychiatric Association.
- American Psychiatric Association (APA) (2013b). *Major Depressive Disorder and the "Bereavement Exclusion"*. American Psychiatric Association.
- American Psychological Association (APA) (2002). *Guidelines on Multicultural Education, Training, Research, Practice, and Organizational Change for Psychologists*. American

- Psychological Association. Retrieved from <http://www.apa.org/pi/oema/resources/policy/multicultural-guidelines.aspx>
- American Psychological Association (APA) (2010). *Ethical Principles of Psychologists and Code of Conduct*. American Psychological Association. Retrieved from <http://www.apa.org/ethics/code/principles.pdf>
- Angst, J., Gamma, A., Sellaro, R., Zhang, H., & Merikangas, K. (2002). Toward validation of atypical depression in the community: Results of the Zurich cohort study. *Journal of Affective Disorders, 72*(2), 125-138. doi:10.1016/S0165-0327(02)00169-6
- Arias, V. B., Ponce, F. P., Martínez-Molina, A., Arias, B., & Núñez, D. (2016). General and specific attention-deficit/hyperactivity disorder factors of children 4 to 6 years of age: An exploratory structural equation modeling approach to assessing symptom multidimensionality. *Journal of Abnormal Psychology, 125*(1), 125–37. doi:10.1037/abn0000115
- Aromaa, A., & Koskinen, S. (Eds.) (2003). *Health and functional capacity in Finland. Baseline results of the Health 2000 Health Examination Survey*. Helsinki: Publications of the National Public Health Institute. Retrieved from <http://www.terveys2000.fi/julkaisut/baseline.pdf>
- Bäärnhielm, S., Åberg Wistedt, A., & Rosso, M. S. (2015). Revising psychiatric diagnostic categorisation of immigrant patients after using the Cultural Formulation in DSM-IV. *Transcultural Psychiatry, 52*(3), 287-310. doi:10.1177/1363461514560657
- Bagby, R., Parker, J., & Taylor, G. (1994). The twenty-item Toronto Alexithymia Scale-I. Item selection and cross-validation of the factor structure. *Journal of Psychosomatic Research, 38*, 23-32. doi:10.1016/0022-3999(94)90005-1
- Ballenger, J., Davidson, J., Lecrubier, Y., Nutt, D., Kirmayer, L., Lépine, J.-P., . . . Ono, Y. (2001). Consensus statement on transcultural issues in depression and anxiety from the international consensus group on depression and anxiety. *Journal of Clinical Psychiatry, 62*(Suppl. 13), 47-55.
- Bamonti, P. M., Heisel, M. J., Topciu, R. A., Franus, N., Talbot, N. L., & Duberstein, P. R. (2010). Association of alexithymia and depression symptom severity in adults 50 years of age and older. *The American Journal of Geriatric Psychiatry: Official Journal of the American Association for Geriatric Psychiatry, 18*(1), 51–56. doi:10.1097/JGP.0b013e3181bd1bfe
- Bean, T., Derluyn, I., Eurelings-Bontekoe, E., Broekaert, E., & Spinhoven, P. (2007). Validation of the multiple language versions of the Hopkins Symptom Checklist-37 for refugee adolescents. *Adolescence, 42*(165), 21–71.
- Beck, A. (2008). The evolution of the cognitive model of depression and its neurobiological correlates. *American Journal of Psychiatry, 165*, 969–977.
- Beck, A., Ward, C., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4*, 561-571.

- Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society. Series B (Methodological)*, 57(1), 289–300.
- Bentley, J., & Owens, C. W. (2008). *Somali Refugee Mental Health Cultural Profile*. Retrieved from <http://ethnomed.org/clinical/mental-health/somali-refugee-mental-health-cultural-profile>
- Berns McGown, R. (1999). *Muslims in the diaspora: The Somali communities of London and Toronto*. Toronto, Canada: University of Toronto Press.
- Bhugra, D. (2003). Migration and depression. *Acta Psychiatrica Scandinavica*, 108, 67–72. doi:10.1034/j.1600-0447.108.s418.14.x
- Bhui, K., Abdi, A., Abdi, M., Pereira, S., Dualeh, M., Robertson, D., . . . Ismail, H. (2003). Traumatic events, migration characteristics and psychiatric symptoms among Somali refugees: Preliminary communication. *Social Psychiatry and Psychiatric Epidemiology*, 38(1), 35-43. doi:10.1007/s00127-003-0596-5
- Bhui, K., Craig, T., Mohamud, S., Warfa, N., Stansfeld, S. A., Thornicroft, G., . . . McCrone, P. (2006). Mental disorders among Somali refugees: Developing culturally appropriate measures and assessing socio-cultural risk factors. *Social Psychiatry and Psychiatric Epidemiology*, 41(5), 400-408. doi:10.1007/s00127-006-0043-5
- Binitie, A. (1981). Psychiatric disorders in a rural practice in the Bendel state of Nigeria. *Acta Psychiatrica Scandinavica*, 64, 273-280. doi:10.1111/j.1600-0447.1981.tb00784.x
- Bogic, M., Njoku, A., & Priebe, S. (2015). Long-term mental health of war-refugees: A systematic literature review. *BMC International Health and Human Rights*, 15(1), 29. doi:10.1186/s12914-015-0064-9
- Bolton, P., Neugebauer, R., & Ndogoni, L. (2002). Prevalence of depression in rural Rwanda based on symptom and functional criteria. *Journal of Nervous and Mental Disease*, 190(9), 631-637. doi:10.1097/01.NMD.0000030568.45847.AE
- Borsboom, D., & Cramer, A. O. (2013). Network analysis: An integrative approach to the structure of psychopathology. *Annual Review of Clinical Psychology*, 9, 91–121. doi:10.1146/annurev-clinpsy-050212-185608
- Bromet, E., Andrade, L. H., Hwang, I., Sampson, N. A., Alonso, J., de Girolamo, G., . . . Kessler, R. C. (2011). Cross-national epidemiology of DSM-IV major depressive episode. *BMC Medicine*, 9(1), 90-90. doi:10.1186/1741-7015-9-90
- Buchert, U. (2015). *The Institutional Categories of Immigrancy*. Helsinki: Rehabilitation Foundation, Research Reports, 87/2015. Retrieved from <https://helda.helsinki.fi/bitstream/handle/10138/156401/Maahanmu.pdf?sequence=1>
- Carothers, J. C. D. (1953) *The African mind in health and in disease: A study in ethnopsychiatry*. Geneva: World Health Organization. Retrieved from http://apps.who.int/iris/bitstream/10665/41138/2/WHO_MONO_17_%28part2%29.pdf

- Carroll, J. K. (2004). Murug, waalli, and gini: Expression of distress in refugees from Somalia. *Primary Care Companion Journal of Clinical Psychiatry*, 6, 119–125.
- Castaneda, A., Larja, L., Nieminen, T., Jokela, S., Suvisaari, J., Rask, S., Koponen, P., & Koskinen, S (2015). *Mental health, safety and social inclusion among people of foreign origin. The 2014 Survey on work and well-being among people of foreign origin (UTH). Working paper 18/2015*. Helsinki, Finland: National Institute for Health and Welfare. Available at <http://urn.fi/URN:ISBN:978-952-302-535-6>
- Castaneda, A. E., Rask, S., Koponen, P., Mölsä, M., & Koskinen, S. (Eds.) (2012). *Maahanmuuttajien terveys ja hyvinvointi. Tutkimus venäläis-, somalialais- ja kurditaustaisista Suomessa (Migrant Health and Wellbeing Study)*. Helsinki: Publications of the National Public Health Institute.
- Cavallera, V., Reggi, M., Abdi, S., Jinnah, Z., Kivelenge, J., Warsame, A.M., Yusuf, A. M., & Ventevogel, P. (2016). *Culture, context and mental health of Somali refugees: A primer for staff working in mental health and psychosocial support programs*. Geneva: United Nations High Commissioner for Refugees. Retrieved from: <https://data2.unhcr.org/en/documents/download/52624>
- Chachamovich, E., Fleck, M. P., & Power, M. (2009). Literacy affected ability to adequately discriminate among categories in multipoint likert scales. *Journal of Clinical Epidemiology*, 62(1), 37-46. doi:10.1016/j.jclinepi.2008.03.002
- Chang, S. M., Hahm, B., Lee, H. B., Lee, D., Lee, J., Shin, M. S., . . . Cho, M. J. (2008). Cross-national difference in the prevalence of depression caused by the diagnostic threshold. *Journal of Affective Disorders*, 106(1), 159-167. doi:10.1016/j.jad.2007.07.023
- Chia, A., & Graves, R. (2016). Examining anxiety and depression comorbidity among Chinese and European Canadian university students. *Journal of Cross-Cultural Psychology*, 47(2), 215-233. doi:10.1177/0022022115618025
- Chiu, C. Y., Gelfand, M. J., Yamagishi, T., Shteynberg, G., & Wan, C. (2010). Intersubjective culture: The role of intersubjective perceptions in cross-cultural research. *Perspectives on Psychological Science*, 5, 482–493.
- Christensen, H., Jorm, A. F., Mackinnon, A. J., Korten, A. E., Jacomb, P. A., Henderson, A. S., & Rodgers, B. (1999). Age differences in depression and anxiety symptoms: A structural equation modelling analysis of data from a general population sample. *Psychological Medicine*, 29(2), 325-339. doi:10.1017/S0033291798008150
- Collins English Dictionary* (1998). “Equivalence”. UK: HarperCollins Publishers.
- Craske, M. G., Rauch, S. L., Ursano, R., Prenoveau, J., Pine, D. S., & Zinbarg, R. E. (2009). What is an anxiety disorder?. *Depression & Anxiety*, 26, 1066–1085. doi: 10.1002/da.20633
- Cumming, G. (2014). The new statistics : Why and how. *Psychological Science*, 25(1), 7–29. doi: 10.1177/0956797613504966
- Davidson, G. R., Murray, K. E., & Schweitzer, R. D. (2010). Review of refugee mental health assessment: Best practices and recommendations. *Journal of Pacific Rim*

- Psychology*, 4(1), 72–85. doi:10.1375/prp.4.1.72
- Dhalmann, H. (2011). *Yhden uhkea, toisen toive? Somalien ja venäläisten asumistoiveet etnisen segregatiiokehityksen valossa. [Someone's threath, someone else's wish? Somali and Russian immigrants' wishes about housing in the light of ethnic segregation.]* Helsinki, Finland: University of Helsinki.
- De Gucht, V. & Heiser, W. (2003). Alexithymia and somatisation: A quantitative review of the literature. *Journal of Psychosomatic Research*, 54, 425–434.
- Dein, S., Alexander, M., & Napier, D. (2008). Jinn, psychiatry and contested notions of misfortune among east London Bangladeshis. *Transcultural Psychiatry*, 45, 31–55. doi:10.1177/1363461507087997
- Dere, J., Falk, C., & Ryder, A. (2012). Unpacking cultural differences in alexithymia: The role of cultural values among Euro-Canadian and Chinese-Canadian students. *Journal of Cross-Cultural Psychology*, 43, 1297-1312. doi:10.1177/0022022111430254
- Dere, J., Tang, Q., Zhu, X., Cai, L., Yao, S. & Ryder, A. G. (2013). The cultural shaping of alexithymia: Values and externally oriented thinking in a Chinese clinical sample. *Comprehensive Psychiatry*, 54, 362–368.
- Derogatis, L. (1992). *The Symptom Checklist-90-Revised*. Minneapolis, MN: NCS Assessments.
- Derogatis, L. R., Lipman, R. S., & Covi, L. (1973). SCL-90: An outpatient psychiatric rating scale - preliminary report. *Psychopharmacology Bulletin*, 9(1), 13–28.
- Derogatis, L. R., Lipman, R. S., Rickels, K., Uhlenhuth, E. H., & Covi, L. (1974). The Hopkins Symptom Checklist (HSCL): A self-report symptom inventory. *Behavioral Science*, 19(1), 1–15. doi:10.1002/bs.3830190102
- Desjarlais, R., Eisenberg, L., Good, B., & Kleinman, A. (1995). *World mental health: Problems and priorities in low-income countries*. New York, NY: Oxford University Press.
- Diener, E., Gohm, C., Suh, E., & Oishi, S. (2000). Similarity of the relations between marital status and subjective well-being across cultures. *Journal of Cross-Cultural Psychology*, 31, 419-436. doi:10.1177/0022022100031004001
- DiMaggio, P., & Markus, H. R. (2010). Culture and social psychology: Converging perspectives. *Social Psychology Quarterly*, 73(4), 347-352.
- Dion, K. (1996). Ethnolinguistic correlates of alexithymia: Toward a cultural perspective. *Journal of Psychosomatic Research*, 41, 531-539. doi:10.1016/S0022-3999(96)00295-4
- Draguns, J., & Tanaka-Matsumi, J. (2003). Assessment of psychopathology across and within cultures: Issues and findings. *Behaviour Research and Therapy*, 41, 755-776. doi:10.1016/S0005-7967(02)00190-0
- Duale, I., & Alvarez, M. (2011). *Best practice in working with the Somali population*. Mankato: Minnesota State University. Retrieved from <http://sbs.mnsu.edu/socialwork/graduate/capstone/capstonedoc/duale.pdf>
- Dunn, E. C., Brown, R. C., Dai, Y., Rosand, J., Nugent, N. R., Amstadter, A. B., & Smoller, J. W. (2015). Genetic determinants of depression: Recent findings and future directions. *Harvard Review of Psychiatry*, 23(1), 1–18. doi:10.1097/HRP.0000000000000054

- Duodecim (2016). *Depressio (online). Suomalaisen Lääkäriseuran Duodecimin ja Suomen Psykiatriyhdistys ry:n asettama työryhmä [Depression. Finnish Medical Society Duodecim and Finnish Psychiatric Association's workgroup]*. Helsinki, Finland: The Finnish Medical Society Duodecim. Retrieved from <http://www.kaypahoito.fi/web/kh/suosituksset/suositus?id=hoi50023#NaN>
- Eisenbruch, M. (1990). Classification of supernatural and natural causes of mental distress. Development of a Mental Distress Explanatory Model Questionnaire. *Journal of Nervous and Mental Disease*, 178, 712–719.
- Elfenbein, H. A., & Ambady, N. (2002). On the universality and cultural specificity of emotion recognition: A meta-analysis. *Psychological Bulletin*, 128, 203–235. doi:10.1037/0033-2909.128.2.203
- Eronen, A., Härmälä, V., Jauhiainen, S., Karikallio, H., Karinen, R., Kosunen, A., Laamanen, J.-P., & Lahtinen, M. (2014). *Maahanmuuttajien työllistyminen – Taustatekijät, työnhaku ja työvoimapalvelut [Employment of Immigrants – Background variables, employment seeking, and employment services]*. Finnish Ministry of Employment and the Economy: MEE Publications. Retrieved from https://www.tem.fi/files/40368/maahanmuuttajien_tyollistyminen.pdf
- Eshun, S. & Caldwell-Colbert, T. (2009). Culture and mood disorders. In Eshun, S. & Gurung, A. E. (eds.), *Culture and Mental Health: Sociocultural Influences, Theory, and Practice* (pp. 181-195). Oxford, UK: Wiley-Blackwell.
- Eurostat (2016). *Asylum Statistics*. Retrieved from http://ec.europa.eu/eurostat/statistics-explained/index.php/Asylum_statistics
- Fazel, M., Wheeler, J., & Danesh, J. (2005) Prevalence of serious mental disorder in 7000 refugees resettled in western countries: A systematic review. *Lancet*, 9-15; 365(9467):1309-1314. doi: 10.1016/S0140-6736(05)61027-6
- Finnish Advisory Board on Research Integrity (2012). *Responsible Conduct of Research and Procedures for handling allegations of misconduct in Finland*. Guidelines of the Finnish Advisory Board on Research Integrity. Retrieved from http://www.tenk.fi/sites/tenk.fi/files/HTK_ohje_2012.pdf
- Finnish Association for Mental Health (n.d.). *Serene-toiminta [Serene Activity]*. Retrieved from <http://www.mielenterveysseurat.fi/turku/serene/>
- Finnish Immigration Service (2017). *Vireille tulleet turvapaikkahakemukset [Asylum applicants]*. Retrieved from http://www.migri.fi/download/71559_turvapaikkatilastot_26.12.1.1.pdf?38a39e00d480d488
- Finnish Psychiatric Association (n.d.). *Kulttuurisen haastattelun perushaastattelu [Cultural Formulation Basic Interview]*. Retrieved from http://www.psy.fi/files/452/Kulttuurisen_haastattelun_perushaastattelu.pdf
- Fischer, R., & Fontaine, J. R. J. (2011). Methods for investigating structural equivalence. In D. Matsumoto & F. J. R. van de Vijver (Eds.), *Culture and psychology. Cross-cultural research methods in psychology* (pp. 179-215). New York: Cambridge University Press.

- Freud, S. (1917). *Mourning and Melancholia*. In J. Strachey, A. Freud, A. Strachey, & A. Tyson (Eds.) (1957). *The Standard Edition of the Complete Psychological Works of Sigmund Freud: Vol. 14: On the History of the Psycho-Analytic Movement, Papers on Metapsychology and Other Works* (Repr. ed.) (pp. 243-260). London, UK: Hogarth Press and the Institute of Psychoanalysis.
- Fried, E. I. (2017). The 52 symptoms of major depression: Lack of content overlap among seven common depression scales. *Journal of Affective Disorders*, *208*, 191-197. doi:10.1016/j.jad.2016.10.019
- Fried, E. I., Bockting, C., Arjadi, R., Borsboom, D., Tuerlinckx, F., Cramer, A., Epskamp, S., Amshoff, M., Carr, D., & Stroebe, M. (2015). From loss to loneliness: The relationship between bereavement and depressive symptoms. *Journal of Abnormal Psychology*, *124*, 256-265.
- Fried, E. I., Epskamp, S., Nesse, R. M., Tuerlinckx, F., & Borsboom, D. (2016). What are 'good' depression symptoms? Comparing the centrality of DSM and non-DSM symptoms of depression in a network analysis. *Journal of Affective Disorders*, *189*, 314-320. doi: 10.1016/j.jad.2015.09.005
- Fried, E. I., & Nesse, R. M. (2014). The impact of individual depressive symptoms on impairment of psychosocial functioning. *PLoS ONE*, *9*(2), doi: e90311.
- Fried, E. I., & Nesse, R. M. (2015a). Depression is not a consistent syndrome: An investigation of unique symptom patterns in the STARD study. *Journal of Affective Disorders*, *172*, 96-102. doi:10.1016/j.jad.2014.10.010
- Fried, E. I., & Nesse, R. M. (2015b). Depression sum-scores don't add up: Why analyzing specific depression symptoms is essential. *BMC Medicine*, *13*(72), 1-11.
- Frewen, P. A., Schmittmann, V. D., Bringmann, L. F., & Borsboom, D. (2013). Perceived causal relations between anxiety, posttraumatic stress and depression: Extension to moderation, mediation, and network analysis. *European Journal of Psychotraumatology*, *4*(1), 20656-14. doi:10.3402/ejpt.v4i0.20656
- Gallo, J. J., Anthony, J. C., & Muthen, B. O. (1994). Age differences in the symptoms of depression: A latent trait analysis. *Journals of Gerontology*, *49*(6), 251-264.
- Gallo, J. J., Cooper-Patrick, L., & Lesikar, S. (1998). Depressive symptoms of Whites and African Americans aged 60 years and older. *Journals of Gerontology - Series B Psychological Sciences and Social Sciences*, *53*(5), 277-286. doi:10.1093/geronb/53B.5.P277
- Gele, A. A., & Harsløf, I. (2012). Barriers and facilitators to civic engagement among elderly African immigrants in Oslo. *Journal of Immigrant and Minor Health*, *14*(1), 166-174. doi: 10.1007/s10903-010-9423-8
- Gerritsen, A. A., Bramsen, I., Deville, W., van Willigen, L. H., Hovens, J. E., & van der Ploeg, H. M. (2006). Physical and mental health of Afghan, Iranian and Somali asylum seekers and refugees living in the Netherlands. *Social Psychiatry and Psychiatric Epidemiology*, *41*(1), 18-26. doi: 10.1007/s00127-005-0003-5

- Good, B., DelVecchio Good, M.-J., & Moradi, R. (1985). The interpretation of Iranian depressive illness and dysphoric affect. In Kleinman A., & Good, B. (Eds.), *Culture and Depression: Studies in the Anthropology and Cross-Cultural Psychiatry of Affect and Disorder* (pp. 369-428). Berkeley, CA: University of California Press.
- Gotlieb, I. H. & Hammen, C. L. (2002). *Handbook of Depression*. New York, NY: The Guilford Press.
- Guerin, B., Guerin, P., Diiriye, R., & Yates, S. (2004). Somali conceptions and expectations concerning mental health: Some guidelines for mental health professionals. *New Zealand Journal of Psychology*, 33(2), 59-67.
- Guerra, M., Prina, A. M., Ferri, C. P., Acosta, D., Gallardo, S., Huang, Y., ...Prince, M. (2016). A comparative cross-cultural study of the prevalence of late life depression in low and middle-income countries. *Journal of Affective Disorders*, 190, 362-368.
- Gureje, O., Von Korff, M., Kola, L., Demyttenaere, K., He, Y., Posada-Villa, J., . . . Alonso, J. (2008). The relation between multiple pains and mental disorders: Results from the world mental health surveys. *Pain*, 135(1), 82-91. doi:10.1016/j.pain.2007.05.005
- Hagmayer, Y., & Engelmann, N. (2014). Causal beliefs about depression in different cultural groups—what do cognitive psychological theories of causal learning and reasoning predict? *Frontiers in Psychology*, 5, 1303. doi:10.3389/fpsyg.2014.01303
- Hammen, C. (2005). Stress and depression. *Annual Review of Clinical Psychology*, 1, 293-319
- Hammond, L., Awad, M., Dagane, A., Hansen, P., Horst, C., Menkhaus, K., & Obare, L. (2011). *Cash and compassion: The role of the Somali diaspora in relief, development and peace-building* [Study report]. Report of a study Commissioned by UNDP Somalia. Retrieved from <http://www.hiiraan.com/2011/May/Cash-and-Compassion-Draft-for-comments.pdf>
- Halbreich, U., Alarcon, R., Calil, H., Douki, S., Gaszner, P., Jadresic, E., . . . Trivedi, J. (2007). Culturally-sensitive complaints of depressions and anxieties in women. *Journal of Affective Disorders*, 102, 159-176. doi:10.1016/j.jad.2006.09.033
- Haslam, N., Holland, E., & Kuppens, P., (2012). Categories versus dimensions in personality and psychopathology: A quantitative review of taxometric research. *Psychological medicine* 42, 903-920.
- Hassinen-Ali-Azzani, T. (2002). *Terveys ja lapset ovat Jumalan lahjoja. Etnografia somalialaisten terveyskäsitteistä ja perhe-elämän hoitokäytännöistä suomalaiseseen kulttuuriin siirtymävaiheessa* [Health and children are the gifts of God. An ethnographic study of health concepts and family life among Somalis during the period of cultural transition in Finland]. Kuopio, Finland: University of Kuopio.
- Hautaniemi, P. (2004). *Pojat! Somalipoikien kiistanalainen nuoruus Suomessa* [Boys! Somali boys' controversial adolescence in Finland]. Helsinki, Finland: Finnish Youth Research Society.
- Helander, B. (1995). Disability as incurable illness: Health, process, and personhood in southern Somalia. In B. Ingstad, & S. Reynolds Whyte (Eds.), *Disability and culture* (pp. 73-93). Berkeley, CA: University of California Press.

- Helsinki University Hospital (not dated). *Kulttuuripsykiatrian poliklinikka [Transcultural psychiatric clinic]*. Retrieved from <http://www.hus.fi/sairaanhoito/sairaalat/meilahden-psykiatriset-poliklinikat/Sivut/Kuurojen-psykiatrinen-poliklinikka.aspx>
- Hinton, D. E. (2012). Multicultural challenges in the delivery of anxiety treatment. *Depression and Anxiety, 29*, 1–3. doi:10.1002/da.20889
- Hinton, D. E., Lewis-Fernández, R., & Pollack, M. H. (2009). A model of the generation of ataque de nervios: The role of fear of negative affect and fear of arousal symptoms. *CNS Neuroscience and Therapeutics, 15*(3), 264–275. doi:10.1111/j.1755-5949.2009.00101.x
- Hinton, D. E., Um, K., & Ba, P. (2001). A unique panic-disorder presentation among Khmer refugees: The sore-neck syndrome. *Cultural Medicine and Psychiatry, 25*, 297–316.
- Hocking, D. C., Kennedy, G. A., & Sundram, S. (2015). Mental disorders in asylum seekers: The role of the refugee determination process and employment. *The Journal of Nervous and Mental Disease, 203*(1), 28–32. doi:10.1097/NMD.0000000000000230
- Hofstede, G. (1980). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. Thousand Oaks, CA: Sage.
- Hong, Y.-y., Zhan, S., Morris, M. W., & Benet-Martínez, V. (2016). Multicultural identity processes. *Current Opinion in Psychology, 8*, 49–53. doi:10.1016/j.copsy.2015.09.020
- Honkalampi, K., Hintikka, J., Tanskanen, A., Lehtonen, J., & Viinamäki, H. (2000). Depression is strongly associated with alexithymia in the general population. *Journal of Psychosomatic Research, 48*(1), 99–104. doi:10.1016/S0022-3999(99)00083-5
- Horst, C. (2006). Buufis amongst Somalis in Dadaab: The transnational and historical logics behind resettlement dreams. *Journal of Refugee Studies, 19*(2), 143–157. doi:10.1093/jrs/fej017
- Horwitz, A. V. (2010). How an age of anxiety became an age of depression. *The Milbank Quarterly, 88*(1), 112–138.
- Ichikawa, M., Nakahara, S., & Wakai, S. (2006). Cross-cultural use of the predetermined scale cutoff points in refugee mental health research. *Social Psychiatry and Psychiatric Epidemiology, 41*, 248–250. doi:10.1007/s00127-005-0016-2
- Isotalo, A. (2015). *Mistä on hyvät tytöt tehty? Somalitytöt ja maineen merkitykset [What are good girls made of? Somali girls and meanings of reputation]*. Turku, Finland: University of Turku.
- Jasinskaja-Lahti, I., Liebkind, K., & Perhoniemi, R. (2006). Perceived discrimination and well-being: A victim study of different immigrant groups. *Journal of Community & Applied Social Psychology, 16*, 267–284. doi:10.1002/casp.865
- Jayawickreme, N., Jayawickreme, E., Atanasov, P., Goonasekera, M. A., & Foa, E. B. (2012). Are culturally specific measures of trauma-related anxiety and depression needed? The case of Sri Lanka. *Psychological Assessment, 24*(4), 791–800.

- Jenkins, J. (1994). Culture, emotion, and psychopathology. In Kitayama, S., & Markus, H. (Eds.), *Emotion and Culture: Empirical Studies of Mutual Influence* (2nd ed., pp. 307-335). Washington, DC: American Psychological Association.
- Johnsdotter, S., Ingvarsdotter, K., Östman, M., & Carlbom, A. (2011). Koran reading and negotiation with jinn: Strategies to deal with mental ill health among Swedish Somalis. *Mental Health, Religion & Culture, 14*, 741–755.
doi:10.1080/1364676.2010.521144
- Julkunen, R. (2010). *Sukupuolen järjestykset ja tasa-arvon paradoksit [Orders of gender and the paradoxes of equality]*. Tampere, Finland: Vastapaino.
- Juntunen, T., Weiste-Paakkanen, A., Tolonen, H., Koponen, P., Rask, S., Skogberg, N., ... Koskinen, S. (submitted). Factors affecting migrants' willingness to participate in the Migrant Health and Well-being Survey (Maamu) in Finland. Quantitative and qualitative viewpoints. Manuscript submitted for publication.
- Kaaya, S. F., Lee, B., Mbwambo, J. K., Smith-Fawzi, M. C., & Leshabari, M. T. (2008). Detecting depressive disorder with a 19-item local instrument in Tanzania. *International Journal of Social Psychiatry, 54*(1), 21–33. doi: 10.1177/0020764006075024
- Kaiser, B. N., Haroz, E. E., Kohrt, B. A., Bolton, P. A., Bass, J. K., & Hinton, D. E. (2015). “Thinking too much”: A systematic review of a common idiom of distress. *Social Sciences and Medicine, 147*, 170–183.
- Kessler, R. C. (2003). Epidemiology of women and depression. *Journal of Affective Disorders, 74*(1), 5-13. doi:10.1016/S0165-0327(02)00426-3
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Koretz, D., Merikangas, K. R., . . . National Comorbidity Survey Replication. (2003). The epidemiology of major depressive disorder: Results from the national comorbidity survey replication (NCS-R). *Jama, 289*(23), 3095-3105. doi:10.1001/jama.289.23.3095
- Kim, Heejung S., Sherman, D. K., Mojaverian, T., Sasaki, J. Y., Park, J., Suh, E. M., & Taylor, S. E. (2011). Gene-culture interaction: Oxytocin receptor polymorphism (OXTR) and emotion regulation. *Social Psychological and Personality Science, 2*, 665-672.
- Kim, J., Cho, M., Hong, J., Bae, J., Cho, S., Hahm, B., . . . Chang, S. (2015). Gender differences in depressive symptom profile: Results from nationwide general population surveys in Korea. *Journal of Korean Medical Science, 30*(11), 1659-1666. doi:10.3346/jkms.2015.30.11.1659
- Kirmayer, L. J. (1989). Cultural variations in the response to psychiatric disorders and emotional distress. *Social Science and Medicine, 29*, 327-339. doi:10.1016/0277-9536(89)90281-5
- Kirmayer, L. J. (2001). Cultural variations in the clinical presentation of depression and anxiety: Implications for diagnosis and treatment. *The Journal of Clinical Psychiatry, 62 Suppl 13*, 22.

- Kirmayer, L. J., Narasiah, L., Munoz, M., Rashid, M., Ryder, A. G., Guzder, J., . . . Canadian Collaboration for Immigrant and Refugee Health (CCIRH). (2011). Common mental health problems in immigrants and refugees: General approach in primary care. *Canadian Medical Association Journal*, *183*(12), 959-967. doi:10.1503/cmaj.090292
- Kirmayer, L. J., Robbins, J. M., Dworkind, M., & Yaffe, M. J. (1993). Somatization and the recognition of depression and anxiety in primary care. *American Journal of Psychiatry*, *150*(5), 734-741. doi:10.1176/ajp.150.5.734
- Kirmayer, A., & Sartorius, N. (2007). Cultural models and somatic syndromes. *Psychosomatic Medicine*, *69*, 832-840.
- Kitzinger, C., & Wilkinson, S. (1996). Theorizing representing the Other. In Wilkinson, S., & Kitzinger, C. (Eds.), *Representing the Other: A Feminisms & Psychology Reader* (pp. 1-32). London, UK: Sage.
- Klein, D N., Kotov, R., & Bufferd, S. J. (2011). Personality and depression: Explanatory models and review of the evidence. *Annual Review of Clinical Psychology*, *7*, 269-295. doi: 10.1146/annurev-clinpsy-032210-104540.
- Kleinman, A. (1977). Depression, somatization, and the new cross-cultural psychiatry. *Social Science and Medicine*, *11*, 3-10.
- Kleinman, A., & Benson, P. (2006). Anthropology and the clinic: The problem of cultural competency and how to fix it. *PLoS Medicine*, *3*, 1673-1676.
- Kleinman A., & Good, B. (1985). *Culture and Depression: Studies in the Anthropology and Cross-Cultural Psychiatry of Affect and Disorder*. Berkeley, CA: University of California Press.
- Kleinman, A., & Kleinman, J. (1985). Somatization: The interconnections in Chinese society among culture, depressive experiences, and the meanings of pain. In Kleinman A., & Good, B. (Eds.), *Culture and Depression: Studies in the Anthropology and Cross-Cultural Psychiatry of Affect and Disorder* (pp. 429-490). Berkeley, CA: University of California Press
- Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: The Guilford Press.
- Kokanovic, R., Dowrick, C., Butler, E., Herrman, H., & Gunn, J. (2008). Lay accounts of depression amongst Anglo Australian residents and East African refugees. *Social Science and Medicine*, *66*, 454-466.
- Konrath, S., Grynberg, D., Corneille, O., Hamming, S., & Luminet, O. (2011). On the social cost of interdependence: Alexithymia is enhanced among socially interdependent people. *Personality and Individual Differences*, *50*, 135-141. doi:10.1016/j.paid.2010.09.008
- Koshen, H. (2007). Strengths in Somali families. *Marriage & Family Review*, *41*, 71-99. doi:10.1300/J002v41n01_05
- Kotov, R., Krueger, R., Watson, D., Achenbach, T., Althoff, R., Bagby, R., . . . Zimmerman, M. (2017). The hierarchical taxonomy of psychopathology (HiTOP):

- A dimensional alternative to traditional nosologies. *Journal of Abnormal Psychology*, 126(4), 454-477. doi:10.1037/abn0000258
- Kroll, J., Yusuf, A. I., & Fujiwara, K. (2011). Psychoses, PTSD, and depression in Somali refugees in Minnesota. *Social Psychiatry and Psychiatric Epidemiology*, 46, 481–493. doi:10.1007/s00127-010-0216-0
- Kuehner C. (2003). Gender differences in unipolar depression: An update of epidemiological findings and possible explanations. *Acta Psychiatrica Scandinavica*, 108, 163-174. doi:10.1034/j.1600-0447.2003.00204.x
- Kuula, A. (2006). *Tutkimusetiikka: Aineistojen bankinta, käyttö ja säilytys* [Research Ethics: The collection, use, and archiving of data]. Tampere, Finland: Vastapaino.
- Lam, C. Y., Pepper, C. M., & Ryabchenko, K. A. Case identification of mood disorders in Asian American and Caucasian American college students. *Psychiatric Quarterly*, 75, 361-373. doi:10.1023/B:PSAQ.0000043511.13623.1b
- Lamers, F., Van Oppen, P., Comijs, H. C., Smit, J. H., Spinhoven, P., Van Balkom, Anton J. L. M., . . . Penninx, Brenda W. J. H. (2011). Comorbidity patterns of anxiety and depressive disorders in a large cohort study: The Netherlands study of depression and anxiety (NESDA). *Journal of Clinical Psychiatry*, 72(3), 342-348. doi:10.4088/JCP.10m06176blu
- Lawrence, V., Murray, J., Banerjee, S., Turner, S., Sangha, K., Byng, R., . . . Macdonald, A. (2006). Concepts and causation of depression: A cross-cultural study on the beliefs of older adults. *The Gerontologist*, 46, 23–32.
- Lee, S. (1999). Diagnosis postponed: Shenjing shuairuo and the transformation of psychiatry in post-Mao China. *Culture, Medicine and Psychiatry*, 23, 349–380. doi:10.1023/A:1005586301895
- Lee, B., Kaaya, S. F., Mbwambo, J. K., Smith-Fawzi, M. C., & Leshabari, M. T. (2008). Detecting depressive disorder with the Hopkins symptom checklist-25 in Tanzania. *International Journal of Social Psychiatry*, 54(1), 7–20. doi:10.1177/0020764006074995
- Leu, J., Wang, J., & Koo, K. (2011). Are positive emotions just as “positive” across cultures? *Emotion*, 11(4), 994–999.
- Lewis, I. M. (2008). *Understanding Somalia and Somaliland: Culture, History, Society*. London, UK: Hurst & Company.
- Lewis-Fernández, R., Aggarwal, N. K., Bäärnhielm, S., Rohloff, H., Kirmayer, L. J., Weiss, M. G., . . . Lu, F. (2014). Culture and psychiatric evaluation: Operationalizing Cultural Formulation for DSM-5. *Psychiatry*, 77(2), 130–154. doi:10.1521/psyc.2014.77.2.130
- Lewis-Fernández, R., & Kleinman, A. (1994). Culture, personality, and psychopathology. *Journal of Abnormal Psychology*, 103, 67–71.
- Lipowski, Z. J. (1988). Somatization: The concept and its clinical application. *The American Journal of Psychiatry*, 145(11), 1358. doi:10.1176/ajp.145.11.1358

- Loewenthal, D., Mohamed, A., Mukhopadhyay, S., Ganesh, K., & Thomas, R. (2012). Reducing the barriers to accessing psychological therapies for Bengali, Urdu, Tamil and Somali communities in the UK: Some implications for training, policy and practice. *British Journal of Guidance & Counselling*, 40(1), 43–66.
- Lohoff, F. W. (2010). Overview of the genetics of major depressive disorder. *Current Psychiatry Reports*, 12(6), 539-546. doi:10.1007/s11920-010-0150-6
- Lim, N. (2016). Cultural differences in emotion: Differences in emotional arousal level between the East and the West. *Integrative Medicine Research*, 5(2), 105-109. doi:10.1016/j.imr.2016.03.004
- Lim, A., Hoek, H. W., & Blom, D. (2015). The attribution of psychotic symptoms to jinn in Islamic patients. *Transcultural Psychiatry*, 52(1), 18–32. doi:10.1177/1363461514543146
- Linderborg, H. (2012). *Hennattuja partoja – Ikääntyvät somalimiehet ryhmätoiminnassa [Henna dyed beards – aging Somali men in group activities]*. Helsinki, Finland: University of Helsinki.
- Löytty, O. (2005). Toiseus [Otherness]. In Rastas, A., Huttunen, L., & Löytty, O. (Eds.), *Suomalainen vieraskirja: Kuinka käsitellä monikulttuurisuutta [Finnish Guestbook: How deal with multiculturalism]* (pp. 161-189). Tampere, Finland: Vastapaino.
- Luling, V. (2006). Genealogy as theory, genealogy as tool: aspects of Somali ‘clanship’. *Social Identities*, 12(4), 471–485.
- Lutz, C. A. (1985). Depression and the translation of emotional worlds. In A. Kleinman & B. Good (eds.), *Culture and depression: Studies in the anthropology and cross-cultural psychiatry of affect and disorder*, pp. 63-100. Berkeley, CA: University of California Press.
- Mai, F. (2004). Somatization disorder: A practical review. *Canadian Journal of Psychiatry*, 49(10), 652-662. doi:10.1177/070674370404901002
- Marchal, R. (2009). A tentative assessment of the Somali Harakat Al-Shabaab. *Journal of Eastern African Studies*, 3(3), 381-404. doi:10.1080/17531050903273701
- Markkula, N., Suvisaari, J., Saarni, S. I., Pirkola, S., Peña, S., Saarni, 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*, 1(173), 73–80. doi:10.1016/j.jad.2014.10.015
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98(2), 224-253. doi:10.1037/0033-295X.98.2.224
- Marsella, A. J. (1980). Depressive experience and disorder across cultures. In H. C. Triandis & J. G. Draguns (Eds.) *Handbook of Cross-Cultural Psychology: Psychopathology, Volume 6*, pp. 237-289. Boston, Massachusetts: Allyn and Bacon, Inc.
- Marsh, H. W., Morin, A. J., Parker, P. D., & Kaur, G. (2014). Exploratory structural equation modeling: An integration of the best features of exploratory and

- confirmatory factor analysis. *Annual Review of Clinical Psychology*, *10*, 85–110. doi:10.1146/annurev-clinpsy-032813-153700
- Maters, G. A., Sanderman, R., Kim, A. Y., & Coyne, J. C. (2013). Problems in cross-cultural use of the Hospital Anxiety and Depression Scale: “No butterflies in the desert”. *PLoS One*, *8*(8).
- Mathers, C. D., & Loncar, D. (2006). Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Med* *3*(11), e442. doi:10.1371/journal.pmed.0030442
- Matsumoto, D., & Yoo, S.H. (2006). Toward a new generation of cross-cultural research. *Perspectives on Psychological Science*, *1*, 234–250. doi:10.1111/j.1745-6916.2006.00014.
- McCabe, R., & Priebe, S. (2004). Explanatory models of illness in schizophrenia: Comparison of four ethnic groups. *British Journal of Psychiatry*, *185*, 25–30. doi:10.1192/bjp.185.1.25
- McCrone, P., Bhui, K., Craig, T., Mohamud, S., Warfa, N., Stansfeld, S. S., . . . Curtis, S. (2005). Mental health needs, service use and costs among Somali refugees in the UK. *Acta Psychiatrica Scandinavica*, *111*, 65–77.
- McMichael, C. (2003). *Memory and resettlement: Somali women in Melbourne and emotional well-being*. PhD thesis, Faculty of Medicine, Dentistry and Health Sciences, The University of Melbourne. Melbourne, Australia: University of Melbourne. Retrieved from https://minerva-access.unimelb.edu.au/bitstream/handle/11343/36550/273797_McMichael.pdf?sequence=1
- Middeldorp, C. M., Wray, N. R., Andrews, G., Martin, N. G., & Boomsma, D. I. (2006). Sex differences in symptoms of depression in unrelated individuals and opposite-sex twin and sibling pairs. *Twin Research and Human Genetics*, *9*(5), 632-636. doi:10.1375/183242706778553507
- Miettinen, A., & Rotkirch, A. (2012). *Yhteistä aikaa etsimässä [In the search for time together]*. Helsinki, Finland: Family federation.
- Miller, M. W., Fogler, J. M., Wolf, E. J., Kaloupek, D. G., & Keane, T. M. (2008). The internalizing and externalizing structure of psychiatric comorbidity in combat veterans. *Journal of Traumatic Stress*, *21*(1), 58-65. doi:10.1002/jts.20303
- Ministry of the Interior (2016). *Rapid increase in the number of asylum seekers*, 2016. Retrieved from http://www.intermin.fi/en/migration/refugees_and_asylum_seekers
- Miyamoto, Y., Boylan, J., Coe, C., Curhan, K., Levine, C., Markus, H., . . . Ryff, C. (2013). Negative emotions predict elevated interleukin-6 in the United States but not in Japan. *Brain Behavior and Immunity*, *34*, 79-85. doi:10.1016/j.bbi.2013.07.173
- Mofidi, N., Ghazinour, M., Araste, M., Jacobsson, L., & Richter, J. (2008). General mental health, quality of life and suicide-related attitudes among Kurdish people in Iran. *International Journal of Social Psychiatry*, *54*(5), 457-468. doi:10.1177/0020764008091663
- Mölsä, M., Hjelde, K. H., & Tiilikainen, M. (2010). Changing mental distress conceptions and practices among Somalis in Finland. *Transcultural Psychiatry*, *47*(290).

- Mölsä, M., Kuittinen, S., Tiilikainen, M., Honkasalo, M.-L., & Punamäki, R.-L. (2017). Mental health among older refugees: The role of trauma, discrimination, and religiousness. *Aging and Mental Health*, 21(8), 829-837.
- Mölsä, M., Punamäki, R. L., Saarni, S. I., Tiilikainen, M., Kuittinen, S., & Honkasalo, M. L. (2014). Mental and somatic health and pre-and post-migration factors among older Somali refugees in Finland. *Transcultural Psychiatry*, 51(4), 499-525.
- Mölsä, M. & Tiilikainen, M. (2008). Somalialaisten maahanmuuttajien ikääntymisen ja sairastamisen kokemuksia Suomessa [Somali migrants' experiences of aging and being ill in Finland]. *Sosiaalilääketieteellinen aikakauslehti*, 45(1), 59-73.
- Mölsä, M., Tiilikainen, M., & Punamäki, R.-L. (2017). Usage of health care services and preference for mental health care among older Somali immigrants in Finland. *Ethnicity & Health*, doi:10.1080/13557858.2017.1346182
- Mondimore, F. M. (2005). Kraepelin and manic-depressive insanity: An historical perspective. *International Review of Psychiatry*, 17(1), 49–52.
- Moskvina, V., Farmer, A., Jones, I. R., Brewster, S., Ferrero, F., Gill, M., . . . Korszun, A. (2008). Sex differences in symptom patterns of recurrent major depression in siblings. *Depression and Anxiety*, 25(6), 527-534. doi:10.1002/da.20372
- Mosotho, N. L., Louw, D. A., Calitz, F. J. W., & Esterhuy, K. G. F. (2008). Depression among Sesotho speakers in Mangaung, South Africa. *African Journal of Psychiatry*, 11, 35-43.
- Mouanoutoua, V. L., & Brown, L. (1995). Hopkins Symptom Checklist-25, Hmong version: A screening instrument for psychological distress. *Journal of Personality Assessment*, 64(2), 376–383.
- Moussavi, S., Chatterji, S., Verdes, E., Tandon, A., Patel, V., & Ustun, B. (2007). Depression, chronic diseases, and decrements in health: Results from the World Health Surveys. *The Lancet*, 370, 851–858. doi:10.1016/S0140-6736(07)61415-9
- National Institute for Health and Welfare (n.d.). *PALOMA kehittää pakolaisten mielenterveyspalveluita [PALOMA improves mental health care services for refugees]*. Retrieved from <http://www.thl.fi/paloma>
- Nichter, M. (1981). Idioms of distress: Alternatives in the expression of psychosocial distress: A case study from South India. *Culture, Medicine, and Psychiatry*, 5, 379–408.
- Norenzayan, A., & Heine, S. J. (2005). Psychological universals: What are they and how can we know? *Psychological Bulletin*, 131(5), 763-784. doi:10.1037/0033-2909.131.5.763
- Olliffe, J. L., & Phillips, M. J. (2008). Men, depression and masculinities: A review and recommendations. *Journal of Men's Health*, 5(3), 194-202.
- Omar, M. A. (1986). Developments in mental health services in Somalia. *NIMHANS Journal* 4(2), 131–132.
- Omar, Y. S. (2016). Identity and sense of belonging of young Somali men in a Western context: Case studies from Melbourne and Minneapolis. *Bildhaan: An International Journal of Somali Studies*, 16.

- Omar, Y. S., Jenkins, A., Altena, M., Tuck, H., Hynan, C., Tohow, A., Chopra, P., & Castle, D. (2015). Khat use: What is the problem and what can be done? *Biomed Research International*, 1-7. doi: 10.1155/2015/472302
- Onyut, L. P., Neuner, F., Ertl, V., Schauer, E., Odenwald, M., & Elbert, T. (2009). Trauma, poverty and mental health among Somali and Rwandese refugees living in an African refugee settlement – an epidemiological study. *Conflict and Health*, 3(1), 1-16. doi: 10.1186/1752-1505-3-6
- Parker, G., Cheah, Y.-C., & Roy, K. (2001). Do the Chinese somatize depression? A cross-cultural study. *Social Psychiatry and Psychiatric Epidemiology*, 36, 287–293. doi:10.1007/s001270170046
- Parpola, A. (2013). *Toivo/Häpeä. Psykiatria modernissa Suomessa. [Hope/Shame. Psychiatry in modern Finland]*. Helsinki, Finland: Finnish Psychiatric Association.
- Patel, V., Simunyu, E., & Gwanzura, F. (1995). “Kufungisisa (Thinking Too Much): A Shona idiom for non-psychotic mental illness.” *Central African Journal of Medicine*, 41(7), 209–215.
- Patel, V. & Stein, D. J. (2015). Common Mental Disorders in Sub-Saharan Africa: The Triad of Depression, Anxiety, and Somatization. In E. Akyeampong, A. Hill, & A. Kleinman (Eds.), *The Culture of Mental Illness and Psychiatric Practice in Africa* (pp. 50-72). Indianapolis, Indiana: Indiana University Press.
- Poortinga, Y. (2015). Is Culture a workable concept in Cross-Cultural Psychology? *Online Readings in Psychology and Culture. International Association for Cross-Cultural Psychology*, 2(1). doi: 10.9707/2307-0919.1139
- Poortinga, Y. H., van de Vijver, F. J. R., Joe, R. C., & van de Koppel, J. M. H. (1987). Peeling the onion called culture: A synopsis. In C. Kagitcibasi (Ed.), *Growth and progress in cross-cultural psychology* (pp. 22–34). Berwyn, PA: Swets North America.
- Porter, M., & Haslam, N. (2005). Predisplacement and postdisplacement factors associated with mental health of refugees and internally displaced persons: A meta-analysis. *Journal of the American Medical Association*, 294(5), 602–612. doi:10.1001/jama.294.5.602
- Powers, D. V., Thompson, L., Futterman, A., & Gallagher-Thompson, D. (2002). Depression in later life: Epidemiology, assessment, impact, and treatment. In I. H. Gotlieb, & C. L. Hammen (Eds.), *Handbook of Depression* (pp. 560-580). New York, US: The Guilford Press.
- Priebe, S., Giacco, D., & El-Nagib, R. (2016). *Public health aspects of mental health among migrants and refugees: a review of the evidence on mental health care for refugees, asylum seekers and irregular migrants in the WHO European Region*. Copenhagen: WHO Regional Office for Europe.
- Rantala, M. J., Luoto, S., Krams, I., & Karlsson, H. (2017). Depression subtyping based on evolutionary psychiatry: proximate mechanisms and ultimate functions. *Brain, Behavior, and Immunity*. doi:10.1016/j.bbi.2017.10.012.

- Rask, S., Suvisaari, J., Koskinen, S., Koponen, P., Mölsä, M., Lehtisalo, R., . . . Castaneda, A. E. (2016). The ethnic gap in mental health: A population-based study of Russian, Somali and Kurdish origin migrants in Finland. *Scandinavian Journal of Public Health*, 44(3), 281-290. doi:10.1177/1403494815619256
- Rask, S., Paavonen, A.-M., Lilja, E., Koponen, P., Suvisaari, J., Halla, T., Koskinen, S., & Castaneda, A. E. (2016). Primääriperheestä erossaolo on yhteydessä somalialais- ja kurditaustaisten maahanmuuttaja-aikuisten hyvinvointiin ja kotoutumiseen Suomessa [Separation from childhood family is associated with Somali and Kurdish origin migrants' wellbeing and acculturation in Finland]. *Yhteiskuntapolitiikka*, 81(3), 273-287.
- Rasmussen, A., Eustache, E., Raviola, G., Kaiser, B., Grelotti, D. J., & Belkin, G. S. (2015). Development and validation of a Haitian Creole screening instrument for depression *Transcultural Psychiatry*, 52(1), 33–57. doi:10.1177/1363461514543546
- Rauta, A. (2005). *Report on immigrants' need for mental health services and access to them*. Helsinki, Finland: Reports of the Ministry of Social Affairs and Health Finland.
- Read, J., Haslam, N., Sayce, L., & Davies, E. (2006). Prejudice and schizophrenia: A review of the “mental illness is an illness like any other” approach. *Acta Psychiatrica Scandinavica*, 114, 303–318.
- Regier, D. A., Narrow, W. E., Clarke, D. E., Kraemer, H. C., Kuramoto, S. J., Kuhl, E. A., & Kupfer, D. J. (2013). DSM-5 field trials in the United States and Canada, part II: Test-retest reliability of selected categorical diagnoses. *American Journal of Psychiatry*, 170(1), 59-70. doi:10.1176/appi.ajp.2012.12070999
- Rivelli, F. (2010). *A situation analysis of mental health in Somalia*. WHO Somalia Liaison Office. Retrieved from http://applications.emro.who.int/dsaf/EMROPUB_2010_EN_736.pdf
- Robins, J., Rotnitzky, A., & Zhao, L. (1994). Estimation of regression coefficients when some regressors are not always observed. *Journal of American Statistical Association*, 89, 846–866.
- Rohlof, H. G., Knipscheer, J. W., & Kleber, R. J. (2014). Somatization in refugees: A review. *Social Psychiatry and Psychiatric Epidemiology*, 49, 793–1804. doi:10.1007/s00127-014-0877-1
- Royo-Moreno, L., Livianos-Aldana, L., Cervera-Martínez, G., Dominguez Carabantes, J. A., & Reig-Cebrian, M. J. (2002). The role of stress in the onset of depressive disorders. *Social Psychiatry and Psychiatric Epidemiology*, 37, 592–598.
- Ryan, J. (2007). *Going “walli” and having “jinni”*. *Exploring Somali expressions of psychological distress and approaches to treatment*. PhD thesis, University of Waikato, New Zealand. New Zealand: University of Waikato. Retrieved from <http://researchcommons.waikato.ac.nz/bitstream/handle/10289/2617/thesis.pdf?sequence=1&isAllowed=y>

- Ryder, A. G., Ban, L. M., & Chentsova-Dutton, Y. E. (2011). Towards a Cultural-Clinical Psychology. *Social and Personality Psychology Compass*, 5(12), 960–975. doi:10.1111/j.1751-9004.2011.00404.x
- Ryder, A. G., & Chentsova-Dutton, Y. E. (2012). Depression in cultural context: “Chinese somatization” revisited. *Psychiatric Clinics of North America*, 35, 15–36.
- Ryder, A. G., Yang, J., Zhu, X., Yao, S., Yi, J., Heine, S. J., & Bagby, R. M. (2008). The cultural shaping of depression: Somatic symptoms in China, psychological symptoms in North America? *Journal of Abnormal Psychology*, 117, 300–313.
- Saraga, M., Gholam-Rezaee, M., & Preisig, M. (2013). Symptoms, comorbidity, and clinical course of depression in immigrants: Putting psychopathology in context. *Journal of Affective Disorders*, 151(2), 795–799. doi:10.1016/j.jad.2013.07.001
- Sayar, K., Kirmayer, L., & Taillefer, S. (2003). Predictors of somatic symptoms in depressive disorder. *General Hospital Psychiatry*, 25, 108–114. doi:10.1016/S0163-8343(02)00277-3
- Sasaki, J. Y., & Kim, H. S. (2017). Nature, nurture, and their interplay: A review of cultural neuroscience. *Journal of Cross-Cultural Psychology*, 48(1), 4–22. doi:10.1177/0022022116680481
- Schieffelin, E. L. (1985). The cultural analysis of depressive affect: An example from New Guinea. In Kleinman, A., & Good, B. (Eds.), *Culture and Depression: Studies in the Anthropology and Cross-Cultural Psychiatry of Affect and Disorder* (pp. 101–133). Berkeley, CA: University of California Press.
- Schnittker, J. (2008). An uncertain revolution: Why the rise of a genetic model of mental illness has not increased tolerance. *Social Science & Medicine*, 67, 1370–1381.
- Schwartz, S. (2006). A theory of cultural value orientations: Explication and applications. *Comparative Sociology*, 5, 137–182. doi:10.1163/156913306778667357
- Scollon, C. N., Diener, E., Oishi, S., & Biswas-Diener, R. (2004). Emotions across cultures and methods. *Journal of Cross-Cultural Psychology*, 35(3), 304–326.
- Shweder, R. (1993). Cultural Psychology: Who needs it? *Annual Review of Psychology*, 44, 497–523.
- Schwartz, T., White, G., & Lutz, C. (1992). *New Directions in Psychological Anthropology*. Cambridge, UK: Cambridge University Press.
- Scuglik, D., Alarcon, R., Lapeyre, A., Williams, M., & Logan, K. (2007). When the poetry no longer rhymes: Mental health issues among Somali immigrants in the USA. *Transcultural Psychiatry*, 44(4), 581–595. doi: 10.1177/1363461507083899
- Shah, A. (2009). Psychiatry of old age and ethnic minority older people in the United Kingdom. *Reviews in Clinical Gerontology*, 19, 119–134. doi:10.1017/S0959259809990190
- Shorter, E. (1992). *From Paralysis to Fatigue: A History of Psychosomatic Illness in the Modern Era*. New York, NY: The Free Press.
- Shorter, E. (2013). *How Everyone Became Depressed: The Rise and Fall of the Nervous Breakdown*. Oxford, New York: Oxford University Press.

- Silveira, E., & Allebeck, P. (2001). Migration, ageing and mental health: An ethnographic study on perceptions of life satisfaction, anxiety and depression in older Somali men in east London. *International Journal of Social Welfare*, *10*(4), 309–320.
- Silveira, E. R., & Ebrahim, S. (1998). Social determinants of psychiatric morbidity and well-being in immigrant elders and whites in east London. *International Journal of Geriatric Psychiatry*, *13*(11), 801-812. doi:10.1002/(SICI)1099-1166(1998110)13:11<801::AID-GPS876>3.0.CO;2-Z
- Simon, G. E., VonKorff, M., Piccinelli, M., Fullerton, C., & Ormel, J. (1999). An international study of the relation between somatic symptoms and depression. *The New England Journal of Medicine*, *341*(18), 1329-1335. doi:10.1056/NEJM199910283411801
- Slikkerveer, L. J. (1990). *Plural Medical Systems in the Horn of Africa: The legacy of "Sheikh" Hippocrates*. London, UK: Kegan Paul International.
- Somalis in Helsinki*. (2013). New York, NY: Open Society Foundations. Retrieved from <http://www.opensocietyfoundations.org/sites/default/files/somalis-helsinki-20131121.pdf>
- Sorsdahl, K. R., Flisher, A. J., Wilson, Z., & Stein, D. J. (2010). Explanatory models of mental disorders and treatment practices among traditional healers in Mpumalanga, South Africa. *African Journal of Psychiatry*, *3*, 284–290.
- Suh, E., Diener, E., Oishi, S., & Triandis, H. C. (1998). The shifting basis of life satisfaction judgements across cultures: Emotions versus norms. *Journal of Personality and Social Psychology*, *74*(2), 482.
- Sullivan, P. F., Neale, M. C., & Kendler, K. S. (2000). Genetic epidemiology of major depression: Review and meta-analysis. *American Journal of Psychiatry*, *157*(10), 1552-1562. doi:10.1176/appi.ajp.157.10.1552
- Suojanen, P. (1996). *Kulttuurien tutkijan arki: Kokemuksia omasta ja vierasta [Everyday Life of a Cultural Researcher: Experiences of Own and Otherness]*. Jyväskylä, Finland: Antrokirjat.
- Statistics Finland (n.d.^a). *Persons with Foreign Background 2015*. Retrieved from http://www.stat.fi/tup/maahanmuutto/maahanmuuttajat-vaestossa/ulkomaalaistaustaiset_en.html
- Statistics Finland (n.d.^b). *Foreign-language Speakers 2016*. Retrieved from http://www.stat.fi/tup/maahanmuutto/maahanmuuttajat-vaestossa/vieraskieliset_en.html
- Sterlin, C. (2006). Pour une approche interculturelle du concept de santé [For an intercultural approach to the concept of health]. *Ruptures, Revue Transdisciplinaire en Santé*, 1112–121.
- Syed, H. R., Zachrisson, H. D., Dalgard, O. S., Dalen, I., & Ahlberg, N. (2008). Concordance between Hopkins Symptom Checklist (HSCL-10) and Pakistan Anxiety and Depression Questionnaire (PADQ), in a rural self-motivated population in Pakistan. *BMC Psychiatry*, *8*(59), 1–12. doi:10.1186/1471-244X-8-59

- Taylor, G. (2000). Recent developments in alexithymia theory and research. *Canadian Journal of Psychiatry*, 45, 134-142. doi:10.1177/070674370004500203
- Taylor, G., Bagby, R., & Parker, J. (2003). The 20-item Toronto Alexithymia Scale: IV. Reliability and factorial validity in different languages and cultures. *Journal of Psychosomatic Research*, 55, 277-283. doi:10.1016/S0022-3999(02)00601-3
- Ten Berge, J. (1986). Some relationships between descriptive comparisons of components from different studies. *Multivariate Behavioral Research*, 21, 29-40.
- Tiilikainen, M. (2000). Aspects of suffering and religious healing among Somali refugees. In T. Hove & A. Puuronen, (Eds.), *Traditions of Belief in Everyday Life* (pp. 187-201). Turku, Finland: Åbo Akademi.
- Tiilikainen, M. (2003). *Arjen islam: Somalinaisten elämää Suomessa*. [Everyday Islam: Somali women's life in Finland]. Tampere, Finland: Vastapaino.
- Tiilikainen, M. (2010). Somali Saar in the era of social and religious change. In B. E. Schmidt & L. Huskinson (Eds.), *Spirit Possession and Trance: New Interdisciplinary Perspectives* (pp. 117-133). London, UK: Continuum.
- Tiilikainen, M. (2011). Failed diaspora: Experiences of dhaqan celis and mentally ill returnees in Somaliland. *Nordic Journal of African Studies*, 20(1), 71–89.
- Tiilikainen, M. (2013). Illness, healing, and everyday Islam: Transnational lives of Somali migrant women. In N. M. Dessing, N. Jeldtoft, J. S. Nielsen, & L. Woodhead (Eds.), *Everyday Lived Islam in Europe* (pp. 147-162). Surrey, UK: Ashgate.
- Tiilikainen, M., & Koehn, P. H. (2011). Transforming the boundaries of health care: Insights from Somali migrants. *Medical Anthropology*, 30, 518–544. doi:10.1080/01459740.2011.577288
- Tikkinen, K. A. O., Leinonen, J. S., Guyatt, G. H., Ebrahim, S., & Järvinen, T. (2012). What is a disease? Perspectives of the public, health professionals, and legislators. *British Medical Journal Open*, 2(6), 1–8. doi:10.1136/bmjopen-2012-001632
- Tilbury, F. (2007). “I feel I am a bird without wings”: Discourses of sadness and loss among East Africans in Australia. *Identities: Global Studies in Culture and Power*, 14(4), 433-458. doi: 10.1080/10702890701578464
- Tsai, J. L. & Chentsova-Dutton, Y. (2002). Understanding depression across cultures, In I. H. Gotlieb & C. L. Hammen (Eds.) *Handbook of Depression* (pp. 467-491). New York, NY: The Guilford Press.
- United Nations (2012). *Classification of Countries by Major Area and Region of the World*. Retrieved from <http://www.unep.org/tunza/tunzachildren/downloads/country-Classification.pdf>
- United Nations, Department of Economic and Social Affairs, Population Division (2017). *World Population Prospects: The 2017 Revision*. New York, NY: United Nations. Retrieved from https://esa.un.org/unpd/wpp/Publications/Files/WPP2017_KeyFindings.pdf
- United Nations High Commissioner for Refugees (2001-2016). *Facts and figures about refugees*. Retrieved from <http://www.unhcr.org.uk/about-us/key-facts-and-figures.html>.

- United Nations High Commissioner for Refugees (2016). *UNHCR Global Trends: Forced displacement 2015*. Retrieved from <http://www.unhcr.org/statistics/unhcrstats/576408cd7/unhcr-global-trends-2015.html>
- van Ommeren, M., Sharma, B., Thapa, S., Makaju, R., Prasain, D., Bhattarai, R., & de Jong, J. (1999). Preparing instruments for transcultural research: Use of the Translation Monitoring Form with Nepali-Speaking Bhutanese refugees. *Transcultural Psychiatry*, *36*, 285–301.
- van de Vijver, F., & Leung, K. (2011). Equivalence and bias: A review of concepts, models, and data analytic procedures. In Matsumoto, D. R., & Vijver, F. J. R. van de. (Eds). *Cross-Cultural Research Methods in Psychology*, (pp. 17-45). Cambridge, UK: Cambridge University Press.
- van de Vijver, F., & Tanzer, N. K. (2004). Bias and equivalence in cross-cultural assessment: An overview. *Revue Européenne de Psychologie Appliquée*, *54*, 119–135.
- Velázquez, R., Jokela, M., & Rosenström, T. H. (2017). Symptom severity and disability in psychiatric disorders: The U.S. Collaborative Psychiatric Epidemiology Survey, *Journal of Affective Disorders*. doi:10.1016/j.jad.2017.07.015
- Ventevogel, P., De Vries, G., Scholte, W. F., Shinwari, N. R., Nassery, H. F. R., van den Brink, W., & Olf, M. (2007). Properties of the Hopkins Symptom Checklist-25 (HSCL-25) and the Self-Reporting Questionnaire (SRQ-20) as screening instruments used in primary care in Afghanistan. *Social Psychiatry and Psychiatric Epidemiology*, *42*, 328–335. doi:10.1007/s00127-007-0161-8
- Ventevogel, P., Jordans, M., Reis, R., & de Jong, J. (2013). Madness or sadness? Local concepts of mental illness in four conflict-affected African communities. *Conflict and Health*, *7*(3), doi:10.1186/1752-1505-7-3
- Wakefield, J. C., & First, M. B. (2012). Validity of the bereavement exclusion to major depression: Does the empirical evidence support the proposal to eliminate the exclusion in DSM-5? *World Psychiatry*, *11*, 3–10.
- Waller, E., & Scheidt, C. E. (2006). Somatoform disorders as disorders of affect regulation: A development perspective. *International Review of Psychiatry*, *18*, 13-24.
- Warfa, N., Klein, A., Bhui, K., Leavey, G., Craig, T., & Stansfeld, S. A. (2007). Khat use and mental illness: a critical review. *Social Science & Medicine*, *65*(2), 309-318.
- Weaver, J., & Kaiser, B. (2015). Developing and testing locally-derived mental health scales: Examples from North India and Haiti. *Field Methods*, *27*, 115–130.
- Wedel, J. (2012). Mental Health Problems and Healing among Somalis in Sweden. *Bildhaan: An International Journal of Somali Studies*, *11*(11).
- Weiss, M. G., & Somma, D. (2007). Explanatory models in psychiatry. In D. Bhugra, & K. Bhui (Eds.), *Textbook of Cultural Psychiatry* (pp. 127–140). New York, NY: Cambridge University Press.
- Weissman, M., Bland, R., Canino, G., Faravelli, C., Greenwald, S., Hwu, H., . . . Yeh, E. (1996). Cross-national epidemiology of major depression and bipolar disorder.

- Journal of the American Medical Association*, 276(4), 293-299.
- Wellenkamp, J. (1995). Cultural similarities and differences regarding emotional disclosure: Some examples from Indonesia and the Pacific. In Pennebaker, J. (Ed.), *Emotion, Disclosure, and Health* (pp. 293-313). Washington, DC: American Psychological Association.
- Wheeler, C. L. (1909). "The American Disease": Neurasthenia. What are the causes? What is the remedy? New York, NY: The Bauer Chemical Company. Retrieved from <http://lcweb2.loc.gov/service/gdc/scd0001/2003/20031204002am/20031204002am.pdf>
- White, G. M. (1982). The role of cultural explanations in "somatization" and "psychologization." *Social Science and Medicine*, 16, 1519–1530.
- Willis, G. B. (2015). The practice of cross-cultural cognitive interviewing. *Public Opinion Q*, 79, 359-395. doi: 10.1093/poq/nfu092
- Wright, A. G. C., Krueger, R. F., Hobbs, M. J., Markon, K. E., Eaton, N. R., & Slade, T. (2013). The structure of psychopathology: Toward an expanded quantitative empirical model. *Journal of Abnormal Psychology*, 122(1), 281–294. <http://doi.org/10.1037/a0030133>
- World Bank. (2013). *Life expectancy at birth, total (years)* [table]. The World Bank Group. Retrieved from <http://data.worldbank.org/indicator/SP.DYN.LE00.IN>
- World Health Organization (2016). *International Statistical Classification of Diseases and Related Health Problems 10th Revision, Version:2016*. Available at: <http://apps.who.int/classifications/icd10/browse/2016/en>
- Zarowsky, C. (2004). Writing trauma: Emotion, ethnography, and the politics of suffering among Somali returnees in Ethiopia. *Culture, Medicine and Psychiatry*, 28(2), 189-209. doi:10.1023/B:MEDI.0000034410.08428.29
- Zhou, X., Peng, Y., Zhu, X., Yao, S., Dere, J., Chentsova-Dutton, Y. E., & Ryder, A. G. (2016). From culture to symptom: Testing a structural model of "Chinese somatization". *Transcultural Psychiatry*, 53(1), 3–23. doi: 10.1177/13634615155589708
- Zimmerman, M., Ellison, W., Young, D., Chelminski, I., & Dalrymple, K. (2015). How many different ways do patients meet the diagnostic criteria for major depressive disorder? *Comprehensive Psychiatry*, 56, 29-34. doi:10.1016/j.comppsy.2014.09.007

ORIGINAL PUBLICATIONS

Depressive Symptoms and Their Psychosocial Correlates Among Older Somali Refugees and Native Finns

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Abstract

In this study, we analyzed the manifestation of somatic-affective and cognitive depressive symptoms among older Somali refugees and native Finns. Second, we explored how depressive symptoms, alexithymia, and somatization are associated in the two groups. Finally, we analyzed how two psychosocial factors, sense of coherence (SOC) and social support, are connected to depressive symptoms among Somalis and Finns. The participants were examined with the Beck Depression Inventory (BDI) for depressive symptoms, the Symptom Checklist–90–Revised (SCL-90-R) for somatization, Toronto Alexithymia Scale (TAS-20) for alexithymia, and the Sense of Coherence (SOC-13) concept for SOC. Social support was indicated by help received from social networks and marital status. Results showed that Somalis manifested more somatic-affective symptoms of depression than Finns, whereas Finns manifested more cognitive symptoms than Somalis. The association between depressive symptoms and alexithymia was stronger in the Finnish group, whereas the association between depressive symptoms and somatization was stronger in the Somali group. The association between alexithymia and somatization did not differ between the groups. A weak SOC explained depressive symptoms among Somalis and Finns, but poor social support did not explain depression in either group. The results are discussed in relation to Somali and Finnish cultures, mental health beliefs, and immigrant populations.

Keywords

depression, Somalis, Finns, older adults, refugees

A widely discussed topic in cross-cultural research is how psychiatric problems such as depression are manifested across sociocultural contexts and what factors are associated with psychological well-being in different ethnic and cultural groups. Previous studies suggested that the rates of psychological and somatic depressive symptoms in particular can vary cross-culturally

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(e.g., Ballenger et al., 2001; Simon, VonKorff, Piccinelli, Fullerton, & Ormel, 1999). Some researchers have suggested that individual deficiencies in emotional processing, that is, alexithymia, might explain some of the symptom variation in different populations (Konrath, Grynberg, Corneille, Hamming, & Luminet, 2011; Sayar, Kirmayer, & Taillefer, 2003). In addition, psychosocial factors relevant to depression may vary from one culture to another. For instance, psychological factors can be decisive in cultures that value individual characteristics and responsibilities, whereas social factors can be more crucial in cultures that place high importance on social relationships (e.g., Sastry & Ross, 1998). Our study adds to the research by comparing the manifestation of somatic-affective and cognitive depressive symptoms and their psychosocial correlates between older (above 50 years old) Somali refugees and native Finns in a matched-pair setting. We also examined the associations among alexithymia, depressive symptoms, and somatization in the two groups. Although 50-year-olds are not considered old in Finland, they are in Somalia where life expectancy is approximately 54 years (e.g., World Bank, 2013).

Manifestation of Depression

Epidemiological studies have revealed that depression is globally the most common psychiatric disorder (Bromet et al., 2011) and one of the leading causes of disease burden worldwide (Moussavi et al., 2007). However, the reported prevalence rates vary considerably across countries (World Health Organization [WHO], 2001) and within specific groups. For instance, women express more depressive symptoms than men across different cultures and living conditions (Kuehner, 2003). Furthermore, high prevalence rates of depression have been found among refugees (Fazel, Wheeler, & Danesh, 2005), whereas other migrant groups do not invariably display more psychiatric problems than native populations (e.g., Bhugra, 2003). Rates of manifested psychological distress also vary across ethnic groups. Comparative population-based studies have revealed less anxiety, posttraumatic stress disorder (PTSD), and depression among Somalis than among other refugee groups in the Netherlands (Gerritsen et al., 2006) and the United Kingdom (Silveira & Ebrahim, 1998). Researchers have explained these findings on one hand by the cultural stigma and taboo of mental illness in the Somali culture and on the other by good healing networks within Somali communities.

The frequency of specific depressive symptoms varies according to sociocultural contexts (Weissman et al., 1996). Earlier research has dichotomized symptom manifestation in whether depression is expressed mainly through somatic symptoms, such as sleeping difficulties and bodily pains, or through psychological symptoms, such as verbalizing depressive feelings and excessive self-criticism (e.g., Halbreich et al., 2007; Marsella, Sartorius, Jablensky, & Fenton, 1985). The general theoretical framework holds that societies with predominantly collectivist values emphasize social harmony over individuals' rights to express emotions and thoughts freely. Therefore, in these societies, indirect expressions of distress through bodily sensations and other somatic symptoms can be appropriate means of communicating psychological problems (e.g., Kleinman & Kleinman, 1985). Accordingly, somatic symptoms of depression have been frequently reported in some Asian (Ryder et al., 2008), African (Binitie, 1981), Latin American, and Indian populations (Halbreich et al., 2007). Although studies on depression among Somalis are lacking, there is some evidence that Somali refugees commonly express psychological distress through somatic complaints (Bhui et al., 2003; Silveira & Ebrahim, 1995). In turn, in societies with predominantly individualist values subjective emotional experience is considered important. Accordingly, expressions of psychological distress that involve a pronounced concentration on emotional experience and verbal analysis of mood states, that is, psychological depressive symptoms, seem to be characteristic of North American and Western European societies (e.g., Draguns & Tanaka-Matsumi, 2003).

Researchers have also criticized the simplistic claim of somatizing cultures. Empirical evidence has confirmed that somatic symptoms seem to be a central characteristic of depression across cultures (Kirmayer, Robbins, & Dworkind, 1993; Simon et al., 1999). The differences in symptom manifestation across ethnic groups may instead reflect the dominance of psychological symptoms over somatic expression in Western cultures (Parker, Cheah, & Roy, 2001; Ryder et al., 2008) where the dichotomous separation of mind and body may impede the recognition of somatic symptoms as part of depression (Draguns & Tanaka-Matsumi, 2003). Furthermore, instead of contrasting somatic and psychological symptoms as “either-or,” it could be useful to view the symptom types independently of each other. For example, individuals in many Arab cultures commonly express somatic symptoms and emotional distress at the same time (Al-Issa, 2000).

However, the majority of the empirical evidence on cultural differences in symptom manifestation in depression comes from comparisons of societies of British descent such as Canada and the United States with Asian populations (e.g., Ryder et al., 2008; Yen, Robins, & Lin, 2000), whereas other groups are underrepresented in the literature.

Alexithymia and Somatization

As a way to explain the mechanisms that underpin the manifestation of somatic and psychological depressive symptoms, researchers have looked into deficiencies in emotional processing (Taylor, 2000; Waller & Scheidt, 2006). Alexithymia is a universal personality characteristic involving difficulties in identifying and describing emotions and in reflecting on inner states that varies within cultures (Taylor, Bagby, & Parker, 2003). However, some researchers suggest that alexithymic tendencies could contribute to somatic symptoms especially in cultures that do not encourage open emotional expression and reflecting on internal experience (Dion, 1996). Accordingly, high levels of alexithymia have been found to predict somatic depressive symptoms in some societies with collectivist orientation, such as Turkey (Sayar et al., 2003). High levels of alexithymia have also been found among Asians with interdependent self-construals that are typical of collectivist societies (Konrath et al., 2011).

However, in an effort to explain the associations between alexithymia and somatic symptoms, researchers have examined the components of the alexithymia phenomenon. Scholars have found that difficulties in reflecting on inner states, measured with the Externally Oriented Thinking (EOT) subscale, are related to cultural values such as the tendency not to consider inner emotional experience particularly important, which is typical of many East Asian populations (Dere, Falk, & Ryder, 2012; Dere et al., 2013; Ryder et al., 2008). Thus, it seems that at least in some East Asian populations, high alexithymia scores are not related to individual difficulties in emotional processing but to cultural characteristics that cause alexithymia rates to be overestimated. Studies have also found poor internal consistencies of the EOT outside European and North American contexts that threaten the usefulness of the subscale in measuring alexithymia cross-culturally (Dere et al., 2012; Dere et al., 2013).

Psychosocial Factors Related to Depression

Similar to the variation in depressive symptoms, the risk factors and psychosocial correlates associated with depression could differ across cultures (Abu-Kaf & Priel, 2008). For instance, feelings of personal control have been found to predict life satisfaction better in individualist than in collectivist populations (Sastry & Ross, 1998; Suh, Diener, Oishi, & Triandis, 1998). The important role of individual agency can be conceptualized by the Sense of Coherence (SOC; Antonovsky, 1979) concept. Accordingly, the role of SOC in contributing to mental health has been confirmed in many European and North American societies. For instance, a strong SOC was associated with good well-being among older adults in Sweden (Lundman et al., 2010) and

among older psychiatric patients in Canada (Chimich & Nekolaichuk, 2004). A weak SOC, characterized by difficulties in comprehending life events and finding purpose in life, instead, was associated with depression in a Finnish community sample (Luutonen, Sohlman, Salokangas, Lehtinen, & Dowrick, 2011).

Less consistent findings for the role of SOC in mental health are available outside European and North American societies (Erikson & Lindström, 2006). Some controversy remains whether SOC is a valid concept in cultures that stress collectivist values (Erim et al., 2011). Furthermore, according to some studies among refugees, weak SOC and depressive experiences are overlapping phenomena, as both indicate helplessness and loss of control (Roth & Ekblad, 2006).

In societies that value social networks and cohesion, factors such as appropriate support and a feeling of belonging can be especially important for well-being. Accordingly, a study showed that an increase in social problems was associated with higher depressive rates among Somali immigrants than among native British citizens (Silveira & Ebrahim, 1998). Researchers have also found that social support functioned as a protective factor against psychological distress among Somalis when they faced physical disability (Silveira & Allebeck, 2001). In Finland, a study found that Somali immigrants believed that a lack of social support is a central cause of psychological distress (Mölsä, Hjelde, & Tiilikainen, 2010). Nevertheless, some studies among older adults have not found associations between network size, satisfaction with social support, and depression (Han, Kim, Lee, Pistulka, & Kim, 2007) or between receiving help from social networks and depression (Cruza-Guet, Spokane, Caskie, Brown, & Szapocznic, 2008).

Context of the Study

We focused on the manifestation of depressive symptoms and related psychosocial factors among older Somali refugees and native Finns. The terms *Somalis* and *Finns* refer to ethnic background, not to citizenship. The majority of the Somali participants came to Finland as refugees and only a few through family reunification or other methods. Therefore, we considered the term *refugee* the most representative despite the group's slight heterogeneity.

Finland is a Nordic country with approximately 5,400,000 inhabitants (Statistics Finland, 2013). The official languages are Finnish and Swedish, although many services are also available in English. Compared with other European countries, Finland's immigrant population is very small. The number of foreign residents calculated by native language was 267,000, that is, 4.9% of the total population, in 2012 (Statistics Finland, 2013). The biggest foreign language groups were Russians (62,500), Estonians (38,400), and Somalis (14,800). This makes Somalis the largest group originating from Africa, the largest ethnic group with a refugee background as well as the largest Muslim group in Finland.

The civil war in Somalia has continued since 1988, forcing civilians to migrate en masse to other countries. The estimated number of Somalis living in the diaspora is around 1 to 1.5 million (Hammond et al., 2011). The first Somali refugees arrived in Finland in the 1990s, and since then, the number has increased, due to family reunifications and children born in Finland as well.

Because of their physical appearance and Muslim religion, Somalis are commonly perceived as very different and culturally distant from Finns. In general, everyday contact and friendships among Somalis and Finns are rare, and many Somalis report having experienced prejudice and racism (Jasinskaja-Lahti, Liebkind, & Perhoniemi, 2006). In addition, the unemployment rate among Somalis has traditionally been very high: More than 50% of Somalis were unemployed in 2008 (Statistics Finland, 2010). Thus, in addition to their premigration experiences, Somali immigrants face many challenges and stressful circumstances in Finland.

Somali and Finnish cultures differ in many aspects, for example, in geographic setting, neighboring cultures, religion, size and role of the family, and collective and individual values. Somali culture has been influenced by East African and Arabic traditions, and Islam is a part of everyday customs including health practices (Laitin & Samatar, 1987). Social cohesion and harmony are important in Somali culture (Koshen, 2007), and social networks and the extended family are the basis for care if one is in an adverse life situation or ill (Laitin & Samatar, 1987).

The majority of Finns belong to the Lutheran church, and although religion impacts important life transitions, it is not manifested openly in everyday practices. In international studies, Finland has been categorized as a highly individualist society (Diener, Gohm, Suh, & Oishi, 2000; Hofstede, 1980) with an emphasis on individual autonomy over social embeddedness (Schwartz, 2006).

Furthermore, the concepts of mental health differ in Finnish and Somali cultures. In Somali culture, health is viewed holistically, and various life problems are explained by religion, social circumstances, and supernatural phenomena, such as Jinn spirits. The solution to these problems requires changes in external conditions and active participation of the social network (e.g., Guerin, Guerin, Diiriye, & Yates, 2004).

There is no exact equivalent for depression in the Somali language, but the terms *niyadjab* and *qalbijab*, which describe long-standing hopelessness, mood decline, and disappointment, are closest to the Western concept (Mölsä et al., 2010). However, different from the Western term, *niyadjab* is attributed to situational, external, and social factors rather than to inner emotional processes. *Niyadjab* does not necessarily involve severe feelings of sadness or despair, nor does one seek psychiatric help for it. Somalis associate mental health problems with severe psychiatric disorders that are stigmatizing and shameful, and from which recovery is unlikely (Guerin et al., 2004; WHO, 2010).

Depression is the most commonly diagnosed psychiatric disorder and the main reason for work disability in Finland (e.g., Pirkola et al., 2005). Typical depressive symptoms are self-accusations and feelings of guilt. Suicidal ideation and suicide are central features of severe depression among older adults (Koponen et al., 2007). The treatment is traditionally individual-centered: Medication and psychotherapy are the official recommendations for treating depression in Finland (Depression: Current Care Guideline, 2009). Public health care is offered to all permanent residents who live in Finland. There are no specific health care services for immigrant populations. Immigrants are expected to use the same services as native Finns and are often assessed with the same psychiatric and psychological instruments as natives.

Research Questions and Hypotheses

We examined the manifestation of depressive symptoms and their psychosocial correlates among older Finnish natives and Somali refugees in Finland. The hypotheses and research questions were as follows: (a) Depressive symptoms manifest differently in the groups. Somalis express more somatic-affective¹ depressive symptoms (e.g., fatigue and lack of appetite) than Finns, who in turn show more cognitive depressive symptoms (e.g., self-accusation and guilt) than Somalis. Because research shows higher levels of depression among women than among men across cultures, we hypothesized that women would manifest more depressive symptoms than men in both groups. (b) How depressive symptoms, alexithymia, and somatization are associated among Finns and Somalis? (c) We hypothesized that the psychosocial factors related to depression are different in the two groups. Because a person's own agency is highly valued in Finnish culture, weak SOC explains depressive symptoms better in the Finnish group than in the Somali group. Because social relations are highly valued in Somali culture, we hypothesized that poor social support explains depressive symptoms better among Somalis than among Finns.

Method

Participants and Procedure

Information was gathered from 256 Somalis and Finns aged between 50 and 85 years. The Somali group was sampled from >50-year-old persons born in Somalia who live in the Helsinki metropolitan area ($n = 307$), of whom every second person was chosen. Exclusion criteria were insufficient cognitive ability and living in hospitals or other care settings. We could not reach all individuals, and 10 refused to participate, which left a final sample of 128 Somalis.

Eight Somali-speaking research assistants (three women and five men) carried out the research visits in participants' homes or in other chosen locations in 2007. They were trained and supervised by the third author who is a native Somali speaker. The research visits lasted on average 2 hr. Because about half of the Somali participants were illiterate ($n = 62$), all Somali participants' responses to the questionnaires were written down by the research assistants.

The Finnish matched pairs are from the Health 2000 survey conducted in 2000 to 2001 (for more details, see Pirkola et al., 2005). For each Somali participant, a matched pair was selected from the Finnish study according to gender, age, education, and marital status.

Measures

Depression. The self-reported Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) consists of 21 descriptions of mood, thoughts, and behavior that indicate depression. Participants were asked to choose the option that suited them best from four alternatives ranging in intensity (e.g., "I do not feel sad," "I feel sad," "I am sad all the time, and I can't snap out of it," "I am so sad or unhappy that I can't stand it"). The responses were scored in a range from 0 to 3. When the symptom categories were formed, the BDI items were first divided into somatic-affective and cognitive categories on a conceptual basis. Second, the symptom categories were tested by running separate factor analyses in the Finnish and Somali groups (see Table 1).

Somatization. The Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1992) scale includes 13 items about somatization symptoms, for example, soreness of muscles. The participants were asked to estimate on a 5-point Likert-type scale how much they had suffered from the specific symptoms during the last month (1 = *not at all*, 5 = *very much*).

Alexithymia. The Toronto Alexithymia Scale (TAS-20) questionnaire (Bagby, Parker, & Taylor, 1994) consists of 20 statements about recognizing and describing emotions and EOT. The TAS-20 has three subscales: Difficulty Identifying Feelings (DIF; for example, "I am often uncertain about my feelings"), Difficulty Describing Feelings (DDF; for example, "It is hard for me to find the right words to describe my feelings"), and EOT (e.g., "I prefer talking with people about their daily routine than about their feelings," reverse coded). The participants estimated on a 5-point Likert-type scale (1 = *not at all true*, 5 = *very true*) how well these statements applied to them.

Sense of coherence. The 13-item SOC questionnaire (Antonovsky, 1993) is related to experiences of life control and intelligibility, for example, "How often do you have feelings that there is little meaning in the things you do in your daily life?" The participants estimated these statements on a 7-point scale (1 = *never*, 7 = *very often*). No standard cutoff point has been assigned to strong or weak SOC. In this study, two categories based on the median were formed: 1 = weak SOC (range = 30-50.49, $n = 116$) and 2 = strong SOC (range = 50.5-85, $n = 140$).

Table 1. Principal-Axis Factor Analysis of Beck Depression Inventory Items.

Item	Somalis		Finns	
	Somatic-affective	Cognitive	Somatic-affective	Cognitive
Pessimism	.460	.329	.231	.612
Sense of failure	.192	.439	.278	.531
Dissatisfaction	.369	.605	.344	.597
Guilt	.306	.672	.026	.853
Self-dislike	-.036	.611	.135	.747
Self-accusations	.089	.474	.337	.537
Suicidal ideation	-.074	.345	.120	.546
Body image change	.187	.531	.129	.359
Depressed mood	.675	.212	.231	.727
Irritability	.722	.176	.251	.243
Loss of interest	.728	.178	.333	.386
Indecisiveness	.819	.160	.413	.473
Difficulties working	.583	.283	.588	.190
Insomnia	.898	.063	.461	.244
Fatigue	.831	.051	.602	.079
Loss of appetite	.879	.130	.049	.204
Somatic preoccupation	.729	.038	.410	.049
Loss of interest in sex	.388	.095	.461	.080
Factor intercorrelation	.49		.63	
Identity coefficient: Somatic-affective	.81			
Proportionality coefficient: Somatic-affective	.86			
Identity coefficient: Cognitive	.94			
Proportionality coefficient: Cognitive	.94			

Note. Loadings greater than or equal to .30 are shown in boldface.

Social support. An index counting marital status and the amount of help received for daily chores was formed to assess social support. Being married or living with a partner indicated good social support, and being single, divorced, or widowed indicated poor social support. In addition, participants were asked about their need for help in daily life and were presented with eight possible sources of received help: spouse, children, neighbors, relatives, friends and acquaintances, home caregivers, or others. A sum variable (marital status plus received help) was formed ranging between 0 and 9.

The BDI, SCL-90, and TAS-20 questionnaires were chosen because of their use in the clinical setting in Finland among natives and immigrants. All questionnaires were translated from Finnish or English into Somali by a professional translator. Three Somali-language specialists verified the translations. To guarantee the appropriateness of the questions, the semantic and cultural meaning of symptoms and psychiatric terminology were scrutinized in particular. Research assistants received extra training on the TAS-20 questionnaire because the third author, a native Somali speaker, considered alexithymia conceptually foreign to Somalis.² Pilot testing of the Somali-language questionnaires in an interview setting was carried out with 10 Somali volunteers older than 50 years. When the sum variables were formed, the missing values were replaced by group means, with the exception of social support.

Table 2. Background Variables in the Somali and Finnish Groups.

	Somalis		Finns	
	<i>n</i>	%	<i>n</i>	%
Gender				
Women	75	58.6	75	58.6
Men	53	41.4	53	41.4
Age (years)				
50-59	78	60.9	78	60.9
60-69	43	33.6	44	34.4
70-80	7	5.5	6	4.7
Marital status				
Married	79	62.2	79	61.7
Divorced	12	9.4	12	9.4
Widow	33	26.0	34	26.6
Single	3	2.4	3	2.3
Education				
No education	86	65.5	80	62.5
Various courses	11	8.6	17	13.3
Vocational school	12	9.4	10	7.8
Polytechnic school	10	7.8	10	7.8
University	7	5.5	7	5.5
Other	4	3.1	4	3.1
Employment status				
Full-time employment	31	28.2	100	78.1
Unemployment last 5 years	76	59.4	16	12.5

Results

Descriptive Statistics

Because of the matched-pair procedure, the Finnish and Somali groups did not differ in terms of gender, age, marital status, or education (Table 2). In the sample, 41% were men and 59% were women, ranging from 50 to 85 years of age ($M = 57.90$, $SD = 0.50$). About two thirds (62%) of the participants were married, and a quarter (26%) were widowed. Because the groups were matched according to the Somalis, the share of individuals with no formal education was high (64%). However, the groups differed according to work status. Most of the Finns (78%) were employed full-time, but only 28% of the Somalis worked full-time.

Approximately half of the Somali participants (48%) had a permanent residency permit in Finland and 19% had Finnish nationality. The rest had a residency permit either by humanitarian law (16%) or family member status (7%). The Somali participants' length of residence in Finland varied from 1 to 19 years. A little fewer than a half (42%) had been living in the country for 10 years or more, and 16% had arrived during the previous 3 years. About half (49%) of the Somalis were illiterate. Only a few (11%) indicated they had good knowledge of the Finnish language, and a few more (16%) estimated their language proficiency was acceptable. About half (48%) indicated that they did not speak or understand Finnish. None of the Somali participants reported knowing Swedish, the other official language in Finland, and 12% said that they could use English as a lingua franca.

Table 3. Descriptive Statistics by Culture and Gender and Reliability of the Measures by Culture ($n = 256$).

	Somalis				Finns			
	Range	M (SD)	α	Interitem r	Range	M (SD)	α	Interitem r
BDI total	0-26.11	7.97 (7.05)	.90	.34	0-23.17	6.65 (5.68)	.84	.23
Men	0-24.11	5.72 (7.22)			0-18.06	5.15 (4.68)		
Women	0-26.11	8.04 (7.75)			0-23.17	7.06 (5.75)		
SOM-AFF	0-20.20	6.59 (5.55)	.92	.53	0-13.30	4.77 (3.31)	.70	.19
Men	0-18.20	4.81 (4.45)			0-11.30	3.78 (3.03)		
Women	0-19.20	7.82 (5.94)			0-13.30	5.48 (3.35)		
COG	0-8.25	1.29 (2.40)	.75	.27	0-11.00	2.23 (2.89)	.83	.38
Men	0-8.25	1.10 (1.71)			0-11.00	1.66 (2.40)		
Women	0-6.25	1.43 (2.06)			0-10.25	2.64 (2.89)		
SCL-90	11.08-52.42	21.64 (6.59)	.89	.33	11.08-43.42	21.49 (6.60)	.88	.35
Men	11.08-38.25	18.64 (4.91)			11.08-43.42	19.38 (6.29)		
Women	11.08-52.42	22.65 (7.54)			12.08-41.42	22.64 (6.83)		
TAS-20 total	11.08-55.08	23.71 (7.36)	.85	.32	11.08-42.17	26.93 (8.24)	.86	.35
Men	11.08-55.08	22.52 (9.15)			11.08-41.17	24.03 (8.12)		
Women	14.33-38.42	24.39 (6.09)			12.08-42.17	24.92 (7.60)		
DIF subscale	6.14-30.71	12.50 (4.35)	.83	.41	6.14-23.57	12.55 (4.47)	.84	.43
Men	6.14-30.71	11.64 (5.54)			6.14-23.57	12.36 (4.82)		
Women	6.14-22.57	12.52 (3.57)			6.14-22.29	12.59 (4.10)		
DDF subscale	4.20-20.20	9.87 (2.83)	.54	.19	4.20-20.40	10.54 (3.60)	.74	.37
Men	4.20-20.20	9.04 (3.57)			4.20-17.80	10.56 (3.46)		
Women	4.20-15.00	10.10 (2.54)			4.20-20.40	10.39 (3.86)		
SOC	31.25-71.58	47.72 (7.49)	.77	.22	35.17-77.58	59.37 (9.78)	.80	.26
Men	31.25-71.58	49.76 (8.96)			35.17-77.58	61.11 (9.28)		
Women	35.33-70.58	47.17 (7.36)			36.58-76.58	58.12 (10.09)		

Note. BDI = Beck Depression Inventory, total score; SOM-AFF = Somatic-affective depressive symptoms, includes BDI items: Depressed mood, irritability, fatigue, insomnia, somatic preoccupation, loss of appetite, loss of interest in sex, difficulty working, loss of interest, and indecisiveness; COG = cognitive depressive symptoms, includes BDI items: Pessimism, sense of failure, dissatisfaction, guilt, self-dislike, self-accusations, suicidal ideation, and body image change; SCL-90 = Symptom Checklist-90; TAS-20 = Toronto Alexithymia Scale, total score includes all items from the DIF and DDF subscales; DIF = Difficulty Identifying Feelings; DDF = Difficulty Describing Feelings; SOC = Sense of Coherence.

Reliability and Structural Equivalence of the Measures

To make valid cross-cultural comparisons, it is important that the measures used are equivalent in the studied groups (van de Vijver & Tanzer, 2004), especially when the groups differ in many variables (e.g., literacy and cultural background). Accordingly, we examined the internal consistencies of all measures (see Table 3) and the associations between the scales (see Table 4) in both groups. Finally, we ran separate factor analyses and Procrustes rotations for the BDI and TAS-20 scales that have factor structures.

BDI scale. A principal-axis factor analysis partly confirmed the conceptual categorization of the BDI items into somatic-affective and cognitive symptom categories (see Table 1). However, some BDI items were problematic in the two-factor solution either because they loaded on opposite factors in the Finnish and Somali groups or because the items fit badly in the two-factor structure in either group. Three items, feeling of punishment, crying, and loss of weight, were therefore excluded from further analyses. However, we decided to keep some items even though they did not fit particularly well in the factor structure. First, due to the conceptual importance of mood in assessing depression, depressed mood was included in the somatic-affective subscale.³ The item loss

Table 4. Pearson Correlations Between Scales and Subscales in the Somali and Finnish Groups.

Finns	Somalis						
	1.	2.	3.	4.	5.	6.	7.
1. BDI		.96**	.71**	.60**	.32**	.28**	.36**
2. SOM-AFF	.92**		.49**	.60**	.31**	.27**	.36**
3. COG	.91**	.67**		.33**	.25*	.22*	.27**
4. SCL-90	.32**	.42**	.18*		.33**	.29**	.35**
5. TAS-20	.53**	.49**	.48**	.26**		.95**	.89**
6. DIF	.54**	.51**	.48**	.37**	.91**		.70**
7. DDF	.38**	.34**	.34**	.06	.84**	.56**	

Note. Somalis, $n = 117-124$; Finns, $n = 113-124$. BDI = Beck Depression Inventory, total score; SOM-AFF = somatic-affective depressive symptoms, includes BDI items: Depressed mood, irritability, fatigue, insomnia, somatic preoccupation, loss of appetite, loss of interest in sex, difficulty working, loss of interest, and indecisiveness; COG = cognitive depressive symptoms, includes BDI items: Pessimism, sense of failure, dissatisfaction, guilt, self-dislike, self-accusations, suicidal ideation, and body image change; SCL-90 = Symptom Checklist-90; TAS-20 = Toronto Alexithymia Scale, excluding Externally Oriented Thinking (EOT) subscale; DIF = Difficulty Identifying Feelings; DDF = Difficulty Describing Feelings.

* $p < .05$. ** $p < .01$ (two-tailed correlations).

of appetite did not fit well into either factor in the Finnish sample. However, because this item is theoretically important in assessing depression cross-culturally (Weissman et al., 1996), we included it in the somatic-affective factor according to the loading in the Somali sample. Finally, the remaining items were assigned to the factor they fit better when we considered the loadings in both groups.⁴

There were 10 items in the final somatic-affective symptoms category: depressed mood, irritability, fatigue, insomnia, somatic preoccupation, loss of appetite, loss interest in sex, difficulties working, loss of interest, and indecisiveness. The cognitive symptoms category included 8 items that represent self-centered negative ideation: pessimism, sense of failure, dissatisfaction, guilt, self-dislike, self-accusations, suicidal ideation, and body image change. The BDI total symptoms were obtained by summing these 18 items.

Altogether, the factor analyses suggest that key symptoms in depression load strongly in the opposite factors in the two groups. Although the problematic item loadings warrant some caution in the interpretation of the results, the proportionality coefficients (i.e., Tucker's phi) for the final factor solution are both above .85 (Ten Berge, 1986). The results thus suggest acceptable structural equivalence for the somatic-affective and cognitive categories.

TAS-20 scale. The DIF and DDF subscales of the alexithymia scale had moderate to acceptable reliabilities in both groups (Table 3). However, the EOT subscale had a Cronbach's alpha of $-.73$ in the Somali sample and $.62$ in the Finnish sample, with respective interitem correlations of $.06$ and $.18$. This indicates that the EOT scale is not reliable in the Somali sample. In addition, the alexithymia scale with all three subscales had poor structural equivalence across the groups. Six of the seven items that had particularly bad fit belonged to the EOT subscale. When the EOT items were removed, the structural equivalence of the alexithymia scale improved considerably (Tucker's phi was $.90$ for the DIF subscale and $.86$ for the DDF subscale), and it showed good internal consistencies (see Tables 3 and 4). Therefore, we used only the DIF and DDF subscales in the subsequent analyses.

Manifestation of Depressive Symptoms

The means and standard deviations for the somatic-affective and cognitive depressive symptoms in the Somali and Finnish groups are presented in Table 5. A significant main effect

Table 5. Somatic-Affective and Cognitive Depressive Symptoms According to Culture and Gender: MANOVA Statistics, Means, and Standard Deviations.

	Somatic-affective		Cognitive	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Culture				
Somali	6.59	5.55	1.29	2.40
Finnish	4.77	3.31	2.23	2.89
	$F(1, 252) = 8.64^*$		$F(1, 252) = 8.07^*$	
Gender				
Women	6.65	4.95	2.03	2.72
Men	4.30	3.83	1.38	2.09
	$F(1, 252) = 16.91^{**}$		$F(1, 252) = 4.41^*$	
Culture × Gender – Interaction effect	$F(1, 252) = 1.25$		$F(1, 252) = 1.11$	

Note. The confidence interval in the analyses is 95%.

* $p < .05$. ** $p < .01$.

confirmed a group difference in the manifestation of depressive symptoms. As hypothesized, Somalis showed more somatic-affective depressive symptoms than Finns, whereas Finns showed more cognitive depressive symptoms than Somalis. As hypothesized, women manifested more depressive symptoms than men in both groups, as shown by the gender main effect and the non-significant Culture × Gender interaction effect.

Alexithymia, Depressive Symptoms, and Somatization

As Table 4 shows, high levels of depressive symptoms correlated with high levels of alexithymia in the Finnish group ($r = .53, p < .001$) and the Somali group ($r = .32, p < .001$). The association between alexithymia and depressive symptoms was stronger among Finns than among Somalis, $Z = 2.04, p < .05$.

Similarly, depressive symptoms correlated with somatization in both groups (Finns, $r = .32, p < .001$; Somalis, $r = .60, p < .001$), but the association was stronger among Somalis than among Finns, $Z = -2.84, p < .05$.

Finally, high alexithymia scores were connected to high somatization scores in both cultural groups (Finns, $r = .26, p < .001$; Somalis, $r = .33, p < .001$). The strength of the association was equally strong in the Finnish and Somali groups, $Z = -.61, p = .54$.

Psychosocial Correlates of Depression

The groups differed in the reported levels of the psychological and social correlates of depression. A strong SOC was more typical of the Finnish group (82%) than of the Somali group (27%), $\chi^2(1) = 77.24, p < .001$. Good social support was more typical of the Somali group (74%) than of the Finnish group (43%), $\chi^2(1) = 24.84, p < .001$.

Table 6 presents the results for the stepwise regression models for the psychosocial factors associated with depressive symptoms. All models were significant, and the explained variance varied between 9% and 40%. Contrary to our hypothesis, the groups did not differ in the factors that explain the manifestation of depression. Instead, strong SOC was associated with low levels of depressive symptoms among Finns and Somalis. Social support, in turn, was not associated with depressive symptoms in either group.

Table 6. Stepwise Regression Models of Psycho-Social Correlates for Somatic-Affective and Cognitive Depressive Symptoms in the Somali and Finnish Groups.

	Somalis						Finns					
	Somatic-affective symptoms			Cognitive symptoms			Somatic-affective symptoms			Cognitive symptoms		
	F change	SE	β	F change	SE	β	F change	SE	β	F change	SE	β
Step 1	7.82***			0.12			2.95*			1.43		
Age		1.05	.27**		0.40	-.01		0.52	.15		0.03	.04
Gender		0.08	-.10		0.03	.01		0.04	-.10		0.42	.02
Step 2	28.82****			9.47**			45.95***			65.22****		
SOC		0.07	-.47***		0.03	-.31**		0.02	-.54****		0.02	-.60***
Step 3	0.06			0.01			0.01			1.83		
Social support		0.50	-.02		0.18	-.01		0.33	.01		0.42	.11
Regression models	$F(4, 92) = 11.63, p < .0001$; 35% explained variance			$F(4, 93) = 2.41, p < .05$; 9% explained variance			$F(4, 108) = 22.07, p < .0001$; 33% explained variance			$F(4, 109) = 18.03, p < .0001$; 40% explained variance		

Note. The β values are those that include the impacts of all variables.
 * $p < .05$. ** $p < .01$. *** $p < .001$. **** $p < .0001$.

Discussion

Our results concerning the manifestation of depressive symptoms provide evidence for culture-related dynamics, whereas the results for the psychosocial correlates of depression emphasize similar aspects of depression in the two groups. Somalis showed higher levels of somatic-affective symptoms (e.g., sleeping difficulties and loss of appetite) than Finns, who in turn showed higher levels of cognitive depressive symptoms (e.g., self-blame and guilt) than Somalis. Depressive symptoms, alexithymia, and somatization were associated in both groups. There was a stronger connection between alexithymia and depressive symptoms among Finns than Somalis and a stronger connection between depressive and somatization symptoms among Somalis than Finns. However, the connection between alexithymia and somatization did not differ between the groups. Finally, a weak SOC explained depression in both groups, whereas lack of social support did not explain depressive symptoms in either group.

Manifestation of Depressive Symptoms

The group differences in the reported somatic-affective and cognitive depressive symptoms correspond with earlier research that emphasized the role of cultural values and beliefs and the diverse ways of experiencing and explaining illnesses (e.g., Kleinman & Good, 1985). The higher rates of cognitive symptoms among Finns could be explained by an emphasis on individual autonomy and control. Individual-centered beliefs and explanation models for depression can lead to preoccupation with inner states, worries about own worthiness, and rumination of problems that are reflected in cognitive depressive symptoms. In addition, although Finland is a relatively secular society, the Christian religion can add to symptoms of self-accusation and guilt (Braum, Sonnenberg, Beekman, Deeg, & van Tilburg, 2000). The lower rates of cognitive symptoms among Somalis, in turn, could be explained by Somali culture's lesser emphasis on the individual's role. Social and external factors such as interpersonal relationships and religion are perceived as central reasons for mental health problems (e.g., Guerin et al., 2004). Furthermore, in Muslim societies feelings of guilt and worthlessness have traditionally been rare symptoms of depression (Al-Issa, 2000; Bhui et al., 2003). Nevertheless, perhaps Somalis did not openly verbalize psychological distress because mental health problems are stigmatizing in Somali culture (e.g., WHO, 2010).

In addition, the stronger connection between depressive symptoms and somatization among Somalis than Finns can be interpreted with the finding that somatic expressions of distress are typical in some African societies (e.g., Marsella et al., 1985). However, equally likely is the interpretation that somatic problems might predispose Somalis to depression more severely than Finns. Compared with Western dual conceptions of mental and physical health, Somalis have a more holistic idea of well-being. This way of interpreting the results is in line with studies that show physical health forms the basis for experienced well-being in Somali communities (e.g., Silveira & Ebrahim, 1995). Earlier results based on these data also showed that older Somalis perceived somatic problems and illnesses cause more harm for their functioning than did Finns (Mölsä et al., 2014).

The connection between alexithymia and depressive symptoms was stronger among Finns than among Somalis. This result could indicate that personality factors and individual deficiencies in emotional processing are more decisive for depression among Finns. However, alexithymia was not especially strongly associated with somatization among Somalis, thus challenging the argument that alexithymia could plausibly explain somatization in non-Western cultures that discourage seeking meaning in individual emotions (Dion, 1996). Furthermore, the lack of reliability of the EOT subscale, which depicts preferences for focusing on external rather than on internal experiences, in the Somali sample agrees with the critics of the cultural appropriateness of alexithymia and brings into question the cross-cultural use of the EOT subscale (Dere et al., 2012; Dere et al., 2013; Ryder et al., 2008).

In addition to cultural background, the groups differed in their experiences related to migration. Research shows that refugees can be more vulnerable to mental health problems than natives because of the accumulation of hardships, losses, and stress (e.g., Gerritsen et al., 2006). Somalis reported high illiteracy rates and poor language proficiency, which can indicate a relatively low acculturation status and that older Somalis depend heavily on the immigrant community within Finland. In addition, results based on the same data as the present study found that past war-related trauma and postmigration stressors were associated with mental health problems, such as posttraumatic stress symptoms, among Somali refugees and that the level of depressive symptoms was also higher among Somalis than Finns (Mölsä et al., 2014). Thus, more depressive symptoms do not automatically result in more of all kinds of depressive symptoms, but those that are culturally meaningful.

There were also similarities in the depressive phenomena between Somalis and Finns. Women in both groups showed more somatic-affective and cognitive depressive symptoms than men. Women's higher depression rates worldwide have been explained by biological factors and by women's unfavorable social status and their higher exposure to stress in many societies (Kuehner, 2003). The similarity in Finnish and Somali women's depressive expression is interesting when we consider how substantially women's lives may differ in these groups. For instance, Finnish women are generally active members in working life, whereas the majority of older Somali women in Finland are illiterate and usually do not work outside the home.

Psychosocial Correlates of Depression

Contrary to our hypotheses, the results for the psychosocial correlates of depression emphasize similar aspects of depression among Finns and Somalis. A weak SOC was related to high levels of depressive symptoms in both groups. The results contradict the argument that individual characteristics would be more strongly associated with depression in cultures that value personal control than in cultures that stress collective responsibilities (Sastry & Ross, 1998). Instead, the results concur with research suggesting that strong SOC is universally associated with low levels of depression (Erikson & Lindström, 2006) or with the argument that weak SOC and depression are overlapping phenomena (Roth & Ekblad, 2006). However, the nature of SOC is complex

among migrant populations. Some researchers have suggested that enhancing SOC among refugees could support their mental well-being (Ghazinour, Richter, & Eisemann, 2004) and protect refugees' mental health from traumatic events (Pham, Vinck, Kinkodi, & Weinstein, 2010). Nevertheless, there is a valid concern that emphasizing the meaning of weak SOC in immigrants' health problems can lead to attributing sociopolitical problems to individual characteristics. Subsequently, immigrants' living conditions and work opportunities in enhancing well-being can be overlooked (e.g., Guerin et al., 2004).

We did not find a link between poor social support and depressive symptoms in either group. The measurement of social support may partly explain the results. It is likely that subjective satisfaction with received social support is more important than just receiving social support (Cruza-Guet et al., 2008). Somalis reported having more help from their social network than Finns, which may reflect the importance of relying on others in the Somali community and the emphasis on independence and relying on professional help in Finnish society. However, regardless of Somalis' good networks, the results contradict those of a previous study that showed social support could protect older Somali migrants from psychological distress (Silveira & Allebeck, 2001).

Limitations

The results provide useful information for health services about mood disorders and somatization symptoms in nonclinical groups that have been underrepresented in the literature. However, there is some controversy whether cultural differences in symptom manifestation are more salient in healthy populations than in clinical groups (Arens, Balkir, & Barnow, 2013) or whether cultural differences also apply to clinical populations (Ryder et al., 2008). Our results can be interpreted as evidence of general sociocultural tendencies in describing psychological and somatic sensations. Nevertheless, the results should be confirmed in clinical populations and with methods that do not rely solely on Western diagnostic instruments.

Comparing refugees and natives is challenging due to the differences between the populations. We attempted to ease the comparison by using a matched-pair procedure that enabled controlling for gender, age, civic status, and education in the analyses. Uncontrolled factors such as work status or income can be associated with the results. However, these factors are also typical characteristics of many immigrant groups. In addition, immigrants use the same health care services and are assessed with the same methods as natives in Finland, thus making the comparison somewhat natural and practical.

Another critique concerning assessment issues is that social support was measured by an index combining marital status and the help received for daily activities that could not depict different types of social support, for instance, emotional, practical, and instrumental support. In addition, specifically assessed information about cultural values, acculturation, and mental health beliefs could have deepened our understanding. Future studies should also concentrate increasingly on understanding the mechanisms underlying the differences in psychological distress, that is, "unpacking culture" (e.g., Dere et al., 2012), instead of just comparing differences between groups.

Although we attempted to establish the structural equivalence of the measures, some items in the BDI scale showed differences across the groups. Furthermore, the translation and measurement issues concerning the TAS-20 scale emphasize the need to adapt scales appropriately to different populations. In particular, languages that are strongly influenced by oral traditions and have a short history of a fixed written form, such as Somali, may need special consideration in psychometric research. Awareness of measurement limitation is also an important consideration in clinical work when assessing individuals from different cultural and linguistic backgrounds.

Finally, a potential concern is the use of populations from two different points in time. The Somali data were collected in 2007, whereas the Finnish data were collected in 2000 to 2001. Therefore, we cannot rule out the possibility that our results are affected by the cohort problem.

Concluding Remarks

To the best of our knowledge, the present study is the first that compared depressive symptom manifestation and the psychosocial correlates of depression among older refugees and natives in a matched-pair setting. In Finland, mental health in different ethnic groups has rarely been studied, and special health care services for immigrants are lacking. Different forms of depression that are salient in other cultural contexts may remain unrecognized or seen as more pathological than normative Western ways of expressing distress. Awareness of the variance in mental health is therefore valuable to tailor effective health care services for diverse populations globally and for minority groups within specific societies.

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Notes

1. The distinction between somatic, affective, and cognitive symptoms is not straightforward. Here, the term *somatic-affective symptoms* refers to vegetative, affective, and motivational aspects of depression, and the term *cognitive depressive symptoms* refers specifically to negative feelings and ideas.
2. After the data were collected, two other Somali speakers verified the translation of the Toronto Alexithymia Scale (TAS-20) questionnaire. At this point, Item 5 (I prefer to analyze problems rather than just describe them; Externally Oriented Thinking [EOT]) was judged unclear in Somali, and Item 11 (I find it hard to describe how I feel about people; Difficulty Describing Feelings [DDF]) lacked the word *qeexo* (feeling). Native speakers suggested that this is due to dialectical differences and that Somali written in the Latin alphabet was officially adopted only in 1972 (e.g., Paul, Simons, & Fennig, 2013). Because of the ambiguity in the translation and the subsequent reliability analysis, we removed Item 5 from further analyses. However, we decided to keep Item 11 because removing it decreased the reliability of the DDF subscale in both groups.
3. The subsequent analyses (MANOVA) were also run without this item and with the item included in the cognitive symptoms category. The results for both analyses remained the same.
4. Pessimism exceeded the minimum value .30 (Costello & Osborne, 2005) in the Finnish group only in the cognitive factor, to which this item was assigned. Although the items dissatisfaction and guilt had loadings on both factors, these items fit substantially better (i.e., had communalities of approximately .60) in the cognitive factor in both groups. Finally, irritability, loss of interest, and indecisiveness did not load clearly on either factor in the Finnish sample, but they had a good fit (exceeding .70; Costello & Osborne, 2005) on the somatic-affective factor in the Somali sample. Therefore, we grouped these three items according to the loadings in the Somali sample.

References

- Abu-Kaf, S., & Priel, B. (2008). Dependent and self-critical vulnerabilities to depression in two different cultural contexts. *Personality and Individual Differences, 44*, 689-700. doi:10.1016/j.paid.2007.10.002
- Al-Issa, I. (2000). Does the Muslim religion make a difference in psychopathology? In I. Al-Issa (Ed.), *Al-junūn: Mental illness in the Islamic world* (pp. 315-353). Madison, CT: International Universities Press.
- Antonovsky, A. (1979). *Health, stress, and coping: New perspectives on mental and physical well-being*. San Francisco, CA: Jossey-Bass.
- Antonovsky, A. (1993). The structure and properties of the Sense of Coherence Scale. *Social Science & Medicine, 36*, 725-733. doi:10.1016/0277-9536(93)90033-Z
- Arens, E., Balkir, B., & Barnow, S. (2013). Ethnic variation in emotion regulation: Do cultural differences end where psychopathology begins? *Journal of Cross-Cultural Psychology, 44*, 335-351. doi:10.1177/0022022112453314
- Bagby, R., Parker, J., & Taylor, G. (1994). The twenty-item Toronto Alexithymia Scale-I. Item selection and cross-validation of the factor structure. *Journal of Psychosomatic Research, 38*, 23-32. doi:10.1016/0022-3999(94)90005-1
- Ballenger, J., Davidson, J., Lecrubier, Y., Nutt, D., Kirmayer, L., Lépine, J.-P., . . . Ono, Y. (2001). Consensus statement on transcultural issues in depression and anxiety from the international consensus group on depression and anxiety. *Journal of Clinical Psychiatry, 62*(Suppl. 13), 47-55.
- Beck, A., Ward, C., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4*, 561-571.
- Bhugra, D. (2003). Migration and depression. *Acta Psychiatrica Scandinavica, 108*, 67-72. doi:10.1034/j.1600-0447.108.s418.14.x
- Bhui, K., Abdi, A., Abdi, M., Pereira, S., Dualeh, M., Robertson, D., . . . Ismail, H. (2003). Traumatic events, migration characteristics, and psychiatric symptoms among Somali refugees. *Social Psychiatry & Psychiatric Epidemiology, 38*, 35-43. doi:10.1007/s00127-003-0596-5
- Binitie, A. (1981). Psychiatric disorders in a rural practice in the Bendel state of Nigeria. *Acta Psychiatrica Scandinavica, 64*, 273-280. doi:10.1111/j.1600-0447.1981.tb00784.x
- Braam, A., Sonnenberg, C., Beekman, A., Deeg, D., & van Tilburg, W. (2000). Religious denomination as a symptom-formation factor of depression in older Dutch citizens. *International Journal of Geriatric Psychiatry, 15*, 458-466. doi:10.1002/(SICI)1099-1166(200005)15:5<458::AID-GPS141>3.0.CO;2-5
- Bromet, E., Andrade, L., Hwang, I., Sampson, N., Alonso, J., de Girolamo, G., . . . Kessler, R. (2011). Cross-national epidemiology of DSM-IV major depressive episode. *BMC Medicine, 9*, Article 90. doi:10.1186/1741-7015-9-90
- Chimich, W., & Nikolaichuk, C. (2004). Exploring the links between depression, integrity, and hope in the elderly. *Canadian Journal of Psychiatry, 49*, 428-433.
- Costello, A., & Osborne, J. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation, 10*, 1-9.
- Cruza-Guet, M.-C., Spokane, A., Caskie, G., Brown, S., & Szapocznik, J. (2008). The relationship between social support and psychological distress among Hispanic elders in Miami, Florida. *Journal of Counseling Psychology, 31*, 419-436. doi:10.1037/a0013501
- Depression: Current Care Guideline. (2009). *Working group appointed by the Finnish Medical Society Duodecim and the Finnish Psychiatric Association*. Helsinki, Finland: Finnish Medical Society Duodecim. Retrieved from <http://www.kaypahoito.fi/web/english/guidelines/guideline?id=ccs00062&suositusid=hoi50023>
- Dere, J., Falk, C., & Ryder, A. (2012). Unpacking cultural differences in alexithymia: The role of cultural values among Euro-Canadian and Chinese-Canadian students. *Journal of Cross-Cultural Psychology, 43*, 1297-1312. doi:10.1177/0022022111430254
- Dere, J., Tang, Q., Zhu, X., Cai, L., Yao, S., & Ryder, A. (2013). The cultural shaping of alexithymia: Values and externally-oriented thinking in a Chinese clinical sample. *Comprehensive Psychiatry, 54*, 362-368. doi:10.1016/j.comppsy.2012.10.013
- Derogatis, L. (1992). *The Symptom Checklist-90-Revised*. Minneapolis, MN: NCS Assessments.

-
- Diener, E., Gohm, C., Suh, E., & Oishi, S. (2000). Similarity of the relations between marital status and subjective well-being across cultures. *Journal of Cross-Cultural Psychology, 31*, 419-436. doi:10.1177/0022022100031004001
- Dion, K. (1996). Ethnolinguistic correlates of alexithymia: Toward a cultural perspective. *Journal of Psychosomatic Research, 41*, 531-539. doi:10.1016/S0022-3999(96)00295-4
- Draguns, J., & Tanaka-Matsumi, J. (2003). Assessment of psychopathology across and within cultures: Issues and findings. *Behaviour Research and Therapy, 41*, 755-776. doi:10.1016/S0005-7967(02)00190-0
- Erikson, M., & Lindström, B. (2006). Antonovsky's Sense of Coherence Scale and the relation with health: A systematic review. *Journal of Epidemiology & Community Health, 60*, 376-381. doi:10.1136/jech.2005.041616
- Erim, Y., Morawa, E., Atay, H., Aygün, S., Gökalp, P., & Senf, W. (2011). Sense of coherence and depression in the framework of immigration: Turkish patients in Germany and Turkey. *International Review of Psychiatry, 23*, 542-549. doi:10.3109/09540261.2011.637908
- Fazel, M., Wheeler, J., & Danesh, J. (2005). Prevalence of serious mental disorder in 7000 refugees resettled in Western countries: A systematic review. *The Lancet, 365*, 1309-1314. doi:10.1016/S0140-6736(05)61027-6
- Gerritsen, A., Bramsen, I., Devillé, W., van Willigen, L., Hovens, J., & van der Ploeg, H. (2006). Physical and mental health of Afghan, Iranian and Somali asylum seekers and refugees living in the Netherlands. *Social Psychiatry & Psychiatric Epidemiology, 41*, 18-26. doi:10.1007/s00127-005-0003-5
- Ghazinour, M., Richter, J., & Eisemann, M. (2004). Quality of life among Iranian refugees resettled in Sweden. *Journal of Immigrant Health, 6*, 71-81. doi:10.1023/B:JOIH.0000019167.04252.58
- Guerin, B., Guerin, P., Diiriye, R., & Yates, S. (2004). Somali conceptions and expectations concerning mental health: Some guidelines for mental health professionals. *New Zealand Journal of Psychology, 33*(2), 59-67.
- Halbreich, U., Alarcon, R., Calil, H., Douki, S., Gaszner, P., Jadresic, E., . . . Trivedi, J. (2007). Culturally-sensitive complaints of depressions and anxieties in women. *Journal of Affective Disorders, 102*, 159-176. doi:10.1016/j.jad.2006.09.033
- Hammond, L., Awad, M., Dagane, A., Hansen, P., Horst, C., Menkhau, K., & Obare, L. (2011, January). *Cash and compassion: The role of the Somali diaspora in relief, development and peace-building* [Study report]. Report of a study Commissioned by UNDP Somalia. Retrieved from <http://www.hiiraan.com/2011/May/Cash-and-Compassion-Draft-for-comments.pdf>
- Han, H.-R., Kim, M., Lee, H., Pistulka, G., & Kim, K. (2007). Correlates of depression in the Korean American elderly: Focusing on personal resources of social support. *Journal of Cross-Cultural Gerontology, 22*, 115-127. doi:10.1007/s10823-006-9022-2
- Hofstede, G. (1980). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. Thousand Oaks, CA: Sage.
- Jasinskaja-Lahti, I., Liebkind, K., & Perhoniemi, R. (2006). Perceived discrimination and well-being: A victim study of different immigrant groups. *Journal of Community & Applied Social Psychology, 16*, 267-284. doi:10.1002/casp.865
- Kirmayer, L., Robbins, J., & Dworkind, M. (1993). Somatization and the recognition of depression and anxiety in primary care. *American Journal of Psychiatry, 150*, 734-741.
- Kleinman, A., & Good, B. (Eds.). (1985). *Culture and depression: Studies in the anthropology and cross-cultural psychiatry of affect and disorder*. Berkeley: University of California Press.
- Kleinman, A., & Kleinman, J. (1985). Somatization: The interconnections in Chinese society among culture, depressive experiences, and the meanings of pain. In A. Kleinman & B. Good (Eds.), *Culture and depression: Studies in the anthropology and cross-cultural psychiatry of affect and disorder* (pp. 429-490). Berkeley: University of California Press.
- Konrath, S., Grynberg, D., Corneille, O., Hamming, S., & Luminet, O. (2011). On the social cost of interdependence: Alexithymia is enhanced among socially interdependent people. *Personality and Individual Differences, 50*, 135-141. doi:10.1016/j.paid.2010.09.008
- Koponen, H., Viilo, K., Hakko, H., Timonen, M., Meyer-Rochow, V., Särkioja, T., & Räsänen, P. (2007). Rates and previous disease history in old age suicide. *International Journal of Geriatric Psychiatry, 22*, 38-46. doi:10.1002/gps.151

-
- Koshen, H. (2007). Strengths in Somali families. *Marriage & Family Review*, *41*, 71-99. doi:10.1300/J002v41n01_05
- Kuehner, C. (2003). Gender differences in unipolar depression: An update of epidemiological findings and possible explanations. *Acta Psychiatrica Scandinavica*, *108*, 163-174. doi:10.1034/j.1600-0447.2003.00204.x
- Laitin, D., & Samatar, S. (1987). *Somalia: Nation in search of a state*. Boulder, CO: Westview Press.
- Lundman, B., Forsberg, K., Jonsen, E., Gustafson, Y., Olofsson, K., Strandberg, G., & Lovheim, H. (2010). Sense of coherence (SOC) related to health and mortality among the very old: The Umea 85+ study. *Archives of Gerontology and Geriatrics*, *51*, 329-332. doi:10.1016/j.archger.2010.01.013
- Luutonen, S., Sohlman, B., Salokangas, R., Lehtinen, V., & Dowrick, C. (2011). Weak sense of coherence predicts depression: 1-year and 9-year follow-ups of the Finnish Outcomes of Depression International Network (ODIN) sample. *Journal of Mental Health*, *20*, 43-51. doi:10.3109/09638237.2010.537401
- Marsella, A., Sartorius, N., Jablensky, A., & Fenton, F. (1985). Cross-cultural studies of depressive disorders: An overview. In A. Kleinman & B. Good (Eds.), *Culture and depression: Studies in the anthropology and cross-cultural psychiatry of affect and disorder* (pp. 299-324). Berkeley: University of California Press.
- Mölsä, M., Hjelde, K., & Tiilikainen, M. (2010). Changing conceptions of mental distress among Somalis in Finland. *Transcultural Psychiatry*, *47*, 276-300. doi:10.1177/1363461510368914
- Mölsä, M., Punamäki, R.-L., Saarni, S. I., Tiilikainen, M., Kuittinen, S., & Honkasalo, M.-L. (2014). Mental and somatic health and pre- and post-migration factors among older Somali refugees in Finland. *Transcultural Psychiatry*, *4*, 499-525. doi:10.1177/1363461514526630
- Moussavi, S., Chatterji, S., Verdes, E., Tandon, A., Patel, V., & Ustun, B. (2007). Depression, chronic diseases, and decrements in health: Results from the World Health Surveys. *The Lancet*, *370*, 851-858. doi:10.1016/S0140-6736(07)61415-9
- Parker, G., Cheah, Y.-C., & Roy, K. (2001). Do the Chinese somatize depression? A cross-cultural study. *Social Psychiatry & Psychiatric Epidemiology*, *36*, 287-293. doi:10.1007/s001270170046
- Paul, L., Simons, G., & Fennig, C. (Eds.). (2013). *Ethnologue: Languages of the World* (17th ed.). Retrieved from <http://www.ethnologue.com/language/som>
- Pham, P., Vinck, P., Kinkodi, D., & Weinstein, H. (2010). The sense of coherence and its association with exposure to traumatic events, posttraumatic stress disorder, and depression in Eastern Democratic Republic of Congo. *Journal of Traumatic Stress*, *23*, 313-321. doi:10.1002/jts.20527
- Pirkola, S., Isometsä, E., Suvisaari, J., Aro, H., Joukamaa, M., Poikolainen, M., . . . Lönnqvist, J. (2005). DSM-IV mood-, anxiety- and alcohol use disorders and their comorbidity in the Finnish general population: Results from the Health 2000 Study. *Social Psychiatry & Psychiatric Epidemiology*, *40*, 1-10. doi:10.1007/s00127-005-0848-7
- Roth, G., & Ekblad, S. (2006). A longitudinal perspective on depression and sense of coherence in a sample of mass-evacuated adults from Kosovo. *The Journal of Nervous and Mental Disease*, *194*, 378-381. doi:10.1097/01.nmd.0000217882.70120.38
- Ryder, A., Yang, J., Zhu, X., Yao, S., Yi, J., Heine, S., & Bagby, M. (2008). The cultural shaping of depression: Somatic symptoms in China, psychological symptoms in North America? *Journal of Abnormal Psychology*, *117*, 300-313. doi:10.1037/0021-843X.117.2.300
- Sastry, J., & Ross, C. (1998). Asian ethnicity and the sense of personal control. *Social Psychology Quarterly*, *61*, 101-120.
- Sayar, K., Kirmayer, L., & Taillefer, S. (2003). Predictors of somatic symptoms in depressive disorder. *General Hospital Psychiatry*, *25*, 108-114. doi:10.1016/S0163-8343(02)00277-3
- Schwartz, S. (2006). A theory of cultural value orientations: Explication and applications. *Comparative Sociology*, *5*, 137-182. doi:10.1163/156913306778667357
- Silveira, E., & Allebeck, P. (2001). Migration, ageing and mental health: An ethnographic study on perceptions of life satisfaction, anxiety and depression in older Somali men in east London. *International Journal of Social Welfare*, *10*, 309-320. doi:10.1111/1468-2397.00188
- Silveira, E., & Ebrahim, S. (1995). Mental health and health status of elderly Bengalis and Somalis in London. *Age and Ageing*, *24*, 474-480. doi:10.1093/ageing/24.6.474
- Silveira, E., & Ebrahim, S. (1998). Social determinants of psychiatric morbidity and well-being in immigrant elders and whites in East London. *International Journal of Geriatric Psychiatry*, *13*, 801-812. doi:10.1002/(SICI)1099-1166(199811)13:11<801::AID-GPS876>3.0.CO;2-Z

-
- Simon, G., VonKorff, M., Piccinelli, M., Fullerton, C., & Ormel, J. (1999). An international study of the relation between somatic symptoms and depression. *The New England Journal of Medicine*, *341*, 1329-1335.
- Statistics Finland. (2010). *Työssäkäynti 2008* [Employment 2008]. Helsinki, Finland: Author. Retrieved from http://www.stat.fi/til/tyokay/2008/01/tyokay_2008_01_2010-04-20_fi.pdf
- Statistics Finland. (2013). *Population structure*. Helsinki, Finland: Author. Retrieved from http://tilastokeskus.fi/til/vaerak/2012/vaerak_2012_2013-03-22_tie_001_en.html?ad=notify
- Suh, E., Diener, E., Oishi, S., & Triandis, H. (1998). The shifting basis of life satisfaction judgments across cultures: Emotions versus norms. *Journal of Personality and Social Psychology*, *74*, 482-493. doi:10.1037/0022-3514.74.2.482
- Taylor, G. (2000). Recent developments in alexithymia theory and research. *Canadian Journal of Psychiatry*, *45*, 134-142.
- Taylor, G., Bagby, R., & Parker, J. (2003). The 20-item Toronto Alexithymia Scale: IV. Reliability and factorial validity in different languages and cultures. *Journal of Psychosomatic Research*, *55*, 277-283. doi:10.1016/S0022-3999(02)00601-3
- Ten Berge, J. (1986). Some relationships between descriptive comparisons of components from different studies. *Multivariate Behavioral Research*, *21*, 29-40.
- van de Vijver, F., & Tanzer, N. (2004). Bias and equivalence in cross-cultural assessment: An overview. *Revue européenne de psychologie appliquée*, *54*, 119-135. doi:10.1016/j.erap.2003.12.004
- Waller, E., & Scheidt, C. (2006). Somatoform disorders of affect regulation: A developmental perspective. *International Review of Psychiatry*, *18*, 13-24. doi:10.1080/09540260500466774
- Weissman, M., Bland, R., Canino, G., Faravelli, C., Greenwald, S., Hwu, H.-G., . . . Yeh, E.-K. (1996). Cross-national epidemiology of major depression and bipolar disorder. *The Journal of the American Medical Association*, *276*, 293-299. doi:10.1001/jama.1996.03540040037030
- World Bank. (2013). *Life expectancy at birth, total (years)* [table]. The World Bank Group. Retrieved from <http://data.worldbank.org/indicator/SP.DYN.LE00.IN>
- World Health Organization. (2001). *The World Health Report 2001—Mental health: New understanding, new hope*. Geneva, Switzerland: Author. Retrieved from http://www.who.int/whr/2001/en/whr01_en.pdf
- World Health Organization. (2010). *A situation analysis of mental health in Somalia*. Retrieved from http://reliefweb.int/sites/reliefweb.int/files/resources/111AEF992F74A43FC125782B00484E8D-Full_Report.pdf
- Yen, S., Robins, C., & Lin, N. (2000). A cross-cultural comparison of depressive symptom manifestation: China and the United States. *Journal of Consulting and Clinical Psychology*, *68*, 993-999. doi:10.1037/0022-006X.68.6.993

Causal attributions of mental health problems and depressive symptoms among older Somali refugees in Finland

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Abstract

Causal attributions of mental health problems play a crucial role in shaping and differentiating illness experience in different sociocultural and ethnic groups. The aims of this study were (a) to analyze older Somali refugees' causal attributions of mental health problems; (b) to examine the associations between demographic and diagnostic characteristics, proxy indicators of acculturation, and causal attributions; and (c) to analyze the connections between causal attributions and the manifestation of somatic-affective and cognitive depressive symptoms. A sample of 128 Somali refugees aged 50–80 years living in Finland were asked to list the top three causes of mental health problems. Depressive symptoms were analyzed using the Beck Depression Inventory (BDI). The results showed that the most commonly endorsed causal attributions of mental health problems were *jinn*, jealousy related to polygamous relationships, and various life problems. We identified five attribution categories: (a) somatic, (b) interpersonal, (c) psychological, (d) life experiences, and (e) religious causes. The most common causal attribution categories were life experiences and interpersonal causes of mental health problems. Men tended to attribute mental health problems to somatic and psychological

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causes, and women to interpersonal and religious causes. Age and proxy indicators of acculturation were not associated with causal attributions. Participants with a psychiatric diagnosis and/or treatment history reported more somatic and psychological attributions than other participants. Finally, those who attributed mental health problems to life experiences (e.g., war) reported marginally fewer cognitive depressive symptoms (e.g., guilt) than those who did not. The results are discussed in relation to biomedical models of mental health, service use, immigration experiences, and culturally relevant patterns of symptom manifestation.

Keywords

causal attributions, depressive symptoms, explanatory models, mental health, refugees, Somalis

Subjective experiences and explanations of illness and wellbeing are shaped by sociocultural contexts, and therefore vary greatly across time and living environments (Desjarlais, Eisenberg, Good, & Kleinman, 1995; Kleinman, Eisenberg, & Good, 1978; Weiss & Somma, 2007). In addition to culture and social situations, demographic characteristics and lifespan events are also important determinants of health experience and explanation. For example migrants and refugees who come into contact with new cultural practices and beliefs and are exposed to specific and stressful life events through their migration experiences might both adhere to common attributions in their culture of origin and find new ways of explaining illnesses (Caplan et al., 2011; Carroll, 2004).

Causal attributions explain why people get sick or suffer from various problems, and form part of broader explanatory models of illness which include conceptions about adequate help, probable outcomes (Weiss & Somma, 2007), and health related behaviors (Kleinman, 1980; McCabe & Priebe, 2004; Palmer, 2006). Causal health attributions are also associated with manifestations of somatic and psychological symptoms, with some studies reporting psychological attributions among patients with mood and anxiety disorders, and somatic attributions among patients with physical symptoms (Duddu, Isaac, & Chaturvedi, 2006). It is thus possible that causal mental health attributions are associated with specific ways of manifesting psychological distress. Information about culturally salient causal attributions among migrant populations is therefore vital for providing efficient health services in multicultural societies (Bhui & Bhugra, 2002). In this paper, we focus on causal attributions of mental health problems among older Somali (over 50 years old)¹ refugees² living in Finland. We examine their attributions of mental health problems and analyze how sex, age, education, diagnostic characteristics, and proxy indicators of acculturation are associated with causal attributions. Finally, we analyze the associations between mental health attributions and depressive symptom manifestation.

Causal attributions of mental health problems

Subjective illness experiences (Eisenberg, 1977; Kleinman et al., 1978) are intrinsically embedded in larger social systems that shape how ill health and distress are named, explained, and cured, and can therefore be understood as culturally constructed (Arthur & Whitley, 2015; Dein, Alexander, & Napier, 2008). Conceptions of underlying causes for mental health problems are connected with what is considered effective treatment (Ahn, Proctor, & Flanagan, 2009; Sorsdahl, Flisher, Wilson, & Stein, 2010), and thus also with help seeking behaviors. Researchers agree that a “service gap” or “paradox” exists among refugees. Although refugees show typically high levels of mental health problems due to their stressful life experiences (Fazel, Wheeler, & Danesh, 2005), they use mental health services significantly less than native or other migrant populations in many European countries (Gerritsen et al., 2006; McCrone et al., 2005), including Finland (Castaneda et al., 2012). Research among Somali origin migrants in Finland reveals that some are unsatisfied with Finnish mental health services and prefer to travel and seek help in Somalia (Tiilikainen & Koehn, 2011). Some Somali origin migrants suffering from mental health problems are also forcibly returned to Somalia by their families in order to get treatment (Tiilikainen, 2011).

Some researchers have conceptualized causal mental health attributions according to the role of the individual versus community in illness onset by using terms such as *impersonal* versus *personalistic* causes (Eisenbruch, 1990), *situation-centered* versus *individual-centered* causes (e.g., White, 1982), and *cosmocentric* versus *anthropocentric* health views (Sterlin, 2006). The common underlying notion in these conceptualizations is the relative importance and responsibility of the individual for the onset of illness. Impersonal/situational causes and the cosmocentric view attribute sickness and distress to factors outside the individual (e.g., religion, living environments), whereas personalistic/individual-centered causes and the anthropocentric view locate causal factors within the person (e.g., genes, personality).

Common attributions among various groups of African, Caribbean, and Asian origins relate to material and social factors, such as interpersonal problems and poverty (Aidoo & Harpham, 2001; McCabe & Priebe, 2004), and to the spiritual world and religion (Lim, Hoek, & Blom, 2015; Sorsdahl et al., 2010). Causal attributions often involve several potential causes simultaneously; however, biomedical explanations are less common outside Western contexts (Carroll, 2004; Lawrence et al., 2006). In contrast, research among Western psychiatry experts reveals that most attribute disorders such as schizophrenia and bipolar disorder primarily to biomedical factors, and not to a combination of biomedical, psychological, or environmental variables (Ahn et al., 2009).

Views on mental health in Finland and Somalia

The Somali participants in this study live in Finland, where biomedical attributions play a central role in the conceptualization of mental health problems and their subsequent

treatments. A study among Finnish laypeople, nurses, doctors, and members of parliament showed that more than 80% of respondents in all groups considered schizophrenia to be a disease, situating schizophrenia next to cancer and diabetes on the disease scale (Tikkinen, Leinonen, Guyatt, Ebrahim, & Jävinen, 2012). Similarly, the majority considered depression to be a medical state, which was evaluated as more of a disease than, for example, high blood pressure or a hip fracture.

Somalia is an East African country with influences of Islamic and Arabic traditions (Cassanelli, 2010; Lewis, 1998), where the social world occupies a central position for wellbeing. Illnesses are commonly attributed to various life problems and social, religious, and spiritual phenomena (Carroll, 2004; Pavlish, Noor, & Brandt, 2010; Tiilikainen, 2010). Spirits continue to be significant factors in the ways that people make meaning of illness and suffering; however, owing to socio-political changes following the prolonged civil war, ideas concerning different categories of spirits have changed. For example, spirits previously commonly known as *saar* (or *zar*) and their related rituals are nowadays often seen as being against Islam, whereas *jinn* (or *djinn*)—invisible spirits or beings created by Allah and presented in the Koran (Dein et al., 2008)—cannot be denied (Tiilikainen, 2010). Previous studies in the US (Carroll, 2004), Australia (Fozdar, 2009), Sweden (Johnsdotter, Ingvarsdotter, Ötman, & Carlbom, 2011), and Finland (Mdsä Hjelde, & Tiilikainen, 2010) have confirmed that Somali immigrants consider the social world and pre- and postimmigration life experiences (e.g., war, discrimination) to be important influences on mental wellbeing. Because many problems are seen to originate in the social and spiritual worlds, effective healing implies changes in the relevant external conditions and adherence to social networks, traditional healers, and religion (Carroll, 2004; Guerin, Guerin, Diiriye, & Yates, 2004).

Instead of recognizing a dualistic division between mental and somatic problems, Somali medicine sees health in a holistic way. Notions related to causes, expressions, and illness categories of mental distress are intertwined and overlapping, and they do not converge with Western psychiatric nosology. For example, *murug* (sadness), *waalli* (madness), and *jinn* may be seen as causal factors for mental distress and as illness categories (Carroll, 2004). Although *waalli* is usually considered a mental health problem, it is not considered a disease, that is, abnormal functioning of the body or brain. Instead, Somalis often attribute *waalli* to *jinn*, to difficult life experiences, or to strong emotional states that are not resolved appropriately (Mdsä et al., 2010).

Studies indicate that Somali origin migrants also see mental health suffering as a continuum without clear-cut distinctions between different mental disorders (Johnsdotter et al., 2011; Loewenthal, Mohamed, Mukhopadhyay, Ganesh, & Thomas, 2012). For example, emotional suffering or feelings of anxiety are not considered mental health problems, but natural reactions to adversities in life. However, when strong emotions and their causes are not solved properly, they can lead to *waalli*, which is associated with socially disturbing behavior and inability to take care of everyday tasks such as personal hygiene (Carroll, 2004; Tiilikainen, 2003). Recovery from *waalli* is unlikely, making suffering from mental health problems frightening and stigmatizing (Carroll, 2004; Guerin et al., 2004; World Health Organization [WHO],

2010). Strong emotional experiences that can lead to *waalli* include, for example, *welwel* (worry), *niyadjab* or *qalbijab* (demoralization and sadness due to disappointment), and *murugo* (sadness; Carroll, 2004; Tiilikainen 2003). In addition, some forms of emotional distress are gendered. *Buufis* (sadness and distress related to migration experience involving, for example, poor appetite and insomnia) is common among men, and *maseyrka* (a strong emotional experience of envy and jealousy stemming from polygamous relationships) mainly affects women (Mdsäet al., 2010).

Empirical research among Somalis in the US highlights that the mismatch between Somali and Western ways of perceiving mental health is associated with Somalis' reluctance to seek help from medical practitioners (Carroll, 2004). Additionally, in a Swedish study, Somalis expressed their unwillingness to use the available psychiatric services (Johnsdotter et al., 2011). According to ethnographic research in Finland, Somalis value Finnish health care in general, but they consider the mental health services inappropriate (Mdsäet al., 2010; "Somalis in Helsinki," 2013) and feel that health care professionals often lack understanding of their situation and needs, partly due to cultural differences in ways of understanding illnesses ("Somalis in Helsinki," 2013). Many Somali origin migrants have also adopted some health views that are common in their new resettlement country. For example, symptoms that Somalis could have previously attributed to evil eye may in Finland be seen as symptoms of allergies or lactose intolerance (Mdsäet al., 2010; "Somalis in Helsinki," 2013).

Previous studies about Somali mental health conceptions have often focused on in-depth information collected mainly by qualitative methods such as focus group interviews (Carroll, 2004; Johnsdotter et al., 2011; Loewenthal et al., 2012; Mdsäet al., 2010; Palmer, 2006). Although these studies provide us with valuable information, it is also important to study mental health views among Somalis with larger samples. Group interviews can be problematic because some responses may be affected by conformity, and divergent views may remain hidden, especially since mental health is a sensitive topic in Somali communities. Causal mental health attributions can also be subject to important intragroup variation. Therefore, it is important to study how demographic factors such as age, sex, and education are associated with mental health attributions. Furthermore, in the context of immigration, it is necessary to consider the possible influences of living in the new country of settlement and being in contact with the local health conceptions. In this study, we focus on older Somali refugees and apply an approach that enables analysis of the role of relevant demographic and diagnostic characteristics and acculturation proxies in causal attributions.

Mental health attributions and psychiatric symptom manifestation

Besides service use and satisfaction with services, the way people understand and perceive mental distress may impact their ways of manifesting symptoms. Many studies have reported cultural differences in psychiatric symptom manifestation (e.g., Ballenger et al., 2001; Simon, VonKorff, Piccinelli, Fullerton, & Ormel, 1999); however, evidence is more limited about how culture shapes

psychopathology and brings about variations across ethnic and linguistic groups (e.g., Ryder et al., 2008). According to Shorter (1993), different sociocultural environments can affect the ways suffering is communicated by defining a certain number of relevant symptoms or a “symptom pool” that resonates with the ideas of the surrounding community. This mechanism, albeit unconscious, helps individuals to express their suffering to others in an understandable and meaningful way. For example, a retrospective study in Egypt found that the manifestation of psychiatric symptoms with religious content followed societal changes in religious emphasis, thus reflecting “the prevalence of normal symbols and expressions in the larger society” (Atallah, El-Dosoky, Coker, Nabil, & El-Islam, 2001, p. 414).

In this study, we examined whether type of causal mental health attribution is associated with the manifestation of depressive symptoms. Depression is estimated to be the most prevalent psychiatric disorder worldwide (Bromet et al., 2011) causing a considerable burden of disease (Moussavi et al., 2007). However, variations in depressive symptoms can make it challenging to identify depression in different settings worldwide. A study among the same Somali participants as in the current study and match-paired native Finns revealed that Somali refugees reported more somatic-affective depressive symptoms (e.g., somatic preoccupation, low affect) than Finns, who instead reported higher levels of cognitive depressive symptoms (e.g., self-dissatisfaction, guilt; Kuittinen et al., 2014). These results are in line with other studies confirming that the rates of manifested somatic and psychological depressive symptoms vary across different sociocultural groups. In many industrialized countries in the Western world, specifically in North America and Western Europe, salient depressive symptoms include feelings of worthlessness, self-blame, and guilt (e.g., Draguns & Tanaka-Matsumi, 2003). In many other cultural contexts (Ballenger et al., 2001), including some Muslim societies (Al-Issa, 2000; Bhui et al., 2003), these psychological and individual-focused symptoms are less common. Instead, common expressions of distress in these contexts often include general discomfort and pains.

The role of cultural illness conceptions and attributions could help explain some of the variation in depressive symptoms. In Somali culture, causes of mental health problems are commonly located outside the individual—in social relationships or the surrounding environment (Guerin et al., 2004)—and therefore, individual-focused symptoms placing the person in the center of suffering may not be meaningful or appropriate ways of experiencing and communicating distress. Other factors such as mental health stigma in Somali culture (Tiilikainen, 2003; WHO, 2010) may also inhibit verbalizing psychological distress, thus shaping symptom manifestation.

Context of the study and research questions

We focused on causal attributions of mental health problems among older Somali refugees living in Finland. An estimated 1–1.5 million Somalis live in the diaspora (Hammond et al., 2011). Accordingly, Somalis are one of the largest migrant groups and ethnic minorities in Europe (“Somalis in Helsinki,” 2013), including in Finland (Statistics Finland, 2013a).

Finland is a Nordic country with a relatively homogenous population. In 2012, the number of foreign residents calculated by the number of foreign language speakers was 267,000, which is approximately 5% of the total population (Statistics Finland, 2013a). Somalis (14,800) were the third biggest foreign language group after Russians (62,500) and Estonians (38,400). Somalis are therefore not only the largest African origin group but also the largest ethnic group with a refugee background and the largest Muslim group in Finland. Many have reported difficulties in integrating in Finnish society because of experiences of racial discrimination and harassment (Jasinskaja-Lahti, Liebkind, & Perhoniemi, 2006; "Somalis in Helsinki," 2013). In addition, the unemployment rate among Somalis has been very high; for example, more than 50% in 2008 (Statistics Finland, 2010).

The majority of Finnish Somalis are young. In 2013, more than 60% were under 25 years old (Statistics Finland, 2013b). Although studies among Somalis have increased in the past 10 years in Finland, research among older Somalis is lacking (Mäsa & Tiilikainen, 2008). Information about factors associated with older migrants' and refugees' mental health is needed, as they can be especially vulnerable to depression and other mental health problems (Abu-Bader, Tirmazi, & Ross-Sherif, 2011; Silveira & Ebrahim, 1995) that increase their need for services. In Finland, the state provides public health care and social services to all permanent residents. Public health care centers receive all residents in the corresponding area, and permanent health care services designed for migrants and refugees are very few, except for one psychiatric clinic for immigrants and two centers for victims of torture.

We aimed to answer two research questions: (a) What are the most common causal attributions of mental health problems among older Somali refugees? (b) How are demographic (sex, age, and education) and diagnostic (psychiatric diagnosis and/or treatment history) characteristics and proxy indicators of acculturation (Finnish nationality, time in Finland, and Finnish language proficiency) associated with mental health attributions?

Concerning the relationships between causal attributions and depressive symptom manifestation, we hypothesized that: (a) Intraindividual causal attributions (e.g., excessive worrying) are associated with more frequent cognitive depressive symptoms (e.g., guilt) and with fewer somatic-affective symptoms (e.g., low affect); and (b) Life experience attributions (e.g., war, poverty) are associated with fewer cognitive depressive symptoms and with more frequent somatic-affective symptoms. We did not have a hypothesis concerning depressive symptom manifestation and religion because socioreligious attributions may involve both individual responsibilities and community affiliation.

Method

Participants and procedure

The study participants were 128 Somalis aged between 50 and 80 years, all born in Somalia and living in the Helsinki metropolitan area. According to the Population

Register Center, 307 older (> 50 years) Somalis were living in the area in 2006. Of these 307 individuals, every second person was randomly chosen ($N = 155$). Fifteen of the chosen individuals were excluded due to hospitalization or absence, and two had passed away. Participants were contacted by phone and information letters, as well as through social networks, mosques, cultural centers, language classes, and coffee shops. Ten of the remaining 138 eligible participants refused to participate, leaving a final sample of 128 participants, for a response rate of 93%.

The second author (a native Somali speaker) and a social psychologist trained and supervised eight Somali speaking research assistants, three women and five men, who carried out the research visits in 2007. The majority of Somali women chose to meet in their homes, while men preferred some of the common meeting places within the Somali community. Because of the high illiteracy rate (48%), all the questions were read aloud and the answers were written by the research assistants. All the research visits were conducted in the Somali language and lasted an average of 2 hours. The interview included questions about the participants' pre- and postmigration experience, religiousness, health practices, mental health symptoms, and causal attributions of mental health problems. In this study, we focus on analyzing depressive symptoms and causal attributions of mental health problems. Other findings have been reported elsewhere (Kuittinen et al., 2014; Märsä Kuittinen, Tiilikainen, Honkasalo, & Punamäki, 2016; Märsä et al., 2014). Prior to fieldwork, a pilot test was carried out with 10 Somali volunteers aged over 50.

Measures

Demographic characteristics. Data were collected on participants' sex, age, civic status, education, and employment status. Age was classified into three classes: 50–59; 60–69; and 70–80 years. Civic status was recorded as married, divorced, widowed, or single. Education was divided into three classes: none; vocational training/some courses; and university/polytechnic education. Employment status options were full time employment, part time employment, unemployed, retired, or other.

Diagnostic characteristics. Participants were asked whether they had been diagnosed with a psychiatric disorder (specific diagnoses of either psychosis, depression, anxiety, or substance abuse) and whether they had been hospitalized, received medication, or visited a doctor due to the disorder. For the statistical analyses, we formed a single dichotomous variable of psychiatric diagnosis and/or treatment history (0 = no psychiatric diagnosis and no treatment history; 1 = a psychiatric diagnosis and/or treatment history).

Proxies of acculturation. To analyze the role of living in Finland, we used three proxy indicators of acculturation: current residency status; time spent in Finland; and language proficiency. For the purposes of statistical analyses participants were categorized either as Finnish citizens or not. In order to obtain Finnish nationality,

applicants must have satisfactory knowledge of Finnish or Swedish (the other official language in Finland) and have lived in Finland at least 4 or 5 years (depending on the nationality of the spouse). Time spent in Finland (in years) was divided into three classes: 0–5 years, 6–10 years, and 11–20 years. Finnish language proficiency was categorized as not knowing any Finnish or having at least basic knowledge of the language.

Depressive symptoms. Symptom manifestation was assessed by the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Moc, & Erbaugh, 1961). The BDI is a 21-item scale with statements related to depressive mood, thoughts, and behavior and response categories that range in severity (e.g., “I do not feel sad,” “I feel sad,” “I am sad all the time, and I can’t snap out of it,” “I am so sad or unhappy that I can’t stand it”) scored on a 4-point scale from 0 to 3. These are summed to yield an overall score from 0 to 63. Common cut-off scores according to the severity of depression are 0–9 indicating no depression, 10–18 indicating mild-to-moderate depression, and >19 indicating moderate-to-severe depression (Beck et al., 1961). In a previous study involving the same Somali sample and a matched-pair Finnish sample, two BDI symptom manifestation categories were identified through factor analysis: somatic-affective and cognitive symptoms (Kuittinen et al., 2014).

Causal mental health attributions. To indicate causal mental health attributions, the participants were asked to state the three most important causes for mental health problems without ranking the causes in importance. The generic term “mental health problems” was chosen because of the discrepancies between psychiatric terminology in Somali and Finnish/English. The analysis proceeded in three stages. First, all responses were listed and conceptual categories underlying the responses were identified through content analysis. Second, the emerging categories were named, in part based on an earlier study that identified causes related to social environment, personal characteristics, interpersonal relationships, biological factors, and spiritual factors (Phillips, Li, Stroup, & Xin, 2000).³ We therefore derived five attribution categories depicting (a) somatic, (b) interpersonal, (c) psychological, (d) life experiences, and (e) religious causes.

In the third stage, two raters (the first author and a social psychologist) classified all the single responses into the five attribution categories. The attribution categories were formed as follows: (a) the somatic attributions category consisted of answers related to insomnia, somatic problems (e.g., diabetes, migraine), and substance use (e.g., alcohol, khat⁴). (b) The interpersonal attributions category comprised answers relating to social networks and relationships with others (e.g., family problems, loneliness) and *maseyrka* (jealousy due to polygamous relationships). Classification decisions were based on the principal character of the responses. For example, although *maseyrka* describes an individual emotional experience, it was classified as an interpersonal cause because it is intrinsically related to family and social relationships. Curses and sorcery were classified as interpersonal causes in line with their meaning in East African contexts and

Somali culture, where they are associated with powerful people within one's social network (Helander, 1995; Reynolds Whyte, 1997). (c) The psychological attributions category consisted of answers depicting one's emotional experience (e.g., sadness, worrying) and cognitive-behavioral responses (e.g., excessive thinking, gambling). (d) The life experiences category comprised answers relating to the living environment and life experiences, such as poverty, war, hard life, and loss of property. (e) The religious attributions category included answers referring to God, God's will, and losing one's religious belief. *Jinn* spirits were also classified as religious causes, as they are thought to be created by God and are presented in the Koran (Dein et al., 2008; Lim et al., 2015). Because *waalli* often describes "madness" and not causes for it, answers of *waalli* could not be classified into any of the five attribution categories and were thus excluded from further statistical analyses using the attribution categories.⁵

The values of each attribution category ranged from 0 to 3, because the participants reported three causes that were classified into the attribution categories. For example, the value of interpersonal attribution category was 0 if the participant reported no causes that were classified as interpersonal. If the participant reported one or more causes that were classified as interpersonal (e.g., loneliness, *maseyrka*, or family problems), the value of the interpersonal attribution category was 1, 2, or 3, according to the number of reported interpersonal causes. When the raters failed to agree on the classification, it was decided based on discussion or according to the first rater's (the first author) opinion. The interrater agreement of the blind coding (kappa) was high, reaching 0.91.

Finally, in order to analyze the associations between attribution categories, demographic and diagnostic characteristics, acculturation proxies, and depressive symptom manifestation, we formed three wider attribution categories from the first five categories. The first category combined interpersonal and religious causes into one category labeled socioreligious causes, including all answers related to interpersonal relationships, *jinn*, and God. This decision was based on traditional Somali medicine, which sees health as relational and dependent on balance in the social world and on one's relation to God, spirits, and other humans (Slikkerveer, 1990, p. 167). The second category combined psychological and somatic causes into one category that was labeled intraindividual causes reflecting psychological and physical factors located inside the individual. This is in line with holistic health views in Somali culture that contradict dualistic divisions between psychological and physical factors. Finally, the third category included the same life experiences attributions (e.g., war, poverty) as those used in the division of the first five categories.

Data analysis

The data were analyzed with SPSS statistical software (Version 22.0). Demographic and diagnostic characteristics were analyzed with descriptive statistics (frequencies and percentages). The categorization of somatic-affective and cognitive depressive

symptoms was done using a direct oblimin rotated principal factor analysis. The reliability of the blind classification of causal attributions into attribution categories was statistically analysed by the kappa coefficient. Spearman correlations were used to test the correlations between different causal attribution categories. Chi square tests were used to test the association between demographic and diagnostic characteristics, proxies of acculturation, and causal attribution categories. The association between depressive symptoms and causal attribution categories was analyzed using the Mann–Whitney test.

Results

Descriptive statistics

Table 2 presents the demographic information of the participants' sex, age, civic status, education, employment status, and proxy indicators of acculturation. Of the participants, who ranged in age from 50 to 80 years, 59% were women ($M=57.90$, $SD=10.50$). Most participants reported having no formal schooling, and more than half were either unemployed or retired.

About a half (48%) reported being illiterate. Approximately half (48%) indicated no knowledge of Finnish, while only 14 participants (11%) indicated having good language proficiency. Slightly more participants (12%) reported knowing some English, whereas no one knew Swedish, the other main official language in Finland.

The sum score of depressive symptoms varied between 0 and 30. Approximately half of the participants (56%, $n=71$) indicated having no depression, a quarter (25%, $n=31$) had mild to moderate depression, and 19% ($n=24$) reported having moderate to severe depression. In order to analyze the manifestation of specific depressive symptoms we conducted a direct oblimin (oblique) rotated principal axis factor analysis⁶ (see Table 1). According to the factor solution, two symptom categories, cognitive depressive symptoms and somatic-affective depressive symptoms, were formed. The cognitive depressive symptom category included seven items about negative feelings and ideas about self: sense of failure, dissatisfaction, guilt, self-dislike, self-blame, suicidal ideation, and body image change. Somatic-affective symptoms included 14 items about lowered mood, lack of motivation, and somatic discomforts: depressed mood, hopelessness, feeling of punishment, crying, irritability, lack of interest in others, difficulty making decisions, difficulty working, insomnia, fatigue, lack of appetite, weight loss, worry about health, and lack of interest in sex. The factor intercorrelation was .32 and the factors had adequate or good internal reliabilities (Table 1).

Overall, 17 participants (10 women, seven men; 13%) had been diagnosed with and/or received psychiatric treatment because of a mental health problem. There were 11 diagnoses of psychosis, six of depression, nine of anxiety, and one substance abuse problem, thus indicating comorbid problems. Six of the respondents had been hospitalized and four had received medication for their condition. During

Table 1. Principal axis factor analysis of the Beck Depression Inventory Items ($N = 128$).

Item	Somatic-affective	Cognitive
Depressed mood	.676	.086
Hopelessness	.434	.249
Sense of failure	.140	.417
Dissatisfaction	.301	.554
Guilt	.226	.635
Feeling of punishment	.752	.016
Self-dislike	-.122	.639
Self-blame	.028	.473
Suicidal ideation	-.125	.371
Crying	.740	-.100
Irritability	.730	.040
Loss of interest in others	.735	.041
Indecisiveness	.833	.004
Body image change	.122	.513
Difficulties working	.570	.177
Insomnia	.930	-.113
Fatigue	.861	-.112
Loss of appetite	.900	-.039
Loss of weight	.467	.105
Somatic preoccupation	.756	-.105
Loss of interest in sex	.392	.021
Factor intercorrelation	.315	
Cronbach's alpha	.73	.93

Note. Items assigned to somatic-affective and cognitive symptom categories are shown in bold.

the 12 months prior to the study, five participants (4%) had seen a doctor at least once because of psychiatric distress.

Distribution of mental health attributions

In total, the participants gave 336 answers on potential causes of mental health problems. The five most commonly endorsed single causes were *jinn* ($n = 52$), *maseyrka* (jealousy related to polygamous relationships in particular; $n = 41$), general unspecified problems and difficulties in life ($n = 30$), poverty ($n = 24$), and war ($n = 21$). *Waalli* (madness) was stated as a cause for mental health problems by 11 participants, and nine attributed mental health problems to God. A few answers referred to a strong emotional experience, for example, fear ($n = 6$), shock ($n = 5$),

Table 2. Demographic variables.

	<i>n</i>	%
Gender		
Women	75	59
Men	53	41
Age (years)		
50–59	78	61
60–69	43	34
70–80	7	6
Civic status		
Married	79	62
Divorced	12	9
Widowed	33	26
Single	3	2
Education		
No education	86	66
Vocational training/Courses	23	18
Polytechnic/University	17	13
Other	4	3
Employment status		
Full time employment	10	8
Part time employment	3	3
Unemployed	49	38
Retired	18	14
Other	2	2
Current residency type		
Finnish nationality	25	20
Permanent residency permit	61	48
Humanitarian law	20	16
Family member status	9	7
Other	12	9
Time of residency in Finland		
0–5 years	36	27
6–10 years	40	31
11–20 years	53	41
Language proficiency		
No	61	48
Yes	34	27

Note. Some percentages do not add up to 100% due to rounding and missing values.

Table 3. Classification of mental health attributions and frequencies and percentages of attribution categories.

Attribution category	Examples	Participants (N = 128)	
		n	%
Life experiences	Poverty	73	57
	War		
	Hard life		
Interpersonal attributions	Family problems	67	52
	Loneliness		
	<i>Maseyrka</i>		
Religious attributions	<i>Jinn</i>	52	41
	God's will		
	Disease caused by God		
	Losing one's religious belief		
Psychological attributions	Gambling	33	26
	Excessive thinking		
	Worrying		
Somatic attributions	Diabetes	30	23
	Insomnia		
	Substance use		

Note. Because the participants reported three causes for mental health problems, the frequencies and percentages of the attribution categories do not add up to 100%.

and *murugo* (sadness; $n=4$). Uncommon single causes were sorcery ($n=1$), curse ($n=2$), *welwel* (worry; $n=2$), *buufis* (sadness and distress related to migration experience; $n=2$), brain chemistry ($n=1$), brain disease ($n=3$), and syphilis ($n=2$).

These single causes (with the exception of *waalli*) were classified into five attribution categories. Table 3 presents examples of the answers in each attribution category and their prevalence (frequencies and percentages) among all respondents. The most common attribution categories were life experiences and interpersonal relationships, endorsed by 57% and 52% of the participants, respectively. As can be seen in the correlations between different attribution categories (Table 4), the categories did not overlap significantly (i.e., show positive correlations), with the exception of interpersonal and religious attributions, which correlated positively ($r=.250, p < .01$). The significant positive correlation between interpersonal and religious attributions (Table 3) thus supported our decision to combine interpersonal and religious causes into a socioreligious causes category.

Table 5 shows the frequencies and percentages of the three attribution categories (socioreligious, intraindividual, and life experiences) according to sex, age, education, diagnostic characteristics, and proxy indicators of acculturation. Women and men differed in their causal attributions of mental health problems. Intraindividual attributions were more common among men (59%), while socioreligious

Table 4. Spearman correlations between attribution categories

	Life experiences	Interpersonal	Religious	Somatic
Interpersonal	.120			
Religious	.142	.250**		
Somatic	-.046	-.208*	-.283**	
Psychological	-.307**	-.186*	-.327**	.050

Note. $N = 128$. The values of the attribution categories range from 0 to 3.
* $p < .05$, two-tailed; ** $p < .01$, two-tailed.

attributions were more frequent among women (72%). Education was marginally associated ($p < .10$) with two attribution categories. Life experience attributions were more common among participants with a university level education (82%) than among those who had only vocational level education (52%) or among those with no formal schooling at all (54%). Intraindividual attributions were less common among participants with vocational level schooling (22%) than among those with no formal schooling (42%) or university education (59%). Age and proxy indicators of acculturation were not associated with the attribution categories. Finally, two thirds (65%, 11/17) of the participants with a psychiatric diagnosis and/or past treatment history endorsed intraindividual and life experiences attributions, and almost half (47%, 8/17) endorsed socioreligious attributions. Intraindividual attributions were more common among participants with a psychiatric diagnosis and/or treatment history than among other participants.

Causal attributions and depressive symptom manifestation

To test the associations between attribution categories and somatic-affective and cognitive depressive symptoms, we formed dichotomous variables of socioreligious, intraindividual, and life experiences attribution categories. Owing to nonnormality in the data, we ran pairwise nonparametric comparisons between each attribution category and somatic-affective and cognitive depressive symptoms. Associations between intraindividual attributions and depressive symptoms type were not significant, thus failing to support our first hypothesis. Confirming our second hypothesis, a Mann–Whitney test indicated that participants who attributed mental health problems to life experiences had significantly less cognitive depressive symptoms (M rank 77.32) than those who did not (M rank 72.35), $U = 1521.000$, $z = 2.406$, $p = .016$. However, when controlling for multiple comparisons (false discovery rate; Benjamini & Hochberg, 1995), the result became only marginally significant (10% significance margins, $p = .096$). Contrary to the hypothesis, life experiences attributions were not associated with more somatic-affective symptoms. Socioreligious attributions did not have any specific associations with depressive symptoms.

Table 5. Distributions of attribution categories according to gender, age, education, psychiatric diagnosis/treatment history, and proxy indicators of acculturation (percentages and frequencies of the attributions, and χ^2 values)

	Life experiences		Socioreligious		Intraindividual	
	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>
Gender						
Male	53	28	53	28	59	31
Female	59	44	72	54	29	22
χ^2 values		.43		4.96*		10.88**
Age						
50–59	57	49	65	56	38	33
60–69	54	20	60	22	49	18
70–79	60	3	80	4	40	2
χ^2 values		.12		.94		1.13
Education						
None	54	45	68	57	42	35
Vocational	52	12	57	13	22	5
University	82	14	47	8	59	10
χ^2 values		5.09 ^y		3.11		5.78 ^y
Psych. diagnosis /treatment						
No	55	61	68	74	38	42
Yes	65	11	47	8	65	11
χ^2 values		.57		2.46		4.37*
Finnish Nationality						
No	53	55	65	67	42	43
Yes	6	17	60	15	40	10
χ^2 values		1.74		.22		.033
Years in Finland						
0–5	54	19	71	25	37	13
6–10	45	18	63	25	40	16
11–20	66	35	60	32	45	24
χ^2 values		4.18		1.18		.62
Language proficiency						
No	54	33	64	39	34	21
Yes	65	22	65	22	44	15
χ^2 values		1.00		.011		.87

Note. Degrees of freedom vary between 1 and 2.

^y $p < .10$, two-tailed; * $p < .05$, two-tailed; ** $p < .01$, two-tailed.

Discussion

In this study, we examined causal attributions of mental health problems of older Somali refugees to better understand their illness experience and shed light on mechanisms that may lead to culturally related ways of manifesting depressive symptoms. Our findings concur with other studies in that the participants generally considered life experiences and religious and social worlds to be the most important determinants of mental health (Carroll, 2004; Pavlish et al., 2010; Tiilikainen, 2010). The two most common single concepts thought to cause mental health suffering were *jinn* and *maseyrka* (jealousy related to polygamous relationships), reflecting specific aspects of Somali culture. Other common causal attributions were war, poverty, and having a hard life, highlighting sociopolitical origins of suffering that can be readily shared and understood across cultural settings.

Women's and men's experiences have traditionally been very different in Somali culture (Lewis, 2008) and this was reflected in our findings. Women attributed mental health problems to socioreligious factors (interpersonal relations and relationships with *jinn* and God), while men emphasized intraindividual causes (somatic and psychological factors) for mental health problems. Finnish nationality, time spent in Finland, and Finnish language proficiency were not associated with mental health attributions. Finally, Somalis who attributed mental health problems to life experiences, such as war and poverty, manifested marginally less cognitive depressive symptoms (e.g., guilt, feelings of worthlessness) than those who did not.

In general, participants did not endorse biomedical causes (e.g., brain disease, chemical imbalance) for mental health problems, and attributions to heredity or personality (e.g., being sensitive or hostile) were completely absent. Instead, participants' views on the causes of mental health problems were in line with empirical evidence from low-income countries that highlights the role of social surroundings and difficult living environments, such as unemployment, hunger, and violence, for mental health (Desjarlais et al., 1995). Although many Somalis face multiple problems in Finland, none of the responses in the present study specifically mentioned postmigration experiences in Finland as possible causes for mental health problems. However, two individuals attributed mental health problems to *buufis*, which refers to sadness and distress related to migration experience.

While some common traditional illness attributions in Somali culture, such as *saar* spirits or evil eye, were absent in this study, *jinn* spirits were very commonly named as a cause of mental illness. The results contrast with earlier findings among Somali origin migrants that have documented *saar* spirits—often associated with older married women—as relevant mental health attributions (Johnsdotter et al., 2011; Mdsæt al., 2010). The high prevalence of attributions to *jinn* is in line with studies among various Muslim groups that clearly indicate the relevance of *jinn*, even in exile (Dein et al., 2008; Lim et al., 2015). The lack of attributions to *saar* spirits concurs partly with the argument that, in exile, Somalis' views have shifted to match new Islamic interpretations as their knowledge of Islam and general religiosity have increased. This change in perceptions of illness and proper ways

of healing is linked to a larger religious-political change in Somalia where Sufi Islamic practices including certain acceptance and understanding of coexistence between humans and spirits are giving way to more puritan forms of Islam (Berns McGown, 1999; Tiilikainen, 2010). In other words, traditional ideas on the causes of illnesses or healing practices are changing among Somalis in Finland not only because of their encounters with Finnish health culture and practices, but also because of recent religious-political shifts that have led to new interpretations of Islam in Somalia (Md̄s̄āet al., 2010). *Jinn* spirits are specifically acknowledged by Islamic theology, contrary to *saar* or other spirits, and they continue to be meaningful and acceptable ways of understanding illness and suffering even after migration, as confirmed by our results.

The sex differences in causal attributions found in our study could be interpreted in line with Eagly's social role theory (1987), which holds that the traditional labor division between men and women involves women taking care of the home and children while men pursue tasks outside the home. According to the theory, this leads women to endorse more traits, needs, or values related to interpersonal relationships, whereas men manifest more traits emphasizing individual agency. In our study, women attributed mental health problems more to interpersonal relations and relationships with *jinn* and God, and men, to individual factors such as excessive thinking or substance use. Additionally, research from sub-Saharan Africa revealed that supernatural attributions of mental health problems such as spirits are more common among women than men (Ikwuka, Galbraith, & Nyatanga, 2014).

Education was marginally associated with two attribution categories. First, higher level of education was associated with a tendency to report more attributions related to life experiences (e.g., war). This was also the most common attribution category among all participants. Half of the participants with high education also supported socioreligious causal attributions. Our results thus contradict the general belief that traditional health views fade away with education. Second, highly educated and less educated participants had similar understandings of intraindividual causes for mental health problems. Overall, participants endorsed multiple explanations simultaneously, which were relatively stable regardless of education.

Age and proxy indicators of acculturation were not associated with mental health attributions. The low levels of Finnish language skills and low rates of employment are indicative of the contextual barriers to Somalis' acculturation. Older Somalis may therefore be especially isolated and unfamiliar with many health related views and customs in Finland. Furthermore, the small number of attributions to sorcery or curses may reflect older Somalis' experiences and changed social position in Finland. Traditionally in Somalia older people have had a highly valued position in the community and the power to curse—or to bless—others, mainly younger individuals (Helander, 1995). In Finland, however, many may feel that they have lost their authority in the family due to their lack of language skills, a shift in the younger generation's values, or feelings that their knowledge is no longer needed (Md̄s̄ā & Tiilikainen, 2008).

The levels of depressive symptoms among older Somalis reported in this study (25% mild to moderate depression, 19% moderate to severe depression) are considerably higher than the estimates for the general Finnish population. According to large scale national health reports, in 2000, the 12-month prevalence for any depressive disorder was 6.5% (Pirkola et al., 2005). In 2011, the estimates for severe depressive symptoms and depressive disorder in the past 12 months were 6.5% and 5.3%, respectively (Suvisaari et al., 2012). When we compared the same Somali participants of the current study with a Finnish sample matched according to gender, age, and education, the Somalis manifested more depressive symptoms than the Finns on average, but the rates of clinical depression did not differ between the two groups (Mdsät et al., 2014).

In spite of the high levels of reported symptoms, only 17 participants (13%) had been diagnosed with a psychiatric disorder and/or received treatment for it. Only five individuals (4%) had seen a doctor during the 12 months prior to the study. This illustrates the service use gap that is common among refugee populations: despite experiencing depressive symptoms, older Somali refugees rarely seek or receive help from Finnish psychiatric services. Compared to other individuals, those who had been in contact with the Finnish psychiatric service system (diagnosed with and treated for a mental health problem) attributed mental health problems to psychological or somatic causes more often. Being in contact with health care professionals can shape attributions, but it is equally likely that those who attributed problems to inner psychological characteristics (e.g., excessive worrying) and somatic health problems (e.g., migraine) may have sought psychiatric help more readily than others.

In Finland, mental health problems are typically conceptualized as biomedical states (Tikka et al., 2012). The different mental health views in Finnish and Somali cultures may help to explain why many Somali origin migrants perceive Finnish mental health services as inadequate and prefer not to use them (Tiilikainen & Koehn, 2011). Nevertheless, cultural differences in causal attributions are only one potential reason for nonusage. Other reasons include language barriers, lack of trust of professionals, availability of services, or the reputation of mental health services among immigrant populations.

Limitations

This study has important limitations. First, the assessment of psychological distress using the BDI scale reflects cultural ideas of Western psychiatry and might not recognize salient forms of distress among Somalis. However, immigrants in Finland are faced with Western psychiatric services and assessment methods because they use the same services as native Finns. Second, the use of proxy measures to assess acculturation may not capture the complex and multidimensional nature of acculturation processes. Third, we focussed only on causal attributions of mental health problems. A broader and more dynamic assessment of mental health concepts including actual behavior, processes leading to problems, desired

outcomes, and views about effective treatment, as proposed for example in concepts of “explanatory models” (Kleinman, 1980), “exploratory maps” (Williams & Healy, 2001), or “illness narratives” (Groleau, Young, & Kirmayer, 2006), would provide deeper insight into participants’ mental health views. As the participants were asked to state the three most important causes for mental health problems, it is possible that some relevant attributions did not come up in this study simply because they were not in the “top three.” Further, because of the holistic health views in Somali communities, focusing purely on “mental” health may have obscured important issues concerning health beliefs in general. For example, one potential reason we did not find more associations between attribution categories and depressive symptoms could be the absence of attributions to heredity or personality. It would therefore be useful to develop a questionnaire about potential attributions that includes both typical concepts in Somali culture, such as *jinn* or *maseyrka*, as well as Western psychiatric concepts including personality traits or biochemical attributions. This would allow the inclusion of more individual-focused attributions and their variations that might be associated with depressive symptoms.

Finally, the cross-sectional study design can only identify associations, not causal relations, between attribution categories and depressive symptoms. The relatively small group sizes in the comparisons and the low power of nonparametric tests may have limited our ability to detect differences. We did not use parametric tests due to nonnormality in the data. Future studies with larger samples and more sophisticated statistical methods might better capture the associations between causal attributions and symptom manifestation.

Conclusion

A common critique of cross-cultural psychology concerns the focus on comparing differences between cultural groups and lack of deeper cultural analyses (Matsumoto & Yoo, 2006). In order to understand the mechanisms that lead to cultural patterns of psychiatric symptom manifestation, more attention should be paid to “peeling the onion of culture” (Poortinga, van de Vijver, Joe, & van de Koppel, 1987) or “unpacking culture” (see, e.g., Matsumoto & Yoo, 2006). In this study, we attempted to explain culturally specific patterns of somatic-affective and cognitive depressive symptom manifestation (Kuittinen et al., 2014) by looking at salient causal attributions of mental health problems. The results suggest that causal attributions that locate the origins of mental health problems in factors outside the individual, such as war or poverty, could explain in part the apparent lower frequency of some cognitive depressive symptoms (e.g., guilt, feelings of worthlessness) among older Somalis. The importance of individualistic values and responsibilities common in many Western contexts may contribute to the “psychologization” of depressive symptoms (Ryder et al., 2008). However, these results should be interpreted with caution, because the association between life experience attributions and cognitive depressive symptoms was only marginally

significant. Furthermore, there was no association between intraindividual attributions and cognitive depressive symptoms.

Our results clearly indicate the importance of cultural and social phenomena, interpersonal relationships, and extremely stressful life events in determining illness conceptions and subjective suffering among older Somali refugees in Finland. In clinical work, instead of concentrating on aspects of mental health that may seem foreign to practitioners or clients (e.g., specific concepts such as *jinn* or biomedical models), focusing on sociopolitical contexts and life events can serve as a common ground between health care workers and patients from different ethnic and cultural backgrounds. Further research is needed to explore the underlying dynamics of culture and expressions of ill health.

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Notes

1. 50-year-olds are considered old in Somalia, where life expectancy is approximately 54 years (World Bank, 2013).
2. The target group of this study, older Somali migrants, have mostly come to Finland as asylum seekers or as their spouses through family reunification since the late 1980s. Therefore we chose to refer to the participants as “refugees” although they were not asked about their migration status upon arrival to Finland.
3. We consulted several studies using different ways of classifying causal mental health attributions (Arthur & Whitley, 2015; Caplan et al., 2011; Lawrence et al., 2006; McCabe & Priebe, 2004). The categorizations varied according to the method used (e.g., interviews, questionnaires), studied groups, and prevalent answers, but they did not fit our data as well as the categorization described by Phillips et al. (2000).
4. A narcotic leaf consumed in the Horn of Africa, especially in the areas inhabited by Somalis.
5. After the blind coding, some answers considered ambiguous were tested with different classifications to ensure that the attribution categories did not rely too strongly on one single cause. For example, *maseyrka* (an interpersonal cause) was classified as a psychological cause because it also describes an emotional experience. We also tested classifying answers of “death” as life experience rather than as an interpersonal cause. Even after

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- making these changes, the associations of attribution categories with demographic characteristics, proxies of acculturation, and depressive symptoms remained the same.
6. In order to confirm the division of the BDI items into somatic-affective and cognitive categories, we also conducted an exploratory factor analysis (EFA) to see if other possible factor solutions would emerge. The EFA yielded three factors with eigenvalues > 1.00. Somatic and affective symptoms loaded on the first factor, and other items (cognitive symptoms) loaded on two different factors. However, because there was no theoretical reason for separating these cognitive items into two different factors, we did not change our original two-factor solution (somatic-affective and cognitive symptoms). This decision was supported by the good internal consistency of the final cognitive depressive symptoms factor (Cronbach's alpha .93). Finally, we also tested the associations of attribution categories and depressive symptom manifestation using the same factor analysis solution of the BDI items that was used in the previous study (Kuittinen et al., 2014). This did not change the subsequent results.
 7. The term syphilis is traditionally known in Somalia as a disease that causes nervousness, irritation, and lack of energy. However, the fact that it is a sexually transmitted disease is not widely known among older Somalis (Mdsät al., 2010).

References

- Abu-Bader, S. H., Tirmazi, M. T., & Ross-Sherif, F. (2011). The impact of acculturation on depression among older Muslim immigrants in the United States. *Journal of Gerontological Social Work, 54*, 425–448. doi:10.1080/01634372.2011.560928
- Ahn, W.-k., Proctor, C. C., & Flanagan, E. H. (2009). Mental health clinicians' beliefs about the biological, psychological, and environmental bases of mental disorders. *Cognitive Science, 33*, 147–182. doi:10.1111/j.1551-6709.2009.01008.x
- Aidoo, M., & Harpham, T. (2001). The explanatory models of mental health amongst low-income women and health care practitioners in Lusaka, Zambia. *Health Policy and Planning, 16*, 206–213.
- Al-Issa, I. (2000). Does the Muslim religion make a difference in psychopathology? In I. Al-Issa (Ed.), *Al-jumu-n: Mental illness in the Islamic world* (pp. 315–353). Madison, CT: International Universities Press.
- Arthur, C. M., & Whitley, R. (2015). "Head take you": Causal attributions of mental illness in Jamaica. *Transcultural Psychiatry, 52*(1), 115–132. doi:10.1177/1363461514557065
- Atallah, S. F., El-Dosoky, A. R., Coker, E. M., Nabil, K. M., & El-Islam, M. F. (2001). A 22-year retrospective analysis of the changing frequency and patterns of religious symptoms among inpatients with psychotic illness in Egypt. *Social Psychiatry and Psychiatric Epidemiology, 36*, 407–415.
- Ballenger, J. C., Davidson, J. R. T., Lecrubier, Y., Nutt, D. J., Kirmayer, L. J., Lépine, J.-P.,... Ono, Y. (2001). Consensus statement on transcultural issues in depression and anxiety from the International Consensus Group on Depression and Anxiety. *Journal of Clinical Psychiatry, 62*(Suppl. 13), 47–55.
- Beck, A. T., Ward, C. H., Mendelson, M., Moc, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4*(6), 561–571.
- Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society. Series B (Methodological), 57*(1), 289–300.

- Berns McGown, R. (1999). *Muslims in the diaspora: The Somali communities of London and Toronto*. Toronto, Canada: University of Toronto Press.
- Bhui, K., Abdi, A., Abdi, M., Pereira, S., Dualeh, M., Robertson, D., . . . Ismail, H. (2003). Traumatic events, migration characteristics, and psychiatric symptoms among Somali refugees. *Social Psychiatry and Psychiatric Epidemiology*, *38*, 35–43. doi:10.1007/s00127-003-0596-5
- Bhui, K., & Bhugra, D. (2002). Explanatory models for mental distress: Implications for clinical practice and research. *The British Journal of Psychiatry*, *181*, 6–7. doi:10.1192/bjp.181.1.6
- Bromet, E., Andrade, L., Hwang, I., Sampson, N., Alonso, J., de Girolamo, G., . . . Kessler, R. (2011). Cross-national epidemiology of DSM-IV major depressive episode. *BMC Medicine*, *9*(90), 1–16. doi:10.1186/1741-7015-9-90
- Caplan, S., Paris, M., Whittemore, R., Desai, M., Dixon, J., Alvidrez, J., . . . Scahill, L. (2011). Correlates of religious, supernatural and psychosocial causal beliefs about depression among Latino immigrants in primary care. *Mental Health, Religion, and Culture*, *4*, 589–611.
- Carroll, J. K. (2004). Murug, Waalli, and Gini: Expression of distress in refugees from Somalia. *Primary Care Companion Journal of Clinical Psychiatry*, *6*, 119–125.
- Cassanelli, L. V. (2010). Speculations on the historical origins of the “total Somali genealogy.” In M. Hoehne, & V. Luling (Eds.), *Milk and peace, drought and war. Somali culture, society, and politics* (pp. 53–66). London, UK: Hurst & Company.
- Castaneda, A. E., Lehtisalo, R., Schubert, C., Halla, T., Pakaslahti, A., Mdsä M., & Suvisaari, J. (2012). Mielenterveyspalvelut [Mental health services]. In A. E. Castaneda, S. Rask, P. Koponen, M. Mdsä & S. Koskinen (Eds.), *Maahanmuuttajien terveys ja hyvinvointitutkimus venäjä-, somalialais- ja kurditautaisista Suomessa [Migrant health and wellbeing study]* (pp. 157–164). Helsinki, Finland: National Institute for Health and Welfare.
- Dein, S., Alexander, M., & Napier, D. (2008). Jinn, psychiatry and contested notions of misfortune among east London Bangladeshis. *Transcultural Psychiatry*, *45*, 31–55. doi:10.1177/1363461507087997
- Desjarlais, R., Eisenberg, L., Good, B., & Kleinman, A. (1995). *World mental health: Problems and priorities in low-income countries*. New York, NY: Oxford University Press.
- Draguns, J. G., & Tanaka-Matsumi, J. (2003). Assessment of psychopathology across and within cultures: Issues and findings. *Behaviour Research and Therapy*, *41*, 755–776. doi:10.1016/S0005-7967(02)00190-0
- Duddu, V., Isaac, M. K., & Chaturvedi, S. K. (2006). Somatization, somatosensory amplification, attribution styles and illness behavior: A review. *International Review of Psychiatry*, *1*, 25–33.
- Eagly, A. (1987). *Sex differences in social behavior: A social role interpretation*. Hillsdale, NJ: Erlbaum.
- Eisenberg, L. (1977). Disease and illness: Distinctions between professional and popular ideas of sickness. *Culture, Medicine, and Psychiatry*, *1*, 9–23.
- Eisenbruch, M. (1990). Classification of supernatural and natural causes of mental distress. Development of a Mental Distress Explanatory Model Questionnaire. *Journal of Nervous and Mental Disease*, *178*, 712–719.
- Fazel, M., Wheeler, J., & Danesh, J. (2005). Prevalence of serious mental disorder in 7000 refugees resettled in Western countries: A systematic review. *Lancet*, *365*, 1309–1314. doi:10.1016/S0140-6736(05)61027-6

-
- Fozdar, F. (2009). "The Golden Country": Ex-Yugoslav and African refugee experiences of settlement and "depression." *Journal of Ethnic and Migration Studies*, 35, 1335–1352. doi:10.1080/13691830903123120
- Gerritsen, A. A. M., Bramsen, I., Devillé W., van Willigen, L. H. M., Hovens, J. E., & van der Ploeg, H. M. (2006). Use of health care services by Afghan, Iranian, and Somali refugees and asylum seekers living in the Netherlands. *European Journal of Public Health*, 16, 394–399. doi:10.1093/eurpub/ck1046
- Groleau, D., Young, A., & Kirmayer, L. J. (2006). The McGill Illness Narrative Interview (MINI): An interview schedule to elicit meanings and modes of reasoning related to illness experience. *Transcultural Psychiatry*, 43, 671–691. doi:10.1177/1363461506070796
- Guerin, B., Guerin, P., Diiriye, R. O., & Yates, S. (2004). Somali conceptions and expectations concerning mental health: Some guidelines for mental health professionals. *New Zealand Journal of Psychology*, 33, 59–67.
- Hammond, L., Awad, M., Dagane, A., Hansen, P., Horst, C., Menkhaus, K., & Obare, L. (2011). *Cash and compassion: The role of the Somali diaspora in relief, development and peace-building* (Report of a study commissioned by UNDP Somalia). Retrieved from <http://www.hiiraan.com/2011/May/Cash-and-Compassion-Draft-for-comments.pdf>
- Helander, B. (1995). Disability as incurable illness: Health, process, and personhood in southern Somalia. In B. Ingstad, & S. Reynolds Whyte (Eds.), *Disability and culture* (pp. 73–93). Berkeley: University of California Press.
- Ikwuka, U., Galbraith, N., & Nyatanga, L. (2014). Causal attribution of mental illness in south-eastern Nigeria. *International Journal of Social Psychiatry*, 60(3), 274–279.
- Jasinskaja-Lahti, I., Liebkind, K., & Perhoniemi, R. (2006). Perceived discrimination and well-being: A victim study of different immigrant groups. *Journal of Community & Applied Social Psychology*, 16, 267–284. doi:10.1002/casp.865
- Johnsdotter, S., Ingvarsdotter, K., Ötman, M., & Carlbom, A. (2011). Koran reading and negotiation with jinn: Strategies to deal with mental ill health among Swedish Somalis. *Mental Health, Religion & Culture*, 14, 741–755. doi:10.1080/1364676.2010.521144
- Kleinman, A. (1980). *Patients and healers in the context of culture*. Berkeley: University of California Press.
- Kleinman, A., Eisenberg, L., & Good, B. (1978). Clinical lessons from anthropologic and cross-cultural research. *Annals of Internal Medicine*, 88, 251–258.
- Kuittinen, S., Punamäki, R.-L., Mädsä M., Saarni, S. I., Tiilikainen, M., & Honkasalo, M.-L. (2014). Depressive symptoms and their psychosocial correlates among older Somali refugees and native Finns. *Journal of Cross-Cultural Psychology*, 45(14), 1434–1452. doi:10.1177/0022022114543519
- Lawrence, V., Murray, J., Banerjee, S., Turner, S., Sangha, K., Byng, R., ... Macdonald, A. (2006). Concepts and causation of depression: A cross-cultural study on the beliefs of older adults. *The Gerontologist*, 46, 23–32.
- Lewis, I. M. (1998). *Saints and Somalis: Popular Islam in a clan-based society*. Lawrenceville, NJ: The Red Sea Press.
- Lewis, I. M. (2008). *Understanding Somalia and Somaliland: Culture, history, society*. London, UK: Hurst & Company.
- Lim, A., Hoek, H. W., & Blom, D. (2015). The attribution of psychotic symptoms to jinn in Islamic patients. *Transcultural Psychiatry*, 52(1), 18–32. doi:10.1177/1363461514543146

- Loewenthal, D., Mohamed, A., Mukhopadhyay, S., Ganesh, K., & Thomas, R. (2012). Reducing the barriers to accessing psychological therapies for Bengali, Urdu, Tamil and Somali communities in the UK: Some implications for training, policy and practice. *British Journal of Guidance & Counselling*, *40*(1), 43–66.
- Matsumoto, D., & Yoo, S. H. (2006). Toward a new generation of cross-cultural research. *Perspectives on Psychological Science*, *1*, 234–250. doi:10.1111/j.1745-6916.2006.00014.x
- McCabe, R., & Priebe, S. (2004). Explanatory models of illness in schizophrenia: Comparison of four ethnic groups. *British Journal of Psychiatry*, *185*, 25–30.
- McCrone, P., Bhui, K., Craig, T., Mohamud, S., Warfa, N., Stansfeld, S. S., ... Curtis, S. (2005). Mental health needs, service use and costs among Somali refugees in the UK. *Acta Psychiatrica Scandinavica*, *111*, 65–77.
- Mdsä M., Hjelde, K. H., & Tiilikainen, M. (2010). Changing conceptions of mental distress among Somalis in Finland. *Transcultural Psychiatry*, *47*, 276–300. doi:10.1177/1363461510368914
- Mdsä M., Kuittinen, S., Tiilikainen, M., Honkasalo, M.-L., & Punamäki, R.-L. (2016). Mental health among older refugees: The role of trauma, discrimination, and religiousness. *Aging & Mental Health*. Advance online publication. doi:10.1080/13607863.2016.1165183
- Mdsä M., Punamäki, R.-L., Saarni, S. I., Tiilikainen, M., Kuittinen, S., & Honkasalo, M.-L. (2014). Mental and somatic health and pre- and post-migration factors among older Somali refugees in Finland. *Transcultural Psychiatry*, *51*(4), 499–525. doi:10.1177/1363461514526630
- Mdsä M., & Tiilikainen, M. (2008). Somalialaisten maahanmuuttajien ikääntymisen ja sairastamisen kokemuksia Suomessa [Experiences of Somali migrants on ageing and illness in Finland]. *Sosiaalilääketieteellinen Aikakauslehti [Journal of Social Medicine]*, *45*, 74–87.
- Moussavi, S., Chatterji, S., Verdes, E., Tandon, A., Patel, V., & Ustun, B. (2007). Depression, chronic diseases, and decrements in health: Results from the World Health Surveys. *The Lancet*, *370*, 851–858. doi:10.1016/S0140-6736(07)61415-9
- Palmer, D. (2006). “Imperfect prescription”: The perceptions, mental health experiences and challenges faced by the Somali community in the London Borough of Camden and service responses to them. *Primary Care Mental Health*, *4*, 45–56.
- Pavlish, C. L., Noor, S., & Brandt, J. (2010). Somali immigrant women and the American health care system: Discordant beliefs, divergent expectations, and silent worries. *Social Science and Medicine*, *71*, 353–361.
- Phillips, M. R., Li, Y., Stroup, T. S., & Xin, L. (2000). Causes of schizophrenia reported by patients’ family members in China. *The British Journal of Psychiatry*, *177*, 20–25. doi:10.1192/bjp.177.1.20
- Pirkola, S. P., Isometsä E., Suvisaari, J., Aro, H., Joukamaa, M., Poikolainen, K., ... Lönnqvist, J. K. (2005). DSM-IV mood-, anxiety- and alcohol use disorders and their comorbidity in the Finnish general population. Results from the Health 2000 Study. *Social Psychiatry and Psychiatric Epidemiology*, *40*, 1–10. doi:10.1007/s00127-005-0848-7
- Poortinga, Y. H., van de Vijver, F. J. R., Joe, R. C., & van de Koppel, J. M. H. (1987). Peeling the onion called culture: A synopsis. In C. Kagitcibasi (Ed.), *Growth and progress in cross-cultural psychology* (pp. 22–34). Lisse, the Netherlands: Swets & Zeitlinger.
- Reynolds Whyte, S. (1997). *Questioning misfortune. The pragmatics of uncertainty in Eastern Uganda*. Cambridge, UK: Cambridge University Press.

-
- Ryder, A. G., Yang, J., Zhu, X., Yao, S., Yi, J., Heine, S. J., & Bagby, M. R. (2008). The cultural shaping of depression: Somatic symptoms in China, psychological symptoms in North America? *Journal of Abnormal Psychology, 117*, 300–313. doi:10.1037/0021-843X.117.2.300
- Shorter, E. (1993). *From paralysis to fatigue: A history of psychosomatic illness in the modern era*. New York, NY: Free Press.
- Silveira, E., & Ebrahim, S. (1995). Mental health and health status of elderly Bengalis and Somalis in London. *Age and Ageing, 24*, 474–480. doi:10.1093/ageing/24.6.474
- Simon, G. E., VonKorff, M., Piccinelli, M., Fullerton, C., & Ormel, J. (1999). An international study of the relation between somatic symptoms and depression. *The New England Journal of Medicine, 341*(18), 1329–1335.
- Slikkerveer, L. J. (1990). *Plural medical systems in the Horn of Africa: The legacy of "Sheikh" Hippocrates*. London, UK: Kegan Paul International.
- Somalis in Helsinki. (2013). New York, NY: Open Society Foundations. Retrieved from <http://www.opensocietyfoundations.org/sites/default/files/somalis-helsinki-20131121.pdf>
- Sorsdahl, K. R., Flisher, A. J., Wilson, Z., & Stein, D. J. (2010). Explanatory models of mental disorders and treatment practices among traditional healers in Mpumalanga, South Africa. *African Journal of Psychiatry, 3*, 284–290.
- Statistics Finland. (2010). *Työssäkäynti 2008* [Employment 2008]. Helsinki, Finland: Author. Retrieved from http://www.stat.fi/til/tyokay/2008/01/tyokay_2008_01_2010-04-20_fi.pdf
- Statistics Finland. (2013a). *The share of foreign-language speakers in 2012 population growth was 87 per cent*. Helsinki, Finland: Author. Retrieved from http://tilastokeskus.fi/til/vaerak/2012/vaerak_2012_2013-03-22_tie_001_en.html?ad=notify
- Statistics Finland. (2013b). *Background country and origin according to age and sex by region 1990–2013*. http://pxnet2.stat.fi/PXWeb/pxweb/en/StatFin/StatFin_vrm_vaerak/045_vaerak_tau_200.px/table/tableViewLayout1/?rxid=619ee74a-97ac-4d26-a8cb-82288298b461
- Sterlin, C. (2006). Pour une approche interculturelle du concept de santé [For an intercultural approach to the concept of health]. *Ruptures, revue transdisciplinaire en santé, 1112–121*.
- Suvisaari, J., Ahola, K., Kiviruusu, O., Korkeila, J., Lindfors, O., Mattila, A., ... Viertiö S. (2012). Psykkiset oireet ja mielenterveyden häiriöt [Psychiatric symptoms and mental health disorders]. In S. Koskinen, A. Lundqvist, & N. Ristiluoma (Eds.), *Terveys, toimintakyky ja hyvinvointi Suomessa 2011* [Health, ability to function, and wellbeing in Finland in 2011] (pp. 96–101). Helsinki, Finland: National Institute for Health and Welfare.
- Tiilikainen, M. (2003). *Arjen islam. Somalinaisten elämää Suomessa* [Everyday Islam. Everyday life of Somali women in Finland]. Tampere, Finland: Vastapaino.
- Tiilikainen, M. (2010). Spirits and the human world in northern Somalia. In M. Hoehne, & V. Luling (Eds.), *Milk and peace, drought and war. Somali culture, society, and politics* (pp. 163–184). London, UK: Hurst & Company.
- Tiilikainen, M. (2011). Failed diaspora: Experiences of dhaqan celis and mentally ill returnees in Somaliland. *Nordic Journal of African Studies, 20*(1), 71–89.
- Tiilikainen, M., & Koehn, P. H. (2011). Transforming the boundaries of health care: Insights from Somali migrants. *Medical Anthropology, 30*, 518–544. doi:10.1080/01459740.2011.577288

- Tikkinen, K. A. O., Leinonen, J. S., Guyatt, G. H., Ebrahim, S., & Jävinen, T. (2012). What is a disease? Perspectives of the public, health professionals, and legislators. *British Medical Journal Open*, 2(6), 1–8. doi:10.1136/bmjopen-2012-001632
- Weiss, M. G., & Somma, D. (2007). Explanatory models in psychiatry. In D. Bhugra, & K. Bhui (Eds.), *Textbook of cultural psychiatry* (pp. 127–140). New York, NY: Cambridge University Press.
- White, G. M. (1982). The role of cultural explanations in “somatization” and “psychologization.” *Social Science and Medicine*, 16, 1519–1530.
- Williams, B., & Healy, D. (2001). Perceptions of illness causation among new referrals to a community mental health team: “Explanatory model” or “exploratory map”?. *Social Science & Medicine*, 53, 465–476.
- World Bank. (2013). *Life expectancy at birth, total (years)* [Data file]. Retrieved from <http://data.worldbank.org/indicator/SP.DYN.LE00.IN>
- World Health Organization. (2010). *A situation analysis of mental health in Somalia*. Retrieved from http://reliefweb.int/sites/reliefweb.int/files/resources/111AEF992F74A43FC125782B00484E8D-Full_Report.pdf

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Construct validity of the HSCL-25 and SCL-90-Somatization scales among Russian, Somali and Kurdish origin migrants in Finland

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Introduction

A core task in cross-cultural psychiatric research is ensuring test reliability and validity across different sociocultural¹ groups that are known to conceptualize and manifest their distress and mental health symptoms differently (Draguns & Tanaka-Matsumi, 2003; Hinton, 2012). Overcoming these challenges is central to making valid and reliable estimations of prevalence rates of psychiatric disorders. Failure to establish instrument validity can lead to spurious assumptions about mental health phenomena and affect subsequent research and knowledge. We analyze the construct validity of the Hopkins Symptom Checklist-25 (HSCL-25; Derogatis et al., 1974) depression and anxiety and the Symptom Checklist-90 (SCL-90; Derogatis et al., 1973) Somatization scales among Russian, Somali and Kurdish origin migrants in Finland.

Depression, anxiety and somatization

According to estimations, depression is the most prevalent psychiatric disorder worldwide (Bromet et al., 2011) causing a considerable amount of disease burden (Moussavi et al., 2007). In Finland, depression is a major public health concern with prevalence estimations of major depressive disorder around 7.4% in 2011 (Markkula et al., 2015). Compared to the general population, higher prevalence rates of depression have been found among refugees in North-America, Europe, Australia and New Zealand (Fazel, Wheeler, & Danesh, 2005), although some migrant groups present similar or lower levels of depression than the general population (Bhugra, 2003). According to the Finnish Migrant Health and Wellbeing Study (Maamu), depressive symptoms, measured with the HSCL-25, were considerably more prevalent among Kurdish men and women and Russian women than among the general Finnish population, whereas no differences occurred between Somali men and women or Russian men and the general population (Rask et al., 2016). It has been proposed that some of the variation in prevalence estimations might be due to methodological problems in assessing mental health (Bogic, Njoku, & Priebe, 2015).

Anxiety and somatization are also common mental health problems. A meta-analysis of anxiety among diverse refugee populations revealed prevalence estimations ranging from 20 to 88% (Bogic et al., 2015). Somatic symptoms as expressions of distress are often associated with mood and anxiety problems worldwide, and specially – although not exclusively – among refugee populations (Rohloff, Knipscheer, & Kleber, 2014; Ryder et al., 2008). Depressive, anxiety and somatization symptoms may also co-occur and overlap in various ways across different populations (Chia & Graves, 2016; Lee, Kaaya, Mbwambo, Smith-Fawzi, & Leshabari, 2008) and high comorbidity rates between depression and anxiety are common (Kessler, Chiu, Demler, Merikangas, & Walters, 2005; Lamers et al., 2011).

Measurement invariance

Measurement equivalence or *invariance* and *equivalence* or *invariance testing*, refer to a number of different concepts, levels of invariance and statistical procedures (Meredith, 1993; van de Vijver & Leung, 2011). *Construct* (or *functional*) *equivalence* concerns the qualitative similarity of concepts (or *latent variables*, e.g., depression) we want to measure. Due to the social and cultural variation in mental health conceptualization and expression, it is common to achieve only partial instead of full construct equivalence of psychiatric concepts (van de Vijver & Leung, 2011).²

The first statistical step for measurement invariance, *configural invariance*, involves establishing whether the questionnaire's construct structure remains the same for all groups. Similar construct structures imply that the same indicators (items) express the same dimensions (latent variables) across groups. The second step, *invariance of factor loadings*, examines whether the indicator (item) loadings are distributed similarly across groups. Together, reaching these two invariance stages refers to *weak measurement invariance*³ meaning that the groups we examine have the same unit of measurement (Byrne, 2008; van de Vivjer, 2011). However, weak measurement invariance does not allow direct comparisons of assessment scores or means across groups, but only relative comparisons, such as whether there are relative gender differences within groups.

Valid comparisons of assessment scores between different groups require establishing *strong* or *full measurement invariance*. For example, for comparing depressive scores across groups, the item intercepts (or thresholds in categorical data) need to be similar and the interval or ratio scales need to be identical across groups and the factor structure and factor loadings should be the same in the compared groups. In statistical terms this refers to *scalar equivalence* (Fischer & Fontaine, 2011) meaning that the mean scores of 23 and 34 on a depression scale would have the same meaning and interpretation, that is, the same scores would indicate the same symptom severity in all the studied groups.

Validity of the HSCL-25 and SCL-90-Somatization scales

The HSCL-25 is a bi-factorial instrument measuring depression and anxiety (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). The SCL-90-Somatization scale (Derogatis, Lipman, & Covi, 1973) measures somatic complaints and pains. The HSCL is commonly reported to be valid across different cultural groups (Bean, Derluyn, Eurelings-Bontekoe, Broekaert, & Spinhoven, 2007; Moua-noutoua & Brown, 1995; Syed, Zachrisson, Dalgard, Dalen, & Ahlberg, 2008). It is frequently used to assess depression and anxiety among refugee populations (Bogic et al., 2015) and its use in multicultural settings has been recommended (Davidson, Murray, & Schweitzer, 2010). However, studies among different migrant groups with big sample sizes and rigorous statistical methods are needed to better evaluate the validity of these instruments in international and multicultural settings.

Context of the study

Immigration to Finland has increased in the past years, but the number of foreign-born residents is still very low compared to other European countries; for example, approximately 5.9% of the total population at the end of 2014 (Official Statistics of Finland, n.d.a). The three biggest foreign language groups are speakers of Russian (66,000), Estonian (43,000) and Somali (16,000) (Official Statistics of Finland, n.d.b). The number of Kurdish speakers is also relatively high, at approximately 10,000 in 2013. Most Somalis and Kurds⁴ have come to Finland as refugees, whereas most Russians come because of work or for personal reasons.

Russian, Somali and Kurdish speaking groups are also significant populations internationally. The number of Russian speakers living outside of Russia is approximately 25–30 million (Ryazantsev, 2013). The Somali diaspora amounts to 1–1.5 million individuals and Somalis are one of the biggest refugee groups in Europe (Hammond et al., 2011; Somalis in Helsinki, 2013). Exact statistics about how many Kurds live in exile are lacking, but according to estimates there are approximately 1 million Kurdish origin migrants only in Europe (Başer, 2013).

Research aims and questions

We analyze the construct validity of the HSCL-25 and the SCL-90-Somatization scales. Specifically, our research question is: Can weak or strong measurement invariance be established for the HSCL-25 and the SCL-90-Somatization scales among Russian, Somali and Kurdish origin migrants? We aim to answer how these test scores can be compared across groups and whether these instruments can be used for making valid inferences about the levels of depression, anxiety and somatization in the three groups.

Methods

Participants and procedure

The data is derived from a large-scale population-based Finnish Migrant Health and Wellbeing Study (Maamu), conducted in Finland in 2010–2012 by the National Institute for Health and Wellbeing. The study procedure and data collection are described in detail elsewhere (Castaneda, Rask, Koponen, Mölsä, & Koskinen, 2012). The Maamu study is the first large-scale migrant health examination survey in Finland, and one of the largest in any of the Nordic countries. Altogether, the Maamu sample comprises 3000 individuals, aged between 18–64 years old who were born in Russia or the former Soviet Union (native speakers of Russian or Finnish), Somalia and Iraq or Iran (native Kurdish speakers). The HSCL-25 and SCL-90-Somatization scales were administered as a single self-rated questionnaire during a health examination.⁵ Information about background characteristics was gathered through face-to-face and phone interviews. Health examinations and interviews were carried out by bilingual (Russian/Somali/Kurdish and Finnish) fieldworkers trained and supervised by the National Institute for Health and Wellbeing.

The participation rate in the health examination was 53% among Kurds, 46% among Russians and 38% among Somalis. In the current study only participants who had answered at least 31 questions of the HSCL-25 and SCL-90-Somatization scales (35 questions in total) were included. This left a final sample of 1356 individuals: Russians: $n = 462$; Somalis: $n = 378$; and Kurds: $n = 516$. All individuals had lived in Finland at least one year prior to the study. The sample was drawn from the National register according to residence in six Finnish municipalities; Helsinki, Espoo, Vantaa, Turku, Tampere and Vaasa. The sampling method was stratified random sampling by municipality and ethnic group. In order to produce population-level estimates that are representative of the Russian, Somali and Kurdish populations in Finland, and in order to reduce bias due to non-response, Inverse Probability Weights (IPW: Robins, Rotnitzky, & Zhao, 1994) were calculated according to ethnic group, age group, gender, municipality and marital status. These weights are used throughout this study.

Measurements

The HSCL-25 has 15 items about depression (e.g., *Feeling blue*) and 10 items about anxiety (e.g., *Feeling fearful*) that are derived from the Hopkins Symptom Checklist. Answers are given on a scale from 1 (not at all bothered) to 4 (extremely bothered) and estimated reflecting on the past seven days.

The SCL-90-Somatization scale comprises 10 items about somatic complaints, such as trouble breathing. It is a subscale of the SCL-90 instrument. Symptom severity is evaluated on a scale of 1 (not at all bothered) to 4 (extremely bothered) considering the past seven days. All items of the

Table 1. Items in the depression, anxiety and somatization subscales of the HSCL-25 and SCL-90-Somatization scales.

Item	Subscale
1. Sex (loss of sexual interest or pleasure) (14/5)	DEP
2. Energy (feeling low in energy, slowed down) (11/14)	DEP
3. Suicide (thoughts of ending one's life) (20/15)	DEP
4. Appetite (poor appetite) (15/19)	DEP ^a
5. Crying (crying easily) (13/20)	DEP
6. Trapped (feeling trapped or caught) (21/22)	DEP
7. Self-blame (blaming oneself for things) (12/26)	DEP
8. Lonely (feeling lonely) (19/29)	DEP
9. Blue (feeling blue) (18/30)	DEP
10. Worrying (worrying too much about things) (22/31)	DEP
11. Interest (feeling no interest in things) (23/32)	DEP
12. Sleep (difficulty falling asleep or staying asleep) (16/66)	DEP ^a
13. Hopeless (feeling hopeless about the future) (17/54)	DEP
14. Effort (feeling everything is an effort) (24/71)	DEP
15. Worthlessness (feelings of worthlessness) (25/79)	DEP
16. Headaches (headaches) (8/1)	ANX ^b , SOM
17. Nervousness (nervousness or shakiness inside) (4/2)	ANX ^b , SOM
18. Faintness (faintness, dizziness or weakness) (3/2)	ANX
19. Trembling (trembling) (6/17)	ANX
20. Scared (being suddenly scared for no reason) (1/23)	ANX
21. Fearful (feeling fearful) (2/33)	ANX
22. Heart (heart pounding or racing) (5/39)	ANX
23. Tense (feeling tense or keyed up) (7/57)	ANX
24. Terror (spells of terror or panic) (9/72)	ANX
25. Restless (feeling restless or can't sit still) (10/78)	ANX
26. Chest (pains in heart or chest) (12)	SOM
27. Back (pains in lower back) (27)	SOM
28. Nausea (nausea or upset stomach) (40)	SOM
29. Soreness (soreness of muscles) (42)	SOM
30. Breath (trouble getting your breath) (48)	SOM
31. Spells (hot or cold spells) (49)	SOM
32. Numbness (numbness or tingling in parts of your body) (52)	SOM
33. Throat (a lump in your throat) (53)	SOM
34. Weak (feeling weak in parts of your body) (56)	SOM
35. Heavy (heavy feelings in your arms or legs) (58)	SOM

Note: DEP = Hopkins Symptom Checklist-25, depression subscale

ANX = Hopkins Symptom Checklist-25, anxiety subscale

SOM = Symptom Checklist-90, somatization subscale

The original numbers of the items in the HSCL-25 and SCL-90 scales are in brackets. For the depression and anxiety subscales the number in the HSCL-25 scale is displayed first.

^aItem is included in the depression scale of the HSCL-25, but not in the depression scale of the SCL-90.

These are additional items in the SCL that are not part of any of the subscales.

^bItem is included in the anxiety scale of the HSCL-25, but not in the anxiety scale of the SCL-90. In the SCL-90 items are included in the somatization subscale.

HSCL-25 and SCL-90-Somatization scales and their theoretical factor structure are displayed in Table 1. Two items included in the depression scale of the HSCL-25 (*Appetite* and *Sleep*) are not included in the SCL-90 subscales, but they contribute to the global scores of the questionnaire (Holi, 2003). Two items included in the anxiety scale of the HSCL-25 (*Headaches* and *Faintness*) are included in the somatization subscale of the SCL-90. In this study we used the classification of the HSCL-25 scale.

We used previously translated and used versions of the HSCL-25 in Russian, Somali and Kurdish (Sorani) (see Bean et al., 2007). The SCL-90-Somatization scale and questions concerning background information were translated by professional translators and checked and modified when necessary by bilingual fieldworkers working in the Maamu study.

Statistical analyses

We apply an Exploratory Structural Equation Modelling (ESEM) approach (Fong et al., 2015; Marsh, Morin, Parker, & Kaur, 2014) in analyzing measurement invariance. It combines aspects of Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA); CFA is a common method to analyze invariance across groups, but its suitability in examining psychiatric instruments can be diminished due to its assumption of zero cross-loadings between subscales (Browne, 2001; Marsh et al., 2009, 2010). In our study this is particularly relevant due to comorbidity and symptom overlap between depression, anxiety and somatization disorders (De Waal, Arnold, Eekhof, & Van Hemert, 2004). Using ESEM allows cross-loadings of items and it is considered to be particularly suitable for studying the fit of mental health questionnaires (Arias, Ponce, Martínez-Molina, Arias, & Núñez, 2016). Nevertheless, ESEM is theory driven and it is used to test the fit between existing theoretical models and datasets.

We followed the procedure proposed by Marsh et al. (2010), where successive models constrain progressively different sets of parameters for measurement invariance.⁶ All the ESEM models were run without the item *Suicide* (depression item) because of estimation issues in the Somali group.⁷ Reliability was assessed through internal consistency (Cronbach's α coefficient).

Due to the inability to find invariant structure for the three groups, we also undertook explorative analyses, EFA and Network Analysis (NA: Borsboom & Cramer, 2013) in order to find out more about the structure of the depression, anxiety and somatic indicators in each of the groups separately. The optimal number of factors to extract posteriorly in EFA was selected using Parallel Analysis (Hayton, Allen, & Scarpello, 2004; Horn, 1965)⁸. Lastly, we computed NA⁹ that serves to study the dynamics between mental health symptoms and to understand the comorbidity between disorders (Borsboom & Cramer, 2013). It holds that symptoms can be caused by other symptoms (e.g., sleep difficulties may bring about fatigue) or feedback loops (e.g., worrying causing insomnia, which exacerbates worrying and causes feeling low in energy).

Statistical analyses were done using several statistical software packages: SPSS (version 22: IBM Corporation, 2013) was used for descriptive statistics; SAS (version 9.3: SAS Institute, 2011) for Taylor linearization processing; ESEM was run using MPlus (seventh version; Muthén & Muthén, 2012); R studio (R Core Team, 2015) was used for data processing, reliability estimations, EFA (package *psych*; Revelle, 2015) and NA (package *qgraph*; Epskamp, Cramer, Waldorp, Schmittmann, & Borsboom, 2012).

Results

Descriptive statistics

Table 2 presents background information about the sample. The distribution of background variables (excluding Finnish nationality) differed between the groups. Compared to Russians, Somalis and Kurds¹⁰ had lower levels of education and employment and they had come to Finland more

Table 2. Background and sociodemographic characteristics of the study participants.

	Russian (<i>n</i> =462) <i>n</i> %	Somali (<i>n</i> =378) <i>n</i> %	Kurdish (<i>n</i> =516) <i>n</i> %	Group difference χ^2
Gender				36.957***
Men	176 38	163 43	294 57	
Women	286 62	215 57	222 43	
Age				57.302***
18-34	194 42	212 56	258 50	
35-54	199 43	144 38	237 46	
55-69	69 15	156	214	
Civic status				24.402***
Married/cohabiting	337 73	314 83	449 87	
Migration status				497.697***
Refugee or asylum seeker	5 1	212 56	356 69	
Education				287.500***
No education	0 0	95 25	62 12	
Primary or second. school	92 20	181 48	243 47	
High school	370 80	102 27	217 42	
Employment status				73.537***
Employed	189 41	110 29	196 38	
Finnish nationality	208 45	163 43	237 46	.737
	M(SD)	M(SD)	M(SD)	<i>F</i>
Time lived in Finland (years; mean)	11.85(6.13)	11.66(6.41)	10.82(5.34)	3.965**
Age when moving to Finland (years; mean)	27.28(13.43)	22.44(11.00)	24.58(10.11)	17.538***

Note: Descriptive statistics are calculated using Inverse probability weights concerning ethnic group, gender, age, civic status and municipality.

Degrees of freedom vary between 2 and 4.

****p* < .000, two-tailed.

***p* < .050, two-tailed.

often as refugees or asylum seekers. These group differences are also representative of Russians, Somalis and Kurds in Finland and thus characteristics of these populations. Practically all Somali participants (99%) and the majority of Kurds (74%) were Muslim. The Russian participants were mostly Orthodox Christian (46%) or non-religious (34%). A few more than a half (52%) of the Somali participants declared speaking one of the national languages Finnish or Swedish well, whereas these rates were slightly lower among Russians (44%) and Kurds (42%).

Preliminary analyses showed an interaction effect between sex and migrant group on depression and anxiety ($F [2, 1224] = 6.43, p = .002$ and $F [2, 1224] = 4.71, p = .009$, respectively). To test whether the factorial structure of the HSCL-25 differed between men and women, we analyzed the role of sex in the depression and anxiety scales separately in each group using Procrustes rotation¹¹ (Fischer & Fontaine, 2011). The proportionality coefficients for the two-factor structure indicate good equivalence between men and women in each group (Tucker's coefficient between .91 and .97), excluding the anxiety factor in the Somali group (.83) that is below the commonly accepted value of .85 (Ten Berge, 1986). These results indicate that the association between sex and depression and anxiety as being adequately stable across groups. Therefore we did not run the ESEM models separately for men and women.

Cronbach's alphas for the depression subscale were .87 for Russians, .79 for Somalis and .86 for Kurds; for the anxiety subscale they were .80 for Russians, .74 for Somalis and .85 for Kurds; and for the somatization scale they were .84 for Russians, .81 for Somalis and .86 for Kurds.

Measurement invariance

Table 3 displays goodness of fit indices of models of invariance. The WLSMV estimator converged normally in the successive models tested for invariance, excepting Model 2 in which it was not possible to reach successful estimation. Hence, neither weak nor strong invariance could be established.

Table 3. Goodness of tests statistics for comparing different invariance models.

Model	Invariance hypothesis	RMSEA	CFI	TLI	WRMR	χ^2 (df)
1	<i>Configural invariance</i>	.031	.979	.974	1.400	1972.203 (1386)
2	<i>Weak invariance: configural invariance [1] + factor loadings</i>					
3	<i>Weak invariance[2] + uniqueness</i>	.052	.923	.926	2.828	3841.314 (1742)
4	<i>Weak invariance[2] + factor variance-covariance matrix</i>	.027	.982	.980	2.111	2088.677 (1548)
5	<i>Strong invariance: weak invariance[2] + intercepts</i>	.037	.961	.963	2.212	2848.428 (1770)

Note: RMSEA=Root Mean Squared Error of Approximation (acceptable values below .06); CFI=Comparative Fit Index (recommended >.95); TLI=Tucker-Lewis Index (also >.95); WRMR=Weighted Root Mean Square Residual (recommended below 1.00); χ^2 (df)=Chi-square (degrees of freedom).

Exploratory analyses (EFA and NA) suggested that these estimation problems were due to poor fit between the data and the theoretical three-factor structure of the scales.

We followed the guidelines for measurement invariance proposed by Chen (2007) where, according to a significance level of .01, first, changes of .010 decrease in CFI and, second, changes of .015 increase in RMSEA indicate equivalence to less restrictive models by not being able to reject the null hypothesis of invariance. It was not possible to compute Model 2 due to computational difficulties with identification. The difference in between Models 1 and 3 is wide enough to consider it would be nevertheless impossible to reach strong measurement invariance (subsequent Model 5), which would be necessary in order to validly compare the scores across groups.

EFA

Because of problems in establishing measurement invariance, we undertook an EFA for each group (Table 4). The goodness of fit of the EFA models was poor to the extent of severe inadequacy. The Tucker-Lewis Index took values of .169, -0.098 and .761 for Russians, Somalis and Kurds, respectively. The RMSEA was .322, .467 and .099, indicating the insufficiency of EFA as a model to account for the underlying structure of the data.

For the Russian and Kurdish groups the factor solution was based on three factors, whereas for the Somali group we found a five-factor structure. However, the loading patterns among Russians and Kurds did not match the theoretical three-factor structure of the HSCL-25 and SCL-90-Somatization scales. In the Russian and Kurdish groups, Factor 1 consists of items indicating depressive mood and hyperarousal, although some items load differently in the two groups. In both groups, all the SCL-90-Somatization items load on Factor 2, and Factor 3 has only one item that belongs to the depression subscale of the HSCL-25 (*Appetite* among Russians and *Worrying* among Kurds).

The five-factor structure in the Somali group differs the most from the theoretical factor structure of the scales and from the factor solutions in the Russian and Kurdish groups. Factors 1 and 4 in the Somali group comprise a mixture of depression, anxiety and somatization symptoms. Factor 2 includes depression and anxiety items. Factor 3 comprises three depression items: *Blue*, *Lonely* and *Worrying*. Finally, Factor 5 consists of one depressive symptom (*Appetite*) and two somatization symptoms (*Spells* and *Numbness*). Five of the symptoms do not load on any factor.

NA

We applied a NA to investigate how different symptoms are connected to each other and how central versus peripheral specific symptoms are in the networks. The results per group are displayed in Figure 1 (Russians), Figure 2 (Somalis) and Figure 3 (Kurds). The prominence of symptoms is shown by their localization (central/peripheral) and by the number and thickness of connections they have to other symptoms.

As seen by the location of the symptoms in each group, depression, anxiety and somatization overlap making it difficult to group the symptoms into the theoretical concepts of separate psychopathological entities. In addition, among Russians and Kurds there are two depressive symptoms that

Table 4. Exploratory Factor Analysis of the HSCL-25 and SCL-90-Somatization scales by group.

Item	Russians			Somalis					Kurds		
	F1	F2	F3	F1	F2	F3	F4	F5	F1	F2	F3
Depression											
1. Loss of sexual interest (14/5)					.52						.42
2. Feeling low in energy (11/14)	.48			.78							.53
3. Thoughts of ending one's life (20/15)	.85				.83				.70		
4. Poor appetite ^a (15/19)			.42				-.43				
5. Crying easily (13/20)	.47					.73					
6. Feeling trapped (21/22)	.88				.42				.61		
7. Blaming oneself (12/26)	.74								.78		
8. Feeling lonely (19/29)	.80					.71			.70		
9. Feeling blue (18/30)	.81					.72			.53		
10. Worrying too much (22/31)	.67					.91			.47		.42
11. Feeling no interest in things (23/32)	.70				.56				.66		
12. Difficulty falling asleep ^a (16/66)		.41									
13. Feeling hopeless about the future (17/54)	.87				.40				.81		
14. Feeling everything is an effort (24/71)	.63				.49	.42			.59		
15. Feelings of worthlessness (25/79)	.96				.58				.79		
Anxiety											
16. Headaches ^b (8/1)		.49		.59							.54
17. Nervousness or shakiness inside ^b (4/2)	.49								.44		
18. Faintness, dizziness, or weakness (3/2)		.61		.84							.73
19. Trembling (6/17)		.48			.69						.44
20. Being suddenly scared for no reason (1/23)	.80				.41		.40		.84		
21. Feeling fearful (2/33)	.77				.43				.75		
22. Heart pounding or racing (5/39)		.57					.41				.56
23. Feeling tense or keyed up (7/57)	.78				.52				.72		
24. Spells of terror or panic (9/72)	.73				.76				.56		
25. Feeling restless or can't sit still (10/78)	.59				.67				.56		
Somatization											
26. Pains in heart or chest (12)		.80									.68
27. Pains in lower back (27)		.65		.71							.63
28. Nausea or upset stomach (40)		.41		.48							.50
29. Soreness of muscles (42)		.70		.72							.76
30. Trouble getting your breath (48)		.70									.70
31. Hot or cold spells (49)		.63						.42			.58
32. Numbness or tingling in parts of your body (52)		.83						.43			.70
33. A lump in your throat (53)		.49					.49				.76
34. Feeling weak in parts of your body (56)		.75		.67							.77
35. Heavy feelings in your arms or legs (58)		.82		.60							.64

Note: Calculated using IPW survey weights (according to ethnic group, age group, gender, municipality and marital status). In brackets the original numbers from the HSCL-25 (depression and anxiety) and SCL-90 (somatization) scales. For the depression and anxiety scales the numbers from the HSCL-25 are displayed first. ^aIncluded in the depression scale of the HSCL-25, but not in the depression scale of the SCL-90. In the SCL-90 these items are general symptoms that are not included in any of the subscales.

^bIncluded in the anxiety scale of the HSCL-25, but not in the anxiety scale of the SCL-90. Included in the somatization scale of the SCL-90.

are not connected to any another symptom (*Sex* among Russians and *Interest* among Kurds). There are also symptoms that are connected to only one or two other symptoms in the networks.

The most centric symptoms in the Russian group are anxiety and depressive symptoms. Also item *Suicide* occupies a central position, although it has very little variance in the Russian group (96% endorsed option *Not at all*, see Table 5). There is a strong positive connection for instance between the items *Heart* (anxiety) and *Fearful* (anxiety). The negative connections are less strong. Among the strongest negative connections is, for instance, the correlation between *Soreness* (somatization) and *Hopeless* (depression).

Among Kurds, depressive symptoms and somatization symptoms are the most centric. A strong positive connection is, for example, between *Worrying* (depression) and *Blue* (depression). Strong negative connections are less common. They include, for instance, the association between the items *Lonely* (depression) and *Throat* (somatization).

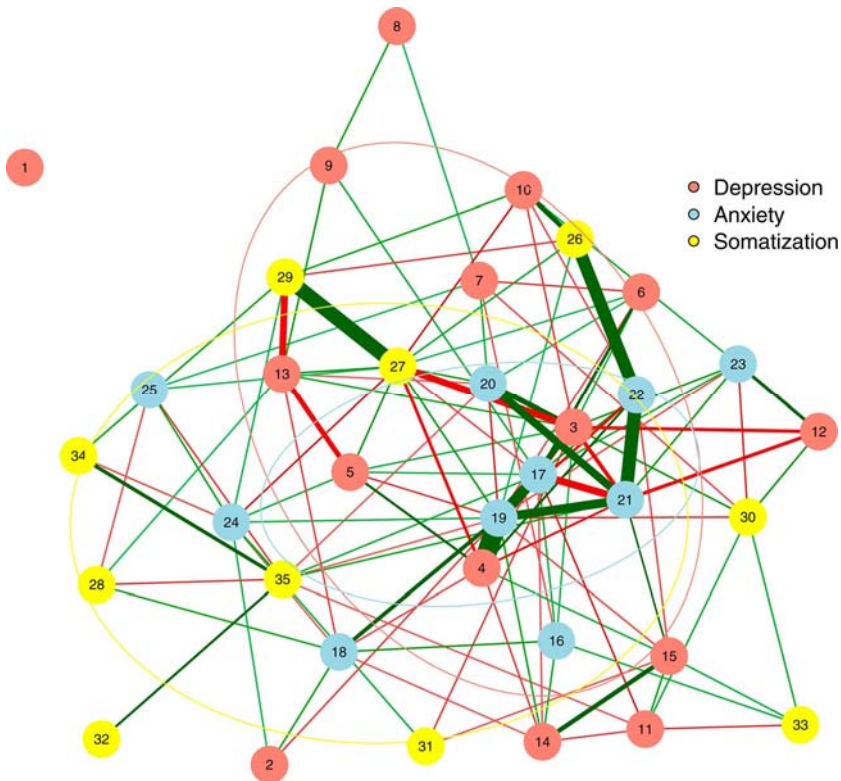


Figure 1. Network analysis based on partial polychoric correlations, Russian group.

Note: Green lines indicate positive correlations and red lines negative ones. Only Bonferroni-adjusted absolute associations above .20 are shown. The numbers in the nodes refer to the items in the HSCL-25 and SCL-90-Somatization scales (see Table 1).

Among Somalis, the number of connections, including negative correlations, between symptoms is higher. However, some of the connections seem to be due to the lack of variance in reported symptom prevalence. As seen in Table 5, 90% or more of the Somali participants endorsed option *Not at all* for 5 depression and 6 anxiety items. Therefore some of the strong correlations are explained by the generalized low endorsement of symptoms. The most central symptoms among Somalis involve a mixture of depression, anxiety and somatization. However, some of the central symptoms are those that were the least endorsed (e.g., *Restless*). Strong positive connections include the association between *Hopeless* (depression) and *Faintness* (anxiety). Among the strong negative connections is, for instance, the correlation between *Interest* (depression) and *Lonely* (depression).

Discussion

Previous research suggests sociocultural variation in how depression, anxiety and somatization are conceived (Ballenger et al., 2001; Carroll, 2004; Hinton, 2012), which challenges reliable and valid measurement of mental health phenomena cross-culturally. We analyzed the construct validity of the HSCL-25 and SCL-90-Somatization scales among a large population-based sample of Russian, Somali and Kurdish origin migrants in Finland. The results revealed that the HSCL-25 and SCL-90-Somatization scales have limitations that affect their valid use among these groups. Three different analyses (ESEM, EFA and NA) showed that it was not possible to replicate the theoretical three-factor structure (depression, anxiety and somatization) of these scales. The results do not support separating depressive, anxiety and somatization symptoms into distinct disorder categories that

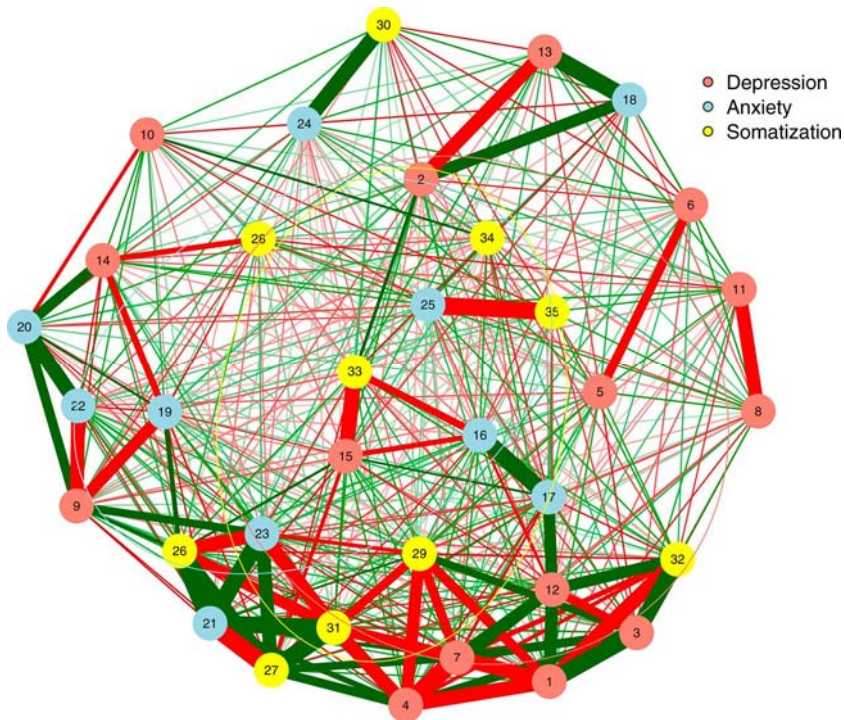


Figure 2. Network analysis based on partial polychoric correlations, Somali group.

Note: Green lines indicate positive correlations and red lines negative ones. Only Bonferroni-adjusted absolute associations above .20 are shown. The numbers in the nodes refer to the items in the HSCL-25 and SCL-90-Somatization scales (see Table 1).

match the theoretical structure, composition and conventional meaning in Western psychiatric research. There were also considerable differences between the three groups in how different symptoms co-varied and overlapped.

Measurement invariance

Using an ESEM approach, we were not able to establish weak or strong measurement invariance in our sample of Russian, Somali and Kurdish origin migrants. Moreover, we were unable to find a structure that would have made it possible to compare and interpret the obtained scores reliably across groups.

The lack of equivalence of these questionnaires implies that measuring the underlying disorders is challenging and that conclusions of prevalence may not be reliable across different sociocultural groups. For example, the previously found prevalence differences in mental health between Russian, Somali and Kurdish origin migrants in Finland (Rask et al., 2016) may partly be explained by the challenges in assessment. The inability to validate these scales also limits their suitability in cross-cultural clinical work and contradicts the claims that they would be particularly suitable among refugees and migrants (Davidson et al., 2010).

Our results concur with the critics of using solely internal consistency measures such as Cronbach's alpha to evaluate the psychometric properties of a scale (Sijtsma, 2009). In this study the Cronbach's alphas indicated good internal reliabilities (between .74 and .87), while the ESEM, EFA and NA revealed important methodological limitations in the scales.

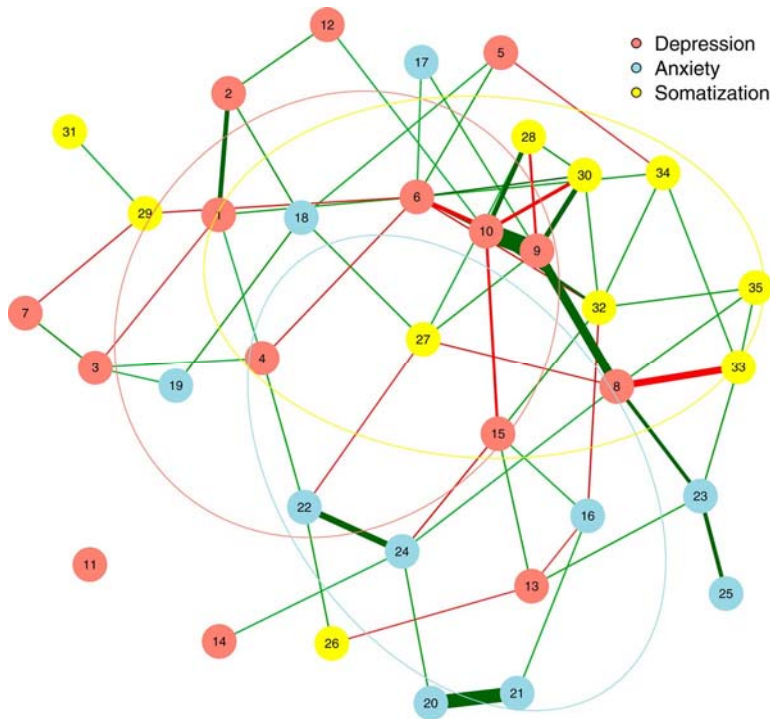


Figure 3. Network analysis based on partial polychoric correlations, Kurdish group.

Note: Green lines indicate positive correlations and red lines negative ones. Only Bonferroni-adjusted absolute associations above .20 are shown. The numbers in the nodes refer to the items in the HSCL-25 and SCL-90-Somatization scales (see Table 1).

EFA and NA

In order to analyze why we did not achieve measurement invariance, we used EFA and NA to see how different symptoms connect to each other. Our results suggest that different symptoms are not associated in similar ways in the three migrant groups. Accordingly, we were unable to find a factor structure that would have been comparable across the groups. Also the poor goodness of fit indices of the EFA indicate problems in equivalence.

The NA offers further evidence for the complex and group-specific organization of these mental health symptoms. In none of the groups were the symptoms connected to other symptoms in a way of forming coherent nod-configurations or latent constructs of depression, anxiety and somatization. Instead, the symptoms seem to be dispersed and overlapping.

Different symptoms were the most central or peripheral in each group's networks. Among Russians, the most central symptoms were anxiety and depression symptoms, whereas among Kurds depression and somatization symptoms were the most centric. Among Somalis, the most central symptoms involved a mixture of depression, anxiety and somatization symptoms.

Depressive, anxiety and somatization symptoms were associated with other symptoms in such distinct ways that it further challenges comparing these mental health problems across groups. For example, in the Somali group the number and strength of connections between different symptoms was very strong, while in the Russian and Kurdish groups there were fewer and weaker connections. In the Somali group there were no isolated symptoms, whereas among Russians and Kurds a few symptoms were not associated to any other symptom.

The found differences particularly between the Somali and Kurdish groups are interesting as both groups are mainly Muslim-faith, refugee origin and may face similar hardships in Finland (e.g., unemployment, discrimination). Nevertheless, the ways symptoms were endorsed were very

Table 5. HSCL-25 and SCL-90-Somatization scales' item endorsement frequencies (%) by group.

Answer option	Russians				Somalis				Kurds			
	1	2	3	4	1	2	3	4	1	2	3	4
Item												
Depression												
1. Loss of sexual interest or pleasure (14/5)	62	27	6	4	90	5	2	1	58	28	6	5
2. Feeling low in energy, slowed down (11/14)	41	42	13	4	77	16	5	2	54	29	10	4
3. Thoughts of ending one's life (20/15)	96	3	0	0	98	1	0	0	82	10	3	3
4. Poor appetite ^a (15/19)	76	20	2	1	81	14	2	2	63	23	8	4
5. Crying easily (13/20)	71	21	4	2	84	9	1	4	40	30	17	9
6. Feeling trapped or caught (21/22)	82	12	3	1	91	6	2	1	65	23	6	4
7. Blaming oneself for things (12/26)	67	26	5	1	86	8	2	3	52	38	5	3
8. Feeling lonely (19/29)	70	24	4	2	83	9	3	4	43	30	13	10
9. Feeling blue (18/30)	53	39	7	2	83	8	4	5	27	37	20	14
10. Worrying too much about things (22/31)	42	43	11	3	58	27	7	7	25	35	24	15
11. Feeling no interest in things (23/32)	82	15	3	1	91	5	3	1	59	27	8	4
12. Difficulty falling asleep or staying asleep ^a (16/66)	42	37	15	5	66	20	6	8	40	30	15	12
13. Feeling hopeless about the future (17/54)	75	19	3	2	89	5	3	2	63	23	6	5
14. Feeling everything is an effort (24/71)	50	35	12	2	87	8	3	1	44	36	10	8
15. Feelings of worthlessness (25/79)	84	13	2	1	95	3	0	1	76	15	4	2
Anxiety												
16. Headaches ^b (8/1)	49	39	10	3	44	39	7	9	38	41	12	7
17. Nervousness or shakiness inside ^b (4/2)	39	46	10	3	74	20	3	2	23	46	20	9
18. Faintness, dizziness, or weakness (3/2)	58	32	8	3	65	23	7	5	46	36	12	5
19. Trembling (6/17)	86	12	1	1	92	5	2	0	74	18	5	1
20. Being suddenly scared for no reason (1/23)	86	12	1	1	91	6	2	1	77	15	3	4
21. Feeling fearful (2/33)	82	14	2	1	92	5	1	1	69	20	6	3
22. Heart pounding or racing (5/39)	64	30	5	1	75	18	5	2	51	35	9	3
23. Feeling tense or keyed up (7/57)	54	37	6	2	90	6	2	1	63	26	6	4
24. Spells of terror or panic (9/72)	87	11	1	0	96	3	0	0	61	30	5	2
25. Feeling restless or can't sit still (10/78)	77	19	2	1	95	4	0	0	61	26	8	3
26. Pains in heart or chest (12)	71	24	3	1	84	11	3	2	64	24	6	3
27. Pains in lower back (27)	59	29	7	5	59	26	8	8	50	29	11	8
28. Nausea or upset stomach (40)	72	21	5	1	77	15	3	5	59	27	9	4
29. Soreness of muscles (42)	64	27	7	2	62	21	7	10	53	30	9	6
30. Trouble getting your breath (48)	82	13	4	1	85	10	4	1	65	24	6	3
31. Hot or cold spells (49)	75	18	4	1	86	10	2	3	57	32	6	4
32. Numbness or tingling in parts of your body (52)	67	23	7	2	79	14	3	4	57	29	8	3
33. A lump in your throat (53)	81	15	3	1	85	10	2	2	71	20	5	1
34. Feeling weak in parts of your body (56)	66	29	3	1	80	13	2	4	57	29	8	4
35. Heavy feelings in your arms or legs (58)	74	20	6	1	75	14	4	6	58	28	8	4

Note: Answer options 1 = Not at all; 2 = A little; 3 = Quite a bit; 4 = Extremely.

Calculated using IPW survey weights (according to ethnic group, age group, gender, municipality and marital status).

In brackets the original numbers from the HSCL-25 (depression and anxiety) and SCL-90 (somatization) scales. For the depression and anxiety scales the numbers from the HSCL-25 are displayed first.

included in the depression scale of the HSCL-25, but not in the depression scale of the SCL-90. In the SCL-90 these items are general symptoms that are not included in any of the subscales.

Included in the anxiety scale of the HSCL-25, but not in the anxiety scale of the SCL-90. Included in the somatization scale of the SCL-90.

different: the Kurds endorsed all symptoms highly, whereas the Somalis endorsed mainly somatic symptoms. A previous study from the same data revealed that experiences of discrimination were associated with higher levels of mental health symptoms and lower life satisfaction among Kurds and Russians, but not among Somalis (Castaneda et al., 2015). These results could be interpreted as highlighting unique aspects of mental health among Somali origin migrants.

Some of the low symptom endorsement among Somalis is likely to be due to religious and cultural factors. All but one Somali participant reported never having thoughts about ending their own life. Suicidal ideation is a core symptom of severe depression in the Western psychiatric framework. However, it is less common among many Muslim-faith populations as it is commonly interpreted that the Koran (4:29) forbids suicide. Also sexuality is not openly discussed among Somalis (Connor et al., 2016). In this study 90% of the Somali participants did not indicate having lack of interest in

sex. The low symptom endorsement also explains some of the strong connections between symptoms in the Somali group and can be informative of potential stigma related to mental health among Somali communities (WHO, 2010).

Cross-cultural psychiatry has shown variation in how anxiety-related symptoms are interpreted and experienced and how they connect to other symptoms (Hinton, 2012). Specific symptoms, such as numbness in different parts of body, may have distinct meanings across groups (i.e., benign symptoms or indicators of severe somatic problems) and they may thus be associated differently to, for instance, worrying or fearfulness. Local instrument validation and qualitative studies in Africa have revealed salient depressive symptoms that do not belong to Western depression scales or diagnostic criteria (Bass, Ryder, Lammers, Mukaba, & Bolton, 2008; Ventevogel, Jordans, Reis, & de Jong, 2013). For example, in a study in the Democratic Republic of Congo, local post-partum depressive symptoms included restless heart, anger and arguing (Bass et al., 2008). Culturally lived meanings and experiences can explain part of the found group differences between Russian, Somali and Kurdish origin migrants in how specific symptoms connected to each other. Cross-cultural differences in specific symptom endorsement can thus be due to several factors such as cultural meanings, religion, sensitive issues or mental health stigma. Nevertheless, also social and demographical factors, such as acculturation to the country of residence and education, are likely to play an important role in affecting experiences of specific symptoms and could explain some of the found group differences.

The unclear boundaries between the disorders and the between-group differences challenge the conceptualization of depression, anxiety and somatization as unidimensional categories. This concurs with the critics of categorical mental health disorder view, who claim that psychiatric symptoms are not manifestations of a common underlying disorder (e.g., depressive symptoms are brought about by 'depression') (Borsboom & Cramer, 2013). Instead, different psychiatric symptoms may be connected to and caused by each other forming unique constellations that can vary across individuals and groups. Depression, anxiety and somatization can be seen as internalizing psychopathology spectrum disorders on a hierarchical structure where internalizing problems are characterized by negative emotion, including depressive and anxiety symptoms (Krueger & Markon, 2006). Instead of pertaining to different categories (e.g., individuals diagnosed with depression), individuals would vary in their levels of internalizing (or externalizing) problems. The theoretical mental health models are relevant for the diagnosis and treatment of psychiatric problems. For example, treatment resistant depression might in some cases be due to misdiagnosing different mood and anxiety problems as a primary depressive disorder (Silberman & Weiss, 2016).

The results of the three analyses (ESEM, EFA and NA) all indicate challenges in the valid assessment of depression, anxiety and somatization cross-culturally and thus warrant cautiousness in comparing these assessment scores (e.g., mean or sum scores) across the groups and in prevalence estimations using cut-off scores that are not adjusted for each group (Ichikawa, Nakahara, & Wakai, 2006).

Limitations

Although we aimed to correct the bias due to non-response using IPW, we acknowledge that this might not be enough for the Somali group, whose participation rate was the lowest. However, the unpublished results of Juntunen et al. (submitted) indicate that non-response among Somalis was not associated with sociodemographic variables (sex, age, citizenship, residential area, marital status and number of residents in the household), prescription medicines and social allowances (disability, care and rehabilitation).

In order to produce population-level estimates, the sampling method should be accounted for. The most used method applied to calculate variance for data such as Maamu (stratified sample without replacement) is the Taylor linearization method. However, such calculations are very complex and because our logistic regression run with SAS found that the bias is relatively small when the

strata structure is ignored, we did not proceed with these calculations. This might produce a slight bias in our estimations.

Conclusion and further directions

The lack of measurement invariance of mental health scales distorts direct comparisons across populations and suggests that the concepts we wish to measure may have different meanings or are qualitatively distinct in different groups. This also limits their usefulness in clinical settings, where it would be important to evaluate mental health using more qualitative methods, such as culturally informed clinical interviews. Finally, more attention should be paid to developing mental health scales that reflect salient ideas and ways of experiencing suffering that might be relevant for diverse sociocultural groups. Assuming the universality of Western psychiatric instruments is likely to lead to biased and unreliable estimations of mental health problems.

Notes

1. We use the term ‘sociocultural’ throughout this article because both social and cultural determinants are crucial in understanding mental health and wellbeing in different populations. However, it is often challenging to tease out cultural factors from social characteristics of a particular group. For example, besides cultural background, refugee origin groups often differ from the general population in factors related to education, employment, financial situation and social networks. For a discussion of the term ‘culture’ in comparative psychological research, see Poortinga (2015).
2. In addition, achieving full construct equivalence using solely statistical methods is challenging because some aspects that can be relevant for the construct (e.g., anxiety) in some group may be absent in the questionnaire.
3. In statistical terms they correspond to the concepts of *structural* and *metric equivalence*.
4. The majority of Finnish Kurds are from Iraq and Iran.
5. The health examination comprised various measurements of health, such as blood pressure, blood analysis, height, weight, functional capacity, oral health, a symptom interview and the HSCL-25 and SCL-90-S questionnaires. Most participants responded to the questionnaires themselves. Five Russian and 27 Kurdish speakers were interviewed by the research nurse because of the participants’ problems in answering the questions in the written format. In addition, 22 Russian, three Somali and three Kurdish participants requested help for answering from the research nurse.
6. Because categorical indicators were used (answer options were between 1 and 4), the estimation method was weighted least squares with mean and variance adjustment (WLSMV) with oblique target rotation. Theta parametrization was implemented.
7. Suicide and suicidal thoughts can be uncommon in some Muslim-faith populations because many interpret that the Koran forbids taking one’s own life (Koran 4:29). Of the Somali participants, 98% endorsed the answer option *Not at all* (see Table 5).
8. EFA was implemented based on the sample-weighted polychoric correlation matrices by Principal Axis extractions method because it does not make any assumptions about the underlying distribution of the data.
9. NA was calculated based on weighted partial polychoric correlations in order to control for redundancy of associations among variables.
10. The majority (83%) of the Kurdish participants reported speaking Sorani dialect of the Kurdish language as their mother tongue, and 10% reported speaking another Kurdish language dialect. Most of them identified themselves as ‘Kurds’ (63%) and a few as ‘Iranian’ (8%) or ‘Iraqi’ (3%).
11. Procrustes rotation compares the similarity between a matrix of loadings and a target matrix, indicated by the Tucker’s congruence coefficient. In order to run these calculations, we had to exclude the item *Suicide* because of its lack of variance in the Somali group.

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References

- Arias, V. B., Ponce, F. P., Martínez-Molina, A., Arias, B., & Núñez, D. (2016). General and specific attention-deficit/hyperactivity disorder factors of children 4 to 6 years of age: An exploratory structural equation modeling approach to assessing symptom multidimensionality. *Journal of Abnormal Psychology, 125*(1), 125–37. doi:10.1037/abn0000115
- Ballenger, J. C., Davidson, J. R. T., Lecrubier, Y., Nutt, D. J., Kirmayer, L. J., Lépine, J.-P., ... Ono, Y. (2001). Consensus statement on transcultural issues in depression and anxiety from the international consensus group on depression and anxiety. *Journal of Clinical Psychiatry, 62*(Suppl. 13), 47–55. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/11434419>
- Başer, B. (2013). *The Kurdish diaspora in Europe: Identity formation and political activism*. (Boğaziçi University-TÜSİAD Foreign Policy Forum Research Report, DPF 2013-RR 01). Retrieved from http://cadmus.eui.eu/bitstream/handle/1814/28337/Bahar_Baser_RR_01_2013.pdf?sequence=1&isAllowed=y.
- Bass, J. K., Ryder, R. W., Lammers, M.-C., Mukaba, T. N., & Bolton, P. A. (2008). Post-partum depression in Kinshasa, Democratic Republic of Congo: Validation of a concept using a mixed-methods cross-cultural approach. *Tropical Medicine & International Health, 13*, 1534–1542. doi:10.1111/j.1365-3156.2008.02160.x
- Bean, T., Derluyn, I., Eurelings-Bontekoe, E., Broekaert, E., & Spinhoven, P. (2007). Validation of the multiple language versions of the Hopkins Symptom Checklist-37 for refugee adolescents. *Adolescence, 42*(165), 21–71.
- Bhugra, D. (2003). Migration and depression. *Acta Psychiatrica Scandinavica, 108*, 67–72. doi:10.1034/j.1600-0447.108.s418.14.x
- Bogic, M., Njoku, A., & Priebe, S. (2015). Long-term mental health of war-refugees: A systematic literature review. *BMC International Health and Human Rights, 15*(29), 1–41. doi:10.1186/s12914-015-0064-9
- Borsboom, D., & Cramer, A. O. (2013). Network analysis: An integrative approach to the structure of psychopathology. *Annual Review of Clinical Psychology, 9*, 91–121. doi:10.1146/annurev-clinpsy-050212-185608
- Bromet, E., Andrade, L., Hwang, I., Sampson, N., Alonso, J., de Girolamo, G., ... Kessler, R. (2011). Cross-national epidemiology of DSM-IV major depressive episode. *BMC Medicine, 9*, 1–16. Article 90. doi:10.1186/1741-7015-9-90
- Browne, M. W. (2001). An overview of analytic rotation in exploratory factor analysis. *Multivariate Behavioral Research, 36*, 110–150. Retrieved from [http://www.rc.usf.edu/~jorio/FA/Brown%20\(2001\)%20An%20Overview%20of%20Analytic%20Rotation%20in%20Exploratory%20Factor%20Analysis.pdf](http://www.rc.usf.edu/~jorio/FA/Brown%20(2001)%20An%20Overview%20of%20Analytic%20Rotation%20in%20Exploratory%20Factor%20Analysis.pdf)
- Byrne, B. M. (2008). Testing for multigroup equivalence of a measuring instrument: A walk through the process. *Psicothema, 20*(4), 872–882. Retrieved from <http://www.psicothema.com/pdf/3569.pdf>
- Carroll, J. K. (2004). *Murug, Waalli, and Gini*: Expression of distress in refugees from Somalia. *The Primary Care Companion to The Journal of Clinical Psychiatry, 6*, 119–125. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC474735/>

- Castaneda, A. E., Rask, S., Koponen, P., Mölsä, M., & Koskinen, S. (Eds.). (2012). *Migrant health and wellbeing. A study on persons of Russian, Somali and Kurdish origin in Finland. (in Finnish, with English abstract)* (Report 61). Helsinki: National Institute for Health and Welfare (THL). Retrieved from <http://urn.fi/URN:ISBN:978-952-245-739-4>
- Castaneda, A. E., Rask, S., Koponen, P., Suvisaari, J., Koskinen, S., Härkänen, T., ... Jasinskaja-Lahti, I. (2015). The association between discrimination and psychological and social well-being: A population-based study of Russian, Somali and Kurdish migrants in Finland. *Psychology and Developing Societies, 27*(2), 270–292. doi:10.1177/0971333615594054
- Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 14*(3), 464–504. doi:10.1080/10705510701301834
- Chia, A.-L., & Graves, R. (2016). Examining anxiety and depression comorbidity among Chinese and European Canadian University students. *Journal of Cross-Cultural Psychology, 47*(2), 215–233. doi:10.1177/0022022115618025
- Connor, J. J., Hunt, S., Finsaas, M., Ciesinski, A., Ahmed, A., & Robinson, B. E. (2016). Sexual health care, sexual behaviors and functioning, and female genital cutting: Perspectives from Somali women living in the United States. *The Journal of Sex Research, 53*(3), 346–359. doi:10.1080/00224499.2015.1008966
- Davidson, G. R., Murray, K. E., & Schweitzer, R. D. (2010). Review of Refugee Mental Health Assessment: Best Practices and Recommendations. *Journal of Pacific Rim Psychology, 4*(1), 72–85. doi:10.1375/prp.4.1.72
- De Waal, M. W. M., Arnold, I. A., Eekhof, J. A. H., & Van Hemert, A. M. (2004). Somatoform disorders in general practice: Prevalence, functional impairment and comorbidity with anxiety and depressive disorders. *The British Journal of Psychiatry, 184*, 470–476. doi:10.1192/bjp.184.6.470
- Derogatis, L. R., Lipman, R. S., & Covi, L. (1973). SCL-90: An outpatient psychiatric rating scale - preliminary report. *Psychopharmacology Bulletin, 9*(1), 13–28. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/4682398>
- Derogatis, L. R., Lipman, R. S., Rickels, K., Uhlenhuth, E. H., & Covi, L. (1974). The Hopkins Symptom Checklist (HSCL): A self-report symptom inventory. *Behavioral Science, 19*(1), 1–15. doi:10.1002/bs.3830190102
- Draguns, J. G., & Tanaka-Matsumi, J. (2003). Assessment of psychopathology across and within cultures: Issues and findings. *Behaviour Research and Therapy, 41*, 755–776. doi:10.1016/S0005-7967(02)00190-0
- Epskamp, S., Cramer, A.O.J., Waldorp, L. J., Schmittmann, V. D., & Borsboom, D. (2012). qgraph: Network Visualizations of Relationships in Psychometric Data. *Journal of Statistical Software, 48*(4), 1–18. Retrieved from <http://www.jstatsoft.org/v48/i04/>
- Fazel, M., Wheeler, J., & Danesh, J. (2005). Prevalence of serious mental disorder in 700 refugees resettled in Western countries: A systematic review. *The Lancet, 365*, 1309–1314. doi:10.1016/S0140-6736(05)61027-6
- Fischer, R., & Fontaine, J. R. J. (2011). Methods for investigating structural equivalence. In D. Matsumoto, & F. van de Vijver (Eds.), *Cross-Cultural research methods in psychology* (pp. 179–215). Cambridge: Cambridge University Press.
- Fong, T. C. T., Chan, J. S. M., Chan, C. L. W., Ho, R. T. H., Ziea, E. T. C., Wong, V. C. W., ... Ng, S. M. (2015). Psychometric properties of the Chalder Fatigue Scale revisited: An exploratory structural equation modeling approach. *Quality of Life Research, 24*(9), 2273–2278. doi:10.1007/s11136-015-0944-4
- Hammond, L., Awad, M., Dagane, A., Hansen, P., Horst, C., Menkhaus, K., & Obare, L. (2011). Cash and compassion: The role of the Somali diaspora in relief, development and peace-building [study report]. *Report of a study Commissioned by UNDP Somalia*. Retrieved from <http://www.hiiraan.com/2011/May/Cash-and-Compassion-Draft-for-comments.pdf>
- Hayton, J. C., Allen, D. G., & Scarpello, V. (2004). Factor retention decisions in exploratory factor analysis: A tutorial on parallel analysis. *Organizational Research Methods, 7*(2), 191–205. doi:10.1177/1094428104263675
- Hinton, D. E. (2012). Multicultural challenges in the delivery of anxiety treatment. *Depression and Anxiety, 29*, 1–3. doi:10.1002/da.20889
- Holi, M. (2003). *Assessment of psychiatric symptoms using the SCL-90*. Academic dissertation. Department of Psychiatry, Helsinki University, Finland. Retrieved from <https://helda.helsinki.fi/bitstream/handle/10138/22453/assessme.pdf?sequence=2>
- Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika, 32*, 179–185. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/14306381>
- IBM Corporation. (2013). *IBM SPSS statistics for windows, version 22.0*. Armonk, New York: IBM Corporation.
- Ichikawa, M., Nakahara, S., & Wakai, S. (2006). Cross-cultural use of the predetermined scale cutoff points in refugee mental health research. *Social Psychiatry and Psychiatric Epidemiology, 41*, 248–250. doi:10.1007/s00127-005-0016-2
- Juntunen, T., Weiste-Paakkanen, A., Tolonen, H., Koponen, P., Rask, S., Skogberg, N., ... Koskinen, S. (submitted). *Factors affecting migrants' willingness to participate in the Migrant Health and Wellbeing Survey (Maamu) in Finland. Quantitative and qualitative viewpoints*. Manuscript submitted for publication.
- Kessler, R. C., Chiu, W. T., Demler, O., Merikangas, K. R., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry, 62*(6), 617–627. doi:10.1001/archpsyc.62.6.617
- Krueger, R. F., & Markon, K. E. (2006). Understanding psychopathology. Melding behavior genetics, personality, and quantitative psychology to develop an empirically based model. *Current Directions in Psychological Science, 15*(3), 113–117. doi:10.1111/j.0963-7214.2006.00418.x

- Lamers, F., van Oppen, P., Comijs, H. C., Smit, J. H., Spinhoven, P., van Balkom, A. J., ... Pennix, B. W. (2011). Comorbidity patterns of anxiety and depressive disorders in a large cohort study: Comorbidity of depression and anxiety. *The Journal of Clinical Psychiatry*, 72(3), 341–348. doi:10.4088/JCP.10m06176blu
- Lee, B., Kaaya, S. F., Mbwambo, J. K., Smith-Fawzi, M. C., & Leshabari, M. T. (2008). Detecting depressive disorder with the Hopkins Symptom Checklist-25 in Tanzania. *International Journal of Social Psychiatry*, 54(1), 7–20. doi:10.1177/0020764006074995
- Markkula, N., Suvisaari, J., Saarni, S. I., Pirkola, S., Peña, S., Saarni, 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*, 1(173), 73–80. doi:10.1016/j.jad.2014.10.015
- Marsh, H. W., Lüdtke, O., Muthén, B., Asparouhov, T., Morin, A. J. S., & Trautwein, U. (2010). A new look at the Big Five factor structure through exploratory structural equation modelling. *Psychological Assessment*, 22, 471–491.
- Marsh, H. W., Morin, A. J., Parker, P. D., & Kaur, G. (2014). Exploratory structural equation modeling: an integration of the best features of exploratory and confirmatory factor analysis. *Annual Review of Clinical Psychology*, 10, 85–110. doi:10.1146/annurev-clinpsy-032813-153700
- Marsh, H. W., Muthén, B., Asparouhov, T., Lüdtke, O., Robitzsch, A., Morin, A. J. S., & Trautwein, U. (2009). Exploratory structural equation modeling, integrating CFA and EFA: Application to students' evaluations of university teaching. *Structural Equation Modeling: A Multidisciplinary Journal*, 16, 439–476. doi:10.1080/10705510903008220
- Meredith, W. (1993). Measurement invariance, factor analysis and factorial invariance. *Psychometrika*, 58(4), 525–543. doi:10.1007/BF02294825
- Mouanoutoua, V. L., & Brown, L. (1995). Hopkins Symptom Checklist-25, Hmong version: A screening instrument for psychological distress. *Journal of Personality Assessment*, 64(2), 376–383.
- Moussavi, S., Chatterji, S., Verdes, E., Tandon, A., Patel, V., & Ustun, B. (2007). Depression, chronic diseases, and decrements in health: Results from the World Health Surveys. *The Lancet*, 370, 851–858. doi:10.1016/S0140-6736(07)61415-9
- Muthén, L. K., & Muthén, B. O. (1998–2012). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.
- Official Statistic Finland. (n.d. a). *Ulkomailla syntyneet* [Population with foreign background]. Helsinki: Statistics Finland. [referred 11.4.2016]. Retrieved from <http://www.stat.fi/tup/maahanmuutto/index.html/maahanmuuttajat-vaestossa/ulkomailla-syntyneet>
- Official Statistics of Finland. (n.d.b). *Population structure* [e-publication]. ISSN=1797-5395. 2013. Appendix figure 2. The largest groups by native language 1993, 2003 and 2013. Helsinki: Statistics Finland [referred: 20.10.2015]. Retrieved from http://www.stat.fi/til/vaerak/2013/vaerak_2013_2014-03-21_kuv_002_en.html
- Poortinga, Y. (2015). Is “culture” a workable concept for (Cross-)Cultural Psychology? *Online Readings in Psychology and Culture*, 2(1), 1–21. doi:10.9707/2307-0919.1139
- Rask, S., Suvisaari, J., Koskinen, S., Koponen, P., Mölsä, M., Lehtisalo, R., ... Castaneda, A. E. (2016). The ethnic gap in mental health: A population-based study of Russian, Somali and Kurdish origin migrants in Finland. *Scandinavian Journal of Public Health*, 44, 281–290. doi:10.1177/1403494815619256
- R Core Team. (2015). *R: A language and environment for statistical computing*. Vienna: R Foundation for Statistical Computing. URL <https://www.R-project.org/>
- Revelle, W. (2015). *Psych: Procedures for personality and psychological research*. Evanston, Illinois: Northwestern University. Retrieved from <http://CRAN.R-project.org/package=psych version=1.5.8>
- Robins, J., Rotnitzky, A., & Zhao, L. (1994). Estimation of regression coefficients when some regressors are not always observed. *Journal of American Statistical Association*, 89, 846–866. Retrieved from <http://www.biostat.harvard.edu/robins/estim-regress-94.pdf>
- Rohlf, H. G., Knipscheer, J. W., & Kleber, R. J. (2014). Somatization in refugees: A review. *Social Psychiatry and Psychiatric Epidemiology*, 49, 1793–1804. doi:10.1007/s00127-014-0877-1
- Ryazantsev, S. V. (2013). Migration from Russia to Australia and formation of a Russian Community. *Canberra: ANU Centre for European Studies Briefing Paper Series*, 4(5), 1–32. Retrieved from <http://www.ryazantsev.org/book1-3.pdf>.
- Ryder, A. G., Yang, J., Zhu, X., Yao, S., Yi, J., Heine, S. J., & Bagby, M. R. (2008). The cultural shaping of depression: Somatic symptoms in China, psychological symptoms in North America? *Journal of Abnormal Psychology*, 117, 300–313. doi:10.1037/0021-843X.117.2.300
- SAS Institute. (2011). *SAS 9.3 formats and informats: Reference*. Cary, NC: SAS Institute.
- Sijtsma, K. (2009). On the use, the misuse, and the very limited usefulness of Cronbach's alpha. *Psychometrika*, 74(1), 107–120. doi:10.1007/s11336-008-9101-0
- Silberman, E. F., & Weiss, K. J. (2016). Treatment-resistant depression or misdiagnosed anxiety disorder? *The Journal of Nervous and Mental Disease*, 204(1), 67. doi:10.1097/NMD.0000000000000409
- Somalis in Helsinki. (2013). New York: Open Society Foundations. Retrieved from <http://www.opensocietyfoundations.org/sites/default/files/somalis-helsinki-20131121.pdf>

- Syed, H. R., Zachrisson, H. D., Dalgard, O. S., Dalen, I., & Ahlberg, N. (2008). Concordance between Hopkins Symptom Checklist (HSCL-10) and Pakistan Anxiety and Depression Questionnaire (PADQ), in a rural self-motivated population in Pakistan. *BMC Psychiatry*, 8(59), 1–12. doi:10.1186/1471-244X-8-59
- Ten Berge, J. (1986). Some relationships between descriptive comparisons of components from different studies. *Multivariate Behavioral Research*, 21, 29–40.
- van de Vijver, F. J. R., & Leung, K. (2011). Equivalence and bias: A review of concepts, models, and data analytic procedures. In D. Matsumoto, & F. J. R. van de Vijver (Eds.), *Cross-cultural research methods in psychology* (pp. 17–45). Cambridge: Cambridge University Press.
- van de Vijver, F. J. R. (2011). Bias and real differences in cross-cultural differences: neither friends nor foes. In F. J. R. van de Vijver, A. Chasiotis, & S. M. Breugelmans (Eds.), *Fundamental questions in cross-cultural psychology* (pp. 235–258). Cambridge: Cambridge University Press.
- Ventevogel, P., Jordans, M., Reis, R., & de Jong, J. (2013). Madness or sadness? Local concepts of mental illness in four conflict-affected African communities. *Conflict and Health*, 7(3), 1–16. doi:10.1186/1752-1505-7-3
- World Health Organization. (2010). A Situation Analysis of Mental Health in Somalia [e-document]. Retrieved from http://reliefweb.int/sites/reliefweb.int/files/resources/111AEF992F74A43FC125782B00484E8D-Full_Report.pdf