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Mental Health Challenges of Immigrants in Norway

A Literature Review 2009-2017



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Contents

Summary	2
Abbreviations	3
Definitions	4
Authors contributions	5
Acknowledgements	5
Introduction	7
Part 1. Background	7
1.1. Immigrant populations in Norway	7
1.2. Migration and Health	7
1.3. Migration and Mental Health.....	8
1.4. Mental health challenges of immigrants in Norway.....	9
1.5. Objectives.....	10
Part 2. Methodology	11
Stage 1: Identifying the research question	11
Stage 2: Identifying the relevant studies	11
Stage 3: Selecting studies.....	12
Stage 4: Charting the data.....	14
Stage 5: Collating/summarizing and reporting the data.....	14
Part 3. Results	15
3.1. The extent and nature of empirical studies.....	15
3.1.1. Peer-reviewed publications.....	15
3.1.2. Sample size, sex, age, migrant status in peer-reviewed articles.....	17
3.1.3. Immigrants' country of origin in peer-reviewed articles.....	18
3.1.4. Place of recruitment in peer-reviewed articles.....	18
3.1.5. Research design in peer-reviewed articles.....	18
3.1.6. Instruments used in peer-reviewed articles.....	18
3.1.7. General characteristics of grey literature.....	21
3.2. Thematic presentation of the findings in peer-reviewed studies and grey literature (N=79)	22
3.2.1. Children/Adolescents	22
3.2.2. Adults	25
3.2.3. Intervention studies.....	32
3.2.4. Explanatory models	32
3.2.5. Access to and utilization of health services.....	33
3.2.6. Intercultural Competency among healthcare personnel	35
Part 4. Discussion—challenges and gaps in research and knowledge	35
4.1. Methodological limitations of the included studies	36
4.2. Knowledge gaps and recommendations for future research	39
4.3. Limitations of this review	40
Part 5. Conclusions and implications	41
Part 6. References	42
Part 7. Tables	51

Summary

In Norway and worldwide, the most frequent mental health problems—anxiety, depression and alcohol dependency—are perceived as some of the main public health challenges. In Norway for the time being, the health authorities emphasize the promotion of mental health as an important part of public health efforts. As migration is established as one of the determinants of health and previous research indicates higher rates of mental distress among immigrants, it is highly important to have updated research reviews on mental health challenges among immigrants.

Therefore, the aim of this review is to map the empirical studies in Norway on mental health and related topics among immigrant groups, to summarize main findings, and to discuss the existing challenges and gaps in research and knowledge. To this end, a scoping review of studies published between January 2009 and June 2017 in Norway was conducted. The databases PubMed, MEDLINE, Psych INFO, EMBASE and Oria were searched. The data was charted and sorted according to key themes of interest. Results are reported as descriptive, quantitative and thematic summary.

Sixty-five peer reviewed articles and 14 studies within grey literature were identified, totaling 79 published works; of these, the majority had adult samples. The studies included in this search cover a broad range of themes and are highly diverse in terms of the backgrounds of participants, sample size, outcome measures, study designs, research methods, recruitment methods and place of recruitment. This gives a wide spectrum of findings and insights, but it also complicates the comparison and discussion of research methods, samples and the main findings.

The review indicates that immigrants to Norway are a very diverse group with differing—but often increased—risks for self-reported mental distress. However, knowledge about prevalence rates of mental disorders generally in immigrant groups, for all ages, is still lacking. In line with earlier studies, the review indicates an increased risk for mental distress and disorders with UAMA/URM/UR children/adolescents and in clinical samples of adult refugees, thus confirming that these groups stand out as especially vulnerable for mental health challenges after resettlement in Norway, also. However, the findings also underscore the importance of current life conditions on mental health, and the significance of health promoting interventions over previous traumatic life events. Lower utilization rates of mental health services—both primary and secondary—by several immigrant groups compared to the majority population, are reported in several studies.

There are several methodological challenges in the research related to, for example, sample sizes, reliability and validity of outcome measures, and the lumping together of different country backgrounds. Future research should focus more on understanding the picture behind the survey data by combining quantitative and qualitative methods; requires more attention on positive mental health, and health promotion, and should include user perspectives in the research process more regularly.

Abbreviations

DSM-IV/ DSM-V: Diagnostic and Statistical Manual of Mental Disorders versions IV/V
EPC: Emergency primary care
EU: European Union
FHI: The Norwegian Institute of Public Health
GAD: Generalized Anxiety Disorder
GP-P/EPC-P consultation: Consultations involving psychological diagnosis from P01-P99 based on the International Classification of Primary Care (ICPC-2).
GP: General practitioner
HD: Norwegian Directorate of Health
HELFO: The Norwegian Health Economics Administration database
HUBRO: The Oslo Health study (2000–01)
ICD: International Classification of Disorders
MDD: Major Depressive Disorder
NET: Narrative Exposure Therapy
NIA: National Insurance Administration
NKVTS: The Norwegian Centre for Violence and Traumatic Stress Studies
NorPD: Norwegian Prescription Database
NPR: The National Population Register
OIH: Oslo Immigrant Health study (February–November 2002)
OUS: Oslo University Hospital
PHC: Primary Health Care services
PMTO: Parent Management Training-Oregon Model
PTSD: Post Traumatic Stress Disorder
RCT: Randomized Control Trial
RR: Response Rate
RVTS: Regional Resource Center on Violence, Traumatic stress and Suicide prevention
SHC: Secondary Health Care services
SSB: Statistics Norway
TAU: Treatment as Usual
UAMA: Unaccompanied minor asylum seekers
UASC: Unaccompanied asylum-seeking children
UM: Unaccompanied minors
UngKul/YCC: Youth, Culture and Competence study
UR: Unaccompanied refugees
URC: Unaccompanied refugee children
URM: Unaccompanied refugee minors
WHO: World Health Organization

Definitions

Immigrants/migrants/minorities: These terms refer to the official definition of immigrants as used by SSB, which bases its definition on a person's country background or the country background of a person's parents. These categories include persons who are born abroad of two foreign-born parents and four foreign-born grandparents and are registered as residents in Norway (so called first-generation immigrants/migrants). The category also includes persons who are born in Norway with two foreign-born parents and four foreign-born grandparents (earlier called second-generation immigrants). The data from SSB only covers immigrants with a residence permit in Norway, and not asylum seekers. In this report, these terms are used interchangeably and cover all types of immigrants, independent of their reasons for migrating to Norway.

Western/non-western immigrants/High/Low/Middle income countries: These and similar categories are used in some studies. SSB removed the use of western and non-western categories at the end of 2000s because dividing immigrants into a world of two parts is no longer true to reality. SSB now uses two country groups: Immigrants with a country background from the EU28/European Economic Area (EEA) countries, USA, Canada, Australia and New Zealand; and immigrants with a country background from Asia (including Turkey), Africa, Latin America, Oceania except Australia and New Zealand. They also include other European countries that are not members of EU28/EEA in this group. In research, the first group is often referred as high-income countries, whereas the second is referred to as low (and middle) income countries. For practical reasons, we have used the categories they used when describing their findings.

Mental/psychological distress vs mental illness/disorders/disturbances: There is some confusion about the concepts/categories used in the field and, therefore, a distinction between *mental/psychological distress* and *mental illness/disorders/disturbances* should be made. *Mental/psychological distress* refers to mental health problems that can be an indication or a part of mental disorders, but not always. *Mental illness/disorders/disturbances* usually refer to conditions based on an evaluation of symptoms' intensity, duration and the extent to which they influence the person's daily functioning. Clinically, in order to call a condition a mental illness/disorder/disturbance, the symptoms should meet diagnostic criteria in psychiatric diagnostic systems such as the DSM or ICD. There are gliding transitions between these, and differentiation requires a clinician's evaluation through clinical interviews. Consequently, in this text we have used the terms *mental/psychological distress* to describe mental health problems when they were detected only by self-report tools, and *mental illness/disorders/disturbances* when the assessments were made by clinicians using diagnostic tools/interviews.

Authors contributions

All literature research was conducted by one researcher (EK) with the assistance of qualified librarians at the Medical library at Oslo University Hospital, Ullevål. In addition, EK compiled all tables, figures and reference lists and wrote the review. KHH contributed to the final version of the text.

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Introduction

This scoping review is initiated and conducted by NAKMI in order to update the status of knowledge on mental health challenges for immigrants in Norway. The structure of the report is as follows:

In Part 1, some relevant background information regarding immigrant populations and mental health will be provided.

In Part 2, aims, methods and procedures will be described.

In Part 3, initial mapping containing the extent, nature and distribution of studies, and a review of the main findings, will be presented.

In Part 4, after a brief summary and discussion of main findings, challenges and gaps in the research and knowledge will be presented.

Part 1. Background

1.1. Immigrant populations in Norway

As a consequence of global development, Norway has become increasingly multicultural over recent decades. At the beginning of 2017 there were nearly 884,000 immigrants from over 220 countries in Norway, accounting for 16.8 % of the total population. Of these, around 159,000 were Norwegian-born to immigrant parents. The most common reasons for immigration to Norway are family reunification, labor and forced migration from war and persecution. Immigrants from Poland compose the largest immigrant group in Norway, followed by immigrants from Lithuania, Sweden and Somalia respectively. The proportion of persons with refugee backgrounds composes around 3.5% (179,500) of the whole population and 28.4% of the immigrant populations, with Somalis, Iraqis and Iranians being the largest groups (1). In 2016, the highest growth in refugees to Norway was from Syria. Oslo, the capital of Norway, has the largest population of immigrants and Norwegian-born children of immigrant parents, accounting for around 33% of Oslo's population (1).

Immigrants in Norway are heterogeneous in many respects. They vary in reasons for migration, cultural, ethnic and socio-economic background, education, as well as length of stay in Norway. Some immigrant groups, especially from Pakistan, Turkey and Morocco, have been living in Norway since the early 1970s. Immigrant groups from EU countries, like Poland and Lithuania, have lived in Norway for less than 10 years. Some of the largest refugee groups, coming from Eritrea, Somalia, Iraq, Afghanistan and now Syria, have been in Norway for a shorter period of time (1).

1.2. Migration and Health

Migrants are at a higher risk for health issues for a number of reasons (2). Refugees may have been exposed to several health risks before, during and after migration. In the receiving country, immigrants may have difficulties navigating the health system. Various factors can influence their attitudes towards and utilization of health services. These factors can be language barriers, health literacy, help seeking behavior, notions about when and where it is appropriate to seek help and what kind of help is most appropriate. Other factors can be expectations based on earlier experiences from their country of origin as well as lack of culturally sensitive health services and negative experiences with these services in the resettlement country. Prejudices and negative

attitudes in society and among healthcare providers can add to their vulnerability (3). All of the factors mentioned may undermine access to, trust and utilization of, as well as the quality of the health care services that immigrants receive.

Studies indicate that the health profiles of migrants change in some respects when they move from their country of origin to a new country. Their health might improve after migration due to better health services in the host country (4). In addition, some newly arrived immigrants are healthier than the native-born population. The term “*healthy migrant effect*” is used to describe these differences in favor of immigrants, but studies also indicate that immigrants’ health declines as time goes on (5, 6). Several factors can explain the “*healthy migrant effect*.” Migration is a demanding process and those who succeed in reaching their destinations will generally be the healthiest. Reasons for declining health following migration might also include adjustments to the host countries’ unhealthy dietary habits and lifestyle, while losing one’s own healthier dietary customs. Another reason may be psychosocial stress, related to resettlement in a new environment and perceived discrimination (7). Some also suggest an “*exhausted migrant effect*,” referring to declining health in immigrants due to hard work and poor living conditions (8).

These observations bring us to the social and economic inequalities that have been shown to play a large role in the health profile of populations, both internationally and in Norway (9-11). Social inequalities in health apply to vulnerable groups of immigrants from low-income countries, whose scores are correspondingly poor, according to the Living Conditions Surveys in Norway (12). Immigrants differ considerably from the native population regarding certain risk factors and diseases. For example, higher prevalence of specific problems, such as type II diabetes and vitamin D deficiency among immigrant groups, are indicated (13). On the other hand, the burden of mental health problems is generally underestimated because physical conditions and mental distress/illness are treated as separate domains, even though comorbidity of physical and mental health problems is common and, often, one constitutes a risk for the other (14, 15).

1.3. Migration and Mental Health

The World Health Organization (WHO) defines mental health as a “state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to contribute to her or his community” (16). This definition underlines positive mental health and defines mental healthiness as not solely the absence of disease or ailments, but also as coping and functioning in a social context. Mental health concepts such as “well-being” and “quality of life” are suggested as an alternative (or supplement) to deficit and disorder focus in mental health area. However, the focus in studies has mostly been on negative feelings, challenges, ailments and disorders (17).

Studies have indicated that the prevalence of psychological distress and disorders among immigrants may vary depending on reasons for migration and on post-migration socioeconomic conditions. For example, depression, post-traumatic stress disorder (PTSD) and anxiety disorders have been found to be more prevalent among refugees than labor migrants. This difference is explained by several factors, including degree of exposure to pre-migration traumatic experiences, and socioeconomic factors in the resettlement country (18). A review by Lindert et al. (19), found a prevalence rate of 20% for depression and 21% for anxiety among labor migrants, and 44% and 40% respectively among refugees. In this review, they found lower symptom prevalence of these disorders among labor immigrants if the country of immigration had higher Gross National Product (GNP). The prevalence rates for PTSD in refugee populations vary to a great degree (20, 21). For example, a review by

Johnson and Thompson (22) found that these rates vary from 12 % to 91% depending on several factors, including sampling and assessment methods used, location of the studies, e.g. on the site where trauma has occurred, or other places with displaced populations, and whether PTSD levels are assessed currently or over a certain time period. The prevalence of PTSD among refugee children was found to be around 11% (23, 24).

Reviews of the prevalence of mental distress/disorders among other migrant groups in Europe indicate mostly increased risks but not for all groups (25-27). There are several studies indicating increased risk for psychosis among groups other than native-borns, especially with dark-skinned immigrants, and the second-generation immigrants (28-30). A recent review article from Sweden seems to support these findings as it shows increased risks of common mental disorders such as depression and psychotic disorders in immigrants compared to native Swedes (31). Some distinctive challenges concerning mental health for immigrants are heightened, including the language barrier, different beliefs and explanatory models of mental illness, and a reluctance to seek help because of stigma and concerns about confidentiality (32). However, the problems with comparing studies within and across populations and countries, due to methodological heterogeneity and heterogeneity existing within and between groups of immigrants, have been pointed out by several researchers.

Higher levels of psychological distress and mental disorders would suggest a more frequent utilization of mental health services. However, studies from countries like the UK, USA, Australia, and even Canada with universal health insurance, show that immigrants have a lower utilization of mental health services (33-40). In some studies higher hospital admission rates, more frequent use of compulsory admissions, greater non-adherence to treatment, and less satisfaction with services among minority patients have been indicated (41).

1.4. Mental health challenges of immigrants in Norway

In Norway, immigrants' vulnerability to psychological distress and mental disorders has been indicated in several studies. For example, non-western immigrants, notably those from low-income countries, are found to be especially prone to experiencing psychological distress (42, 43). Similarly, in several Living Condition Surveys among immigrants conducted by Statistics Norway (SSB), psychological distress was reported to be higher in immigrants compared to the mainstream population (12, 44). For example, in the latest Living Condition Survey, using Hopkins Symptom Checklist-7 (HSCL-7) it was found that whereas only 6 % of participants in the general population had mental health problems, the result was 12 % in immigrant groups (12 different immigrant groups, ages 16–74, Response Rate (RR)=54,4 %). However, considerable differences by country of birth were found. For example, the proportion with mental distress was found to be 22% among Iranians, 21% among Iraqis and 19% among Turks, compared to 6% among Somalis and 7% among Eritreans. However, compared to the previous survey by SSB from 2005–06, the proportion reporting psychological problems, both in the general population and in immigrants, had decreased considerably (12). It is argued that these differences could be a result of, for example, the inclusion of two new immigrant groups—Polish and Eritrean—both reporting low psychological distress (44).

Previous Norwegian studies of mental health among immigrants with a refugee background—adult refugees, asylum seekers and unaccompanied minors—have consistently reported high levels of psychological distress and mental health problems (45). For example, in an earlier study by Hauff and Vaglum (46), Vietnamese refugees were interviewed about their mental health upon their arrival in Norway, and again three years later. After three years, no decline in psychological distress was

registered: one in four still suffered from a mental disorder, and the prevalence rate for depression was still the same (17.7%). A similar longitudinal study was conducted among Bosnian refugees (47). Likewise, it was found that depression and anxiety levels were unchanged after three years in Norway. In this study, an increase in PTSD symptoms was even observed.

In addition, evidence for differences in the utilization of mental health services by immigrants in Norway has been uncovered. In one study, admission rates for acute psychiatric care were found to be higher for asylum seekers as compared to Norwegians, but similar for non-asylum-seeking immigrants compared to Norwegians (48). Another study, conducted at a mental hospital in Oslo, found that patients with immigrant background had more frequent compulsory admissions but otherwise had similar hospitalization rates as the non-immigrant population (49). At an outpatient psychiatric clinic in Oslo, it was found that non-western immigrants were more often referred than Norwegian-born individuals (50). Based on self-reported mental health status in non-western immigrants, the researchers commented that one could expect an even higher utilization of the outpatient psychiatric services.

Having summarized some of evidence base for mental health status of immigrants until now, we will highlight the fact that there are few reviews in Norway with a focus on mental health challenges in immigrant populations. In status reports on mental health, produced by the Norwegian Institute of Public Health (FHI), immigrants are regularly mentioned only in relation to underrepresentation (51, 52). A few publications focus specifically on mental health problems and living conditions among refugees and asylum-seeking unaccompanied minors (53, 54). One report from 2008 deals with psychological adjustment and the mental health of immigrant children (55). Beyond this, as far as we know, there is only one review on mental health challenges. The review, published by NAKMI in 2010, is on the general public health challenges of immigrants in Norway. It includes a section about mental health, reviewing research articles published in Norway between the 1990s and 2009. The review concluded that there was a higher prevalence of mental health problems among immigrants, particularly in immigrant populations from low- and middle-income countries as compared to Norwegians (56, 57). Poor socioeconomic conditions, multiple negative life events, experiences of discrimination, and traumatic pre-migration experiences, often in combination with unemployment, poorer residential conditions, and lack of social networks, were some of the risk factors identified in the studies. The review highlighted methodological challenges in the research related to, for example, ethnic lumping, differing conceptions of mental health and a lack of cross-culturally validated questionnaires.

1.5. Objectives

With this background, it seems timely to update knowledge about the mental health status and related issues (interventions, explanatory models, utilization of mental health services and the competency of health personnel) among immigrants in Norway. The objective of this review is therefore to search for published research literature in order to:

- 1) map the extent and nature of empirical studies about mental health and related issues among immigrants in Norway, January 2009–June 2017;
- 2) give a descriptive, quantitative and thematic summary of included studies;
- 3) discuss, briefly, existing challenges and gaps in research and knowledge.

Part 2. Methodology

To accomplish these objectives, a scoping review of empirical studies, published between January 2009 and June 2017, was conducted. This is a review technique increasingly used in recent years. It maps existing relevant literature to chart the data in a systematic multi-staged fashion and describe findings briefly (58-60). In contrast to systematic reviews, which focus on a narrowed topic of interest and certain study designs, scoping reviews focus on broader topics investigated by different designs and methodologies. Quality assessment of studies is not a primary concern for scoping reviews as the focus is on mapping the extent, range and nature as well as the main findings of research activity. As recommended by Arksey and O'Malley (61), for this type of review we have proceeded stepwise through the following stages:

- 1) Identifying the research questions;
- 2) Identifying the relevant studies;
- 3) Selecting studies by developing inclusion and exclusion criteria;
- 4) Charting the data, a process including data extraction and sorting of the data according to key issues and themes;
- 5) Summarizing, collating and reporting the results to produce both a descriptive quantitative and thematic presentation.

The whole process, before the final stage, has been iterative in nature, and reflexivity and flexibility in procedures is attempted, as recommended (62).

Stage 1: Identifying the research question

The research questions are given through the objectives.

Stage 2: Identifying the relevant studies

We aimed to identify all published research conducted in Norway 2009-17 on various aspects of mental health issues where the participants' immigrant background is mentioned as a variable. With this aim, as recommended for this type of review, a broad search strategy was developed and a search for relevant electronic databases was conducted. We searched for published studies in four electronic databases (PubMed, MEDLINE, Psych INFO, EMBASE) in the languages English, Norwegian or Swedish/Danish.

The following key words were used to search the database PubMed: "Norway" AND "Delivery of Health Care" OR "psychosocial distress" OR "mental health" OR "mental illness" OR "mental ill" OR "psychological disturbances" OR "Sociological Factors" OR "Psychiatry and Psychology Category" OR "Health" AND (immigrants OR immigration OR immigrant OR minority OR minorities) OR "asylum seekers" OR refugee OR refugees OR ethnic AND "Minority Groups" OR "Transients and Migrants" OR "Ethnic Groups" OR "Refugees" OR "Emigration and Immigration" OR "Emigrants and Immigrants" OR "Minority Health".

Equivalent keywords were created for MEDLINE, Psych INFO and EMBASE. Using a similar search strategy, we also searched the database Oria for grey literature, including reports based on empirical studies, Master and PhD theses.

In addition to those databases, websites of key organizations (NKVTS, FHI, RVTS, NAKMI) were searched for published material in formats other than peer-reviewed articles. Finally, the search engines Google (in Norwegian) and Google Scholar were searched for relevant, published research in addition to reading reference lists of identified studies.

For an update, an additional search in databases PubMed, Psych INFO, EMBASE was conducted June 2017. For this update, we broadened the search strategy to include the topics resilience and quality of life. The search strategy for PubMed was, thus: *"Norway" AND "Delivery of Health Care" OR "psychosocial distress" OR "mental health" OR "mental illness" OR "mental ill" OR "psychological disturbances" OR "Sociological Factors" OR "Psychiatry and Psychology Category" OR "Health" OR "Resilience, Psychological" OR "Quality of Life" AND (immigrants OR immigration OR immigrant OR minority OR minorities) OR "asylum seekers" OR refugee OR refugees OR ethnic AND "Minority Groups" OR "Transients and Migrants" OR "Ethnic Groups" OR "Refugees" OR "Emigration and Immigration" OR "Emigrants and Immigrants" OR "Minority Health"*.

Similar strategies were developed and applied to the databases Psych INFO and EMBASE.

Stage 3: Selecting studies

The search for studies on this topic was challenging as the range of terms describing mental health problems and topics related to mental distress/problems was very broad. We wanted to have a search strategy that maximized the number of relevant studies, but at the same time minimized the number of irrelevant studies. Inclusion and exclusion criteria were developed in the process and revised several times based on whether they fit the research aim. The target group for this review was immigrants who were born abroad to two foreign-born parents and registered as residents in Norway. The target group also included their descendants, persons who are born in Norway to two foreign-born parents and four foreign-born grandparents. Generally, the term migrants/immigrants covered all types of immigrants independently of their reasons for migrating to Norway and included labor migrants, refugees, asylum seekers, and unaccompanied minor asylum seekers (UAMA)—also called unaccompanied asylum-seeking children (UASC), unaccompanied refugee minors (URM), unaccompanied refugee children (URC), and unaccompanied refugees (UR). Covering the main categories used in research, for practical reasons, the following three acronyms, UAMA/URM/UR, will be used in the text:

Thus, the inclusion criteria were:

- i) Peer-reviewed, published empirical research articles (primary and secondary research) and grey literature.
- ii) Publication dates between 01.01.2009 and 30.06.2017.
- iii) Written in Norwegian, other Scandinavian languages or in English.

- iv)** Included one or several immigrant group(s) of both sexes and all ages living in Norway (including labor migrants, UAMA/URM/UR, asylum seekers, refugees, and undocumented migrants).
- v)** Publications that fit best with the research questions, addressing mental health issues, both positive and negative mental health and related topics (e.g. wellbeing, quality of life, coping/resilience, prevalence of mental distress/disorders, risk factors, treatment, utilization of mental health services).
- vi)** Formal ethical permissions have been obtained and methods used are described.

For grey literature, the same inclusion criteria were used.

Exclusion criteria:

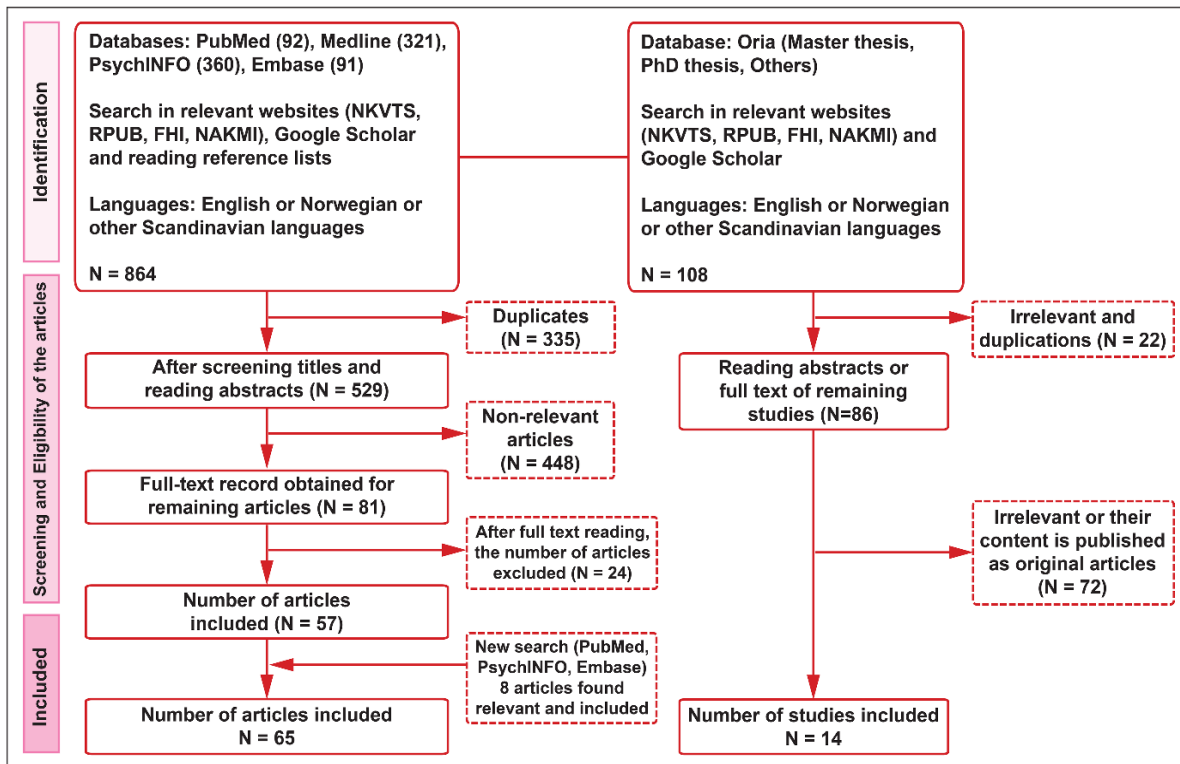
Published articles not based on empirical studies were excluded: review articles, duplicates, book chapters and conference abstracts. Studies on national minorities (e.g. Sami people) were excluded as well as studies of temporary migrants, such as international students, being less relevant. Research articles published in 2009 that were included in the first NAKMI review, conducted by Abebe (2010), were excluded. Reports and theses were excluded if their content had been published as peer-reviewed articles and captured through other databases searched. Student theses with access restrictions were excluded.

The first search in the databases PubMed, MEDLINE, Psych INFO, EMBASE, conducted in mid-August 2016, gave a hit of 864 publications in total for published and peer reviewed articles. After duplicates were removed, the titles and abstracts of the remaining studies (N=529) were examined. Articles that did not fill the inclusion criteria were removed, leaving in total 81 potentially eligible articles for which full texts were obtained. After reading the full texts, 57 were included in the review. The updated search for peer-reviewed articles in June 2017 in the PubMed, Psych INFO and EMBASE databases, including “resilience” and “quality of life”, gave a hit of 13 new publications of which 8 were considered eligible and included in the review. Thus, in total, 65 peer reviewed articles published between 1.1.2009 and 30.06.2017 were included in this review.

A similar procedure was followed for selection of grey literature. The search in Oria in mid-August 2016 and search in websites (NKVTS, RBUP, FHI, NAKMI), Google in Norwegian and Google Scholar gave a hit of 108 published works (master thesis, PhD dissertations, reports, articles). After excluding duplicates (N=22), we read abstracts or the full text records of the remaining studies (N=86). In total, 14 grey literature studies were found eligible for this review and included. Thus, in total 79 studies were included in this review.

Endnote version X7.5 was used to manage hit records and generate lists of references. See Figure 1, illustrating the search screening process for both the articles and the grey literature.

Figure 1. Flowchart of search screening process for peer-reviewed articles and grey literature



Stage 4: Charting the data

Following the recommendations for scoping reviews (61), the data were charted and sorted according to key themes of interest. To this end, a charting format was developed and used for quality assurance procedures for data extraction. The checklist for data extraction (several categories and sub-categories) was revised several times during the process as we became familiar with the selected literature. A simplified charting format was used to collect data, which is relevant for this kind of review. Characteristics of selected studies were summarized in a table covering basic information under the headlines: author(s)/year, study sample, outcome measure(s), research design, data collection instrument(s) used and objectives. Table 2.1 and Table 2.2 in the appendix section display the charted data.

Stage 5: Collating/summarizing and reporting the data

As a final step, all publications are summarized and reported both as brief descriptive quantitative and as thematic summary.

Part 3. Results

We have attempted to structure the description of the results in a manner that can meet the objectives of this review. With this in mind, the extent and nature of empirical studies on mental health and related issues among immigrants in Norway, and their main findings, are summarized here.

3.1. The extent and nature of empirical studies

Presented in this section are the peer-reviewed articles, both in Table 3.1 and 3.2 and in text, and then characteristics of the grey literature in Table 3.3 and in the text.

3.1.1. Peer-reviewed publications

The mapping shows that studies in this search cover a broad range of topics and are quite diverse concerning general characteristics such as samples, outcome measures, study designs and research methods, as seen in Table 3.1.

Table 3.1. General characteristics of peer reviewed articles (N=65)

Sample size of immigrants	N	Studies
Less than 101	22	Berg et al. 2011, Bjørge & Jensen 2015, Bjørknes & Manger 2013, Fuglestad & Milde 2013, Guribye 2011, Guribye et al. 2011, Johnson & Asbjørnsen 2009, Næss & Moen 2015, Iversen et al. 2010; 2011, Jensen et al. 2014; 2015, Opaas & Hartmann 2013; 2015; 2016, Stenmark et al. 2013; 2014, Theodorescu et al. 2012a; 2012b, Tingvold et al. 2012a; 2012b; 2015.
101-500	15	Alpers & Hansen 2014, Berg et al.2010; 2014; 2015; 2016, Dalhaug et al. 2011, Fandrem et al. 2012, Hjellset et al. 2011, Iversen et al. 2011, Jacobsen et al. 2014, Markova & Sandal 2016, Seglem et al. 2011, Stige & Sveaas 2010, Vaage et al. 2011, Vervliet et al. 2015.
501-1000	12	Alves et al. 2011, Bratt 2015, Erdal et al. 2011, Furre et al. 2014, Keles et al. 2016a; 2016b, Knutzen et al. 2011, Oppedal 2011, Oppedal & Idsøe 2012; 2015, Shakeel et al. 2015, Varvin & Aasland 2009.
Over 1000	16	Abebe et al. 2015, Amundsen et al. 2012, Berg 2009, Bjereld et al. 2014, Claussen et al. 2009, Diaz et al. 2015, Fadnes et al. 2016, Lien et al. 2010, Noam et al. 2014, Puzo et al. 2017, Saheer et al. 2013, Seglem et al. 2014, Straiton et al. 2014; 2016a; 2016b, Vaage et al. 2010.
Sex		
Mixed sex	61	Abebe et al. 2015, Alpers & Hansen 2014, Alves et al. 2011, Amundsen et al. 2012, Berg et al. 2010; 2011; 2014; 2015; 2016, Berg 2009, Bjereld et al. 2014, Bjørge & Jensen 2015, Bratt 2015, Claussen et al. 2009, Dalhaug et al. 2011, Diaz et al. 2015, Erdal et al. 2011, Fadnes et al. 2016, Fandrem et al. 2012, Fuglestad & Milde 2013, Furre et al. 2014, Guribye et al.2011,Guribye 2011, Iversen et al. 2010; 2011;2014,Jacobsen et al. 2014, Jensen et al. 2014; 2015, Johnson & Asbjørnsen 2009, Keles et al. 2016a; 2016b, Knutzen et al. 2011, Lien et al. 2010, Markova & Sandal 2016, Noam et al. 2014, Næss & Moen 2015, Opaas & Hartmann 2013; 2015; 2016, Oppedal 2011, Oppedal & Idsoe 2012; 2015, Puzo et al. 2017, Saheer et al. 2013, Seglem et al. 2011; 2014, Straiton et al. 2014; 2016b, Stenmark et al. 2013; 2014, Stige & Sveaas 2010, Theodorescu et al. 2012a; 2012b,

		Tingvold et al.2012a; 2012b; 2015, Vaage et al. 2010; 2011, Varvin & Aasland 2009, Vervliet et al 2015.
Females	4	Bjørknes & Manger 2013, Hjellseth et al. 2011, Straiton et al. 2015a, Shakeel et al. 2015.
Age		
Children /adolescents	19	Abebe et al. 2015, Alves et al. 2011, Bjørgo & Jensen 2015, Bratt 2015, Dalhaug et al. 2011, Fadnes et al. 2016, Fandrem et al. 2012, Furre et al. 2014, Jacobsen et al. 2014, Jensen et al. 2014; 2015, Keles et al. 2016a; 2016b, Noam et al. 2014, Oppedal 2011, Oppedal & Idsøe 2012; 2015, Seglem et al. 2011, Vervliet et al 2015.
Adults	41	Alpers & Hansen 2014, Berg et al. 2010; 2011; 2014; 2015; 2016, Berg 2009, Bjereld et al. 2014, Bjørknes & Manger 2013, Claussen et al. 2009, Diaz et al. 2015, Erdal et al. 2011, Fuglestad & Milde 2013, Guribye 2011, Guribye et al. 2011, Hjellset et al. 2011, Iversen et al. 2010; 2011; 2014, Johnson & Asbjørnsen 2009, Knutzen et al. 2011, Lien et al. 2010, Naess & Moen 2015, Opaas & Hartmann 2013, Opaas & Varvin 2015, Opaas et al.2016, Saheer et al. 2013, Seglem et al. 2014, Shakeel et al. 2015, Stenmark et al. 2013; 2014, Stige & Sveaas 2010, Straiton et al. 2014; 2016a; 2016b, Theodorescu et al. 2012a; 2012b, Tingvold et al. 2015, Vaage et al. 2010, Varvin & Aasland 2009, Vervliet et al 2015.
Both adolesc. and adults	5	Amundsen et al. 2012, Tingvold et al. 2012a; 2012b, Puzo et al. 2017, Vaage et al. 2011.
Migrant status* (N=63 studies)		
Labor migrants	2	Hjellseth et al. 2011, Næss & Moen 2015.
Refugees (adults)	18	Guribye 2011, Guribye et al. 2011, Iversen et al. 2014, Johnson & Asbjørnsen 2009, Markova & Sandal 2016, Opaas & Hartmann 2013, Oppaas & Varvin 2015, Opaas et al. 2016, Stenmark et al 2013; 2014, Stige & Sveaas 2010, Theodorescu et al. 2012a; 2012b, Tingvold et al.2012a; 2012b; 2015, Vaage et al. 2010; 2011.
UAMA, URM and UR	11	Bjørgo & Jensen 2015, Oppedal & Idsoe 2012; 2015, Keles et al. 2016a; 2016b, Seglem et al. 2011; 2014, Jacobsen et al. 2014, Jensen et al. 2014; 2015, Vervliet et al. 2014.
Mixed	32	Abebe et al. 2015, Alves et al. 2011, Amundsen et al. 2012, Berg et al.2010; 2011; 2014; 2015; 2016, Berg 2009, Bjereld et al. 2014, Bjørknes & Manger 2013, Bratt 2015, Claussen et a. 2009, Dallhaug et al. 2011, Diaz et al. 2015, Erdal et al. 2011, Fadnes et al. 2016, Fandrem et al. 2012, Fuglestad & Milde 2013, Furre et al. 2014, Iversen et al. 2010; 2011, Knutzen et al. 2011, Lien et al. 2010, Noam et al. 2014, Oppedal 2011, Puzo et al. 2017, Saheer et al. 2013, Shakeel et al. 2015, Straiton et al. 2014; 2016a; 2016b.
Place of recruitment		
School	8	Abebe et al.2015, Alves et al. 2011, Bratt 2015, Dalhaug et al.2011, Fandrem et al. 2012, Iversen et al. 2014, Noam et al. 2014, Oppedal 2011.
Population surveys (e.g. HUBRO, Nord-Child)	5	Amundsen 2012, Bjereld et al. 2014, Claussen et al. 2009**, Lien et al. 2010, Saheer et al. 2013.
Primary Health Care (PHC)	3	Fuglestad & Milde 2013, Shakeel et al. 2015, Varvin & Aasland 2009**
Specialist Health care (SHC)	21	Alpers & Hanssen 2014, Berg et al. 2010; 2011; 2014; 2015; 2016, Berg 2009, Furre et al. 2014, Iversen et al. 2010; 2011, Johnson & Asbjornsen 2009, Knutzen et al. 2011, Naess & Moen 2015**, Opaas & Hartman 2013, Opaas & Varvin 2015, Opaas et al. 2016, Stenmark et al 2013; 2014, Theodorescu et al. 2012a; 2012b, Varvin & Aasland 2009**
National Registries	7	Claussen et al. 2009**, Diaz et al. 2015, Fadnes et al. 2016, Puzo et al. 2017, Straiton et al. 2014; 2016a; 2016b.
Reception centers	4	Bjørgo & Jensen 2015, Jacobsen et al. 2014, Jensen et al. 2015, Vervliet et al. 2014.

Others (e.g. resettled UR, community centers, immigrant organizations)	20	Erdal et al. 2011, Guribye 2011, Guribye et al. 2011, Hjellset et al. 2011, Iversen et al. 2014, Jensen et al. 2014, Keles et al. 2016a; 2016b, Markova & Sandal 2016, Naess & Moen 2015**, Oppedal & Idsoe 2012; 2015, Seglem et al. 2011; 2014, Stige & Sveaas 2010, Tingvold et al. 2012a; 2012b; 2015, Vaage et al. 2010; 2011.
Study design		
Cross-sectional surveys	38	School-based Abebe et al. 2015, Alves et al. 2011, Bratt 2015**, Dalhaug et al. 2011, Fandrem et al. 2012, Iversen et al. 2014, Noam et al. 2014, Oppedal 2011. Others Amundsen 2012, Bjereld et al. 2014, Claussen et al. 2009**, Hjellset et al. 2011, Jacobsen et al. 2014, Jensen et al. 2015, Keles 2016b, Lien et al. 2010, Oppedal & Idsøe 2012; 2015, Saheer et al. 2013, Seglem et al. 2011; 2014, Stige & Sveaas 2010, Teodorescu et al. 2012a; 2012b, Varvin & Aasland 2009, Vervliet et al. 2014. Catchment area-based Berg et al. 2016; 2015; 2014; 2011; 2010. Longitudinal (T1 and T2 (T3) Bratt 2015**, Jensen et al. 2014, Keles et al. 2016a, Opaas et al. 2016**, Tingvold et al. 2015, Vaage et al. 2011; 2010.
Retrospective	11	Registry based Claussen et al. 2009**, Diaz et al. 2015, Fadnes et al. 2016, Puzo et al. 2017**, Straiton et al. 2014; 2016a; 2016b. Others Berg 2009, Furre et al. 2014**, Knutzen et al. 2011**, Stenmark et al. 2014.
Prospective cohort	3	Iversen et al. 2010; 2011, Shakeel et al. 2015.
RCT	2	Stenmark et al. 2013, Bjørknes & Manger 2013.
Qualitative	8	Bjørngo & Jensen 2015, Erdal et al. 2011, Fuglestad & Milde 2013, Guribye 2011, Guribye et al. 2011, Naess & Moen 2015, Tingvold et al. 2012a; 2012b.
Mixed methods	5	Alpers & Hanssen 2014, Markova & Sandal 2016, Opaas & Hartmann 2013, Opaas & Varvin 2015, Opaas et al. 2016**.
Case-control	4	Johnsen & Asbjørnsen 2009, Furre et al. 2014**, Puzo et al. 2017**, Knutzen et al. 2011**.

* In two studies, participants were health personnel and not included here.

** Several categories

3.1.2. Sample size, sex, age, migrant status in peer-reviewed articles

The sample size of studies varied from less than 50 to over 10,000 participants, with the largest being registry studies. Majority of studies had less than 100 (N=22) participants. All but four studies included both genders. In 19 studies, participants were children/adolescents, including five studies with UR/URM, where the ages of participants were around +/- 18 years (63-67). Most studies (N=41) had adult participants and in two studies, the participants were aged 50 years or more (68, 69). Five studies included both adults and adolescents (70-74). Concerning reasons for migration, 18 studies included adult refugees only, whereas 11 studies included UAMA/URM/UR samples. Almost half of studies contained samples with mixed reasons for migration, including refugees.

3.1.3. Immigrants' country of origin in peer-reviewed articles

In several studies (N=32), samples were composed of a mix of immigrants with different countries of background, in addition to a mix of different generations, ethnic origin and reasons for migration. Often the samples of immigrants (both adolescents and adults) were categorized by their country of origin or their parents' country of origin according to SSB's own definition, thus including both "first" and "second" generation. Immigrants were often grouped under two categories because of small sample sizes as immigrants from western countries (including Scandinavia, USA, Europe and Eastern Europe) and immigrants from non-western countries (mainly including Middle East, Asia and Africa). There were exceptions: For example, in one cross-cultural study by Bjereld et al. (75), immigrant children were defined as children born in a Nordic, or a non-Nordic country. In another study, immigrants were categorized by their ethnic origin as *white immigrants* or *visible immigrants* respectively (76). In two other studies (68, 77), immigrants were grouped under two categories per World Bank income categories based on the gross national income in their country of origin: High-Income Countries (HIC) and Other-Income Countries (OIC) or Low-Income Countries (LIC). In studies where the sample included asylum seekers or persons with a refugee background, most often the country backgrounds were also mixed. Only ten articles focused on a single immigrant group: Two studies with immigrants of Pakistani background (69, 78), three studies on refugees with Tamil background (79-81) and five studies on refugees with Vietnamese background (70, 71, 73, 82, 83).

3.1.4. Place of recruitment in peer-reviewed articles

Studies also varied regarding place of recruitment of participants. Children/adolescents were most often recruited through schools (N=8). Most frequently, participants were recruited from specialist health services such as psychiatric outpatient clinics and acute psychiatric clinics (N=21). In a few studies, participants were recruited from a Primary Health Care (PHC) service (84, 85), but in several studies, register data from PHC services were used (68, 77, 86-88). Some studies recruited their participants outside of health care services, such as in reception centers for UAMA/URM, or, when resettled in different parts of Norway, using a multi-strategic recruitment with emphasis on personal contact in a local community. In some studies, diverse sampling practices were applied, where participants were recruited from a student portal web page, and employees from local schools and businesses, immigrant organizations and network on Facebook (80, 89, 90).

3.1.5. Research design in peer-reviewed articles

Research designs varied widely, but a majority of studies had cross-sectional and descriptive design. Of these, eight were identified as school based cross-sectional studies, 18 were population surveys with large samples, and five were based on catchment area surveys. Seven studies had longitudinal and cross-sectional design with at least two measurements at T1 and T2. Only two Random Control Treatment (RCT) studies were identified, and both measured the effects of a treatment method. A smaller portion of studies used qualitative (N=8) and mixed method design (N=5).

3.1.6. Instruments used in peer-reviewed articles

There was an impressive variety of instruments used in the reviewed studies (Table 3.2). We registered 44 different instruments, not counting the different variations of the same instruments. Self-report-based screening instruments were mainly used to measure symptoms of psychological distress in cross-sectional studies.

Table 3.2. Instruments used for outcome measurements

Instrument	N	Studies
Hopkins Symptom Checklist (HSCL-6, -10, -25, -37 -for adolescents)	15	Abebe et al. 2015, Claussen et al. 2009, Fandrem et al. 2012, Hjellseth et al. 2011, Jacobsen et al. 2014, Jensen et al. 2014; 2015, Lien et al. 2010*, Opaas & Hartmann 2013, Opaas & Varvin 2015, Opaas et al. 2016, Oppedal 2011, Theodorescu et al. 2012a; 2012b, Vervliet et al. 2014.
Ucla Loneliness Scale-5	1	Abebe et al. 2015.
Strengths and Difficulties Questionnaire (SDQ-S)	3	Alves et al. 2011, Bratt 2015, Noam et al. 2014.
SCID-I M.I.N.I. CIDI	11	Berg et al. 2010; 2011; 2014; 2015; 2016, Iversen et al. 2011, Theodorescu et al. 2012a; 2012b, Jacobsen et al. 2014, Johnson & Asbjornsen 2009, Stenmark et al. 2013.
Positive and Negative syndrome scale (PANSS)	4	Berg et al. 2011; 2014; 2015, Iversen et al. 2011.
The Global Assessment Scale (GAF)	4	Berg et.al. 2014; 2016, Iversen et al. 2010; 2011.
Childhood Trauma Questionnaire (CTQ)	1	Berg et al. 2015.
Parent Practices Interview (PPI)	1	Bjørknes & Manger 2013.
Eyberg Child Behaviour Inventory (ECBI)	1	Bjørknes & Manger 2013.
Parent Daily Report (PDR)	1	Bjørknes & Manger 2013.
Teacher Report Form (TRF)	1	Bjørknes & Manger 2013.
Social Skills Rating System (SSRS)	1	Bjørknes & Manger 2013.
Family Satisfaction Survey (FSS)	1	Bjørknes & Manger 2013.
Rosenberg's 10 item self-esteem/ Social identities	1	Bratt 2015.
The YCC Hassles Battery	7	Dallhaug et al. 2011; Keles et al. 2016: 2016b, Oppedal & Idsøe 2012; 2015, Seglem et al. 2011; 2014.
Center for Epidemiologic Studies Depression Scale for adolescents (CES-D)	7	Dallhaug et al. 2011; Keles et al. 2016; 2016b, Oppedal & Idsoe 2012; 2015, Seglem et al. 2011; 2014.
Social cognitive mapping (SCM)	1	Fandrem et al. 2012.
Health-related quality of life (SF-36)	1	Hjellset et al. 2011.
Subjective health complaints (SHC)	1	Hjellset et al. 2011.
The Utrecht Coping List (UCL)	1	Hjellset et al. 2011.
Beck Hopelessness Scale (depression)	1	Iversen et al. 2010.
The Montgomery and Åsberg Depression Rating Scale (MADRS)(depression)	2	Iversen et al. 2011, Johnson & Asbjornsen 2009.
Harvard Trauma Questioner (HTQ) (PTSD)	6	Iversen et al. 2014, Jacobsen et al. 2014, Opaas & hartmann 2013, Opaas & Varvin 2015, Opaas et al. 2016, Vervliet et al. 2014.
Stressful Life Events checklist [SLE]	4	Jacobsen et al. 2014, Jensen et al. 2014; 2015, Vervliet et al. 2014.
The Child Post Traumatic Stress Disorder Symptom Scale (CPSS)	2	Jensen et al. 2014; 2015.
Clinician Administered PTSD Scale for DSM-IV (CAPS)	2	Johnson & Asbjornsen 2009, Stenmark et al. 2013.

Symptom Checklist-90-Revised (SCL-90-R)	4	Johnson & Asbjornsen 2009, Tingvold 2015, Vaage et al. 2010; 2011.
The Impact of Event Scale—Revised (IES-R)	3	Johnson & Asbjornsen 2009, Theodorescu et al. 2012a; 2012b.
The War Exposure Questionnaire (WEQ)	1	Johnson & Asbjornsen 2009.
Cross-cultural Depression Coping Inventory	1	Markova & Sandal 2016.
General Help-Seeking Questionnaire	1	Markova & Sandal 2016.
The Rorschach (RIM)	2	Opaas & Hartmann 2013, Opaas et al. 2016.
World Health Organization Quality of Life—Bref questionnaire (WHOQOL-BREF)	4	Opaas & Hartmann 2013, Opaas & Varvin 2015, Opaas et al. 2016, Theodorescu et al. 2012b.
Seasonal Pattern Assessment Questionnaire (SPAQ)	1	Saheer et al. 2013.
Edinburgh Postnatal Depression Scale (EPDS)	1	Shakeel et al. 2015.
The Hamilton Rating Scale for Depression (HAM-D)	1	Stenmark et al. 2013.
Post Traumatic Symptom Scale (PTSS)	1	Stige & Sveaass 2010.
General Health Questionnaire (GHQ)	1	Stige & Sveaass 2010.
Inventory of Complicated Grief (ICG)	1	Stige & Sveaass 2010.
Structured Interview for Disorders of Extreme Stress (SIDES)	2	Theodorescu et al. 2012a; 2012b.
The Life Events Checklist (LEC)	2	Theodorescu et al. 2012a; 2012b.
The Posttraumatic Growth Inventory Short Form (PTGI-SF)	1	Theodorescu et al. 2012b.
Adapted version of Acculturative Hassles Questionnaire	1	Tingvold et al. 2015.
Reactions of Adolescents to Traumatic Stress questionnaire (RATS)	1	Vervliet et al. 2014.

As seen in Table 3.2 the instrument used most often was the Hopkins Symptom Checklist (HSCL) of different formats (HSCL-6, -10, -25, -37). HSCL includes questions about symptoms most typical for depression and anxiety during the previous week. Often the cut-off point 1.75 or over is used as indication of anxiety or depression. Among the studies with clinical populations, clinical diagnostically assessments were conducted by clinicians using standardized diagnostic interviews: Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) based on DSM diagnostic system, the Mini-International Neuropsychiatric Interview (M.I.N.I) or Composite International Diagnostic Interview (CIDI) developed by the World Health Organization, based on ICD diagnostic system. The third most used instruments were the Youth, Culture and Competence (YCC) Questionnaire (which is a self-report battery designed for large surveys) and Center for Epidemiologic Studies Depression Scale for adolescents (CES-D). The fourth most used self-report instrument for adults in this review was Harvard Trauma Questioner (HTQ), which is designed specifically for assessment of post-traumatic symptoms. As far as these most used instruments considered all perceived as well validated cross-culturally in different community and clinical settings with good reliability.

3.1.7. General characteristics of grey literature

Among the grey literature identified (N=14), a majority were qualitative studies (N=10), three studies had cross-sectional designs (91-93), and one was registry based (94). In most of these studies, the participants were adults, while in two studies participants were children/adolescents, and in one study participants included elderly people and their families. Often a sample of immigrants (both adolescents and adults) was categorized by their country of origin (for “first generation”) or their parents’ country of origin (for “second generation”) without including the reasons for migration as a variable. Samples mostly included immigrants with a mix of country backgrounds, except for three studies conducted with participants from the same country of origin: Somali refugees (95), Cambodian refugees (96) and Kurdish asylum seekers (97). Thematically, the studies were quite diverse: Mental distress (91-93, 98), perceptions/understandings of mental health problems (95, 97, 99, 100), access/utilization of mental health services (94, 101, 102), psychological well-being among asylum seekers (103), resilience among refugees (96), and dementia (104).

Table 3.3. General characteristics of grey literature (N=14)

Sample size of immigrants	N	Studies
Less than 101	10	Dabo 2015, Egeland 2010, Heggebø 2016, Hussain 2010, Ingebretsen et al. 2015, Kermashani 2013, Kolstad and Thorud 2010, Mekonen 2011, Walås 2013, Øverland 2012.
101-500	2	Strandebø 2010, Teigen 2010.
Over 1000	2	Elstad et al. 2015, French 2009.
Sex		
Mixed sex	10	Dabo 2015, Elstad et al. 2015, French 2009, Heggebø 2016, Ingebretsen et al. 2015, Kolstad and Thorud 2010, Strandebø 2010, Teigen 2010, Walås 2013, Øverland 2012.
Females	1	Hussain 2010.
Males	3	Egeland 2010, Mekonen 2011, Kermashani 2013.
Age		
Children /adolescents	2	Strandebø 2010, Teigen 2010.
Adults	12	Dabo 2015, Egeland 2010, Elstad et al. 2015, French 2009, Heggebø 2016, Hussain 2010, Ingebretsen et al. 2015, Kermashani 2013, Kolstad and Thorud 2010, Mekonen 2011, Walås 2013, Øverland 2012.
Migrant status		
Refugees/asylum-seekers	4	Egeland 2010, Kermashani 2013, Kolstad and Thorud 2010, Øverland 2012.
Mixed	10	Dabo 2015, Elstad et al. 2015, French 2009, Heggebø 2016, Hussain 2010, Ingebretsen et al. 2015, Mekonen 2011, Strandebø 2010, Teigen 2010, Walås 2013.
Place of recruitment		
School	2	Strandebø 2010, Teigen 2010.
Population surveys	1	French 2009.
Specialist Health care (SHC)	1	Egeland 2010.

National Registries	1	Elstad et al. 2015.
Reception centers	2	Kermashani 2013, Kolstad and Thorud 2010.
Others	7	Dabo 2015, Heggebø 2016, Hussain 2010, Ingebretsen et al. 2015, Mekonen 2011, Walås 2013, Øverland 2012.
Study design		
Cross-sectional surveys	4	Elstad et al. 2015 (registry based), French 2009, Strandebø 2010, Teigen 2010.
Qualitative	10	Dabo 2015, Egeland 2010, Heggebø 2016, Hussain 2010, Ingebretsen et al. 2015, Kermashani 2013, Kolstad and Thorud 2010, Mekonen 2011, Walås 2013, Øverland 2012.

3.2. Thematic presentation of the findings in peer-reviewed studies and grey literature (N=79)

To describe the findings of all the included studies (N=79), with a wide thematic spread, the studies are divided under two main categories: *children/adolescents* and *adults*. Each of these categories is divided into thematic sub-categories in order to organize the topics studied. Under the *children/adolescents* section we have also created a category for *UAMA/UR/UM* and under the *adults* section we created own category for *refugee groups*, as these groups are often discussed separately in previous research. One of the five studies with both child/adolescent and adult samples is described under *children/adolescents* section, while the rest are under *adults* section according to their topics. In addition to these, we created four additional thematic categories at the end: *intervention studies*, *explanatory models*, *access to and utilization of health services and intercultural competency among healthcare personnel*. Despite this attempt to categorize the studies and findings, the studies are so diverse in almost all respects that some description of each is needed. In thematic presentation, findings from peer-reviewed articles and grey literature are merged together.

3.2.1. Children/Adolescents

There is a total of 19 peer-reviewed studies about children and adolescents and 2 grey literature. Of these, 10 studies are on immigrant youth of mixed backgrounds and 11 are on unaccompanied minor asylum seekers/refugees. The studies are presented according to their main theme.

Psychological well-being

A cross sectional study by Bratt (105) investigated the relationship between social identities, small-group vs. large-group identities, and psychological well-being (life satisfaction, self-esteem and mental health) in four cohorts among 705 adolescents with different ethnic backgrounds. This study found that identification with small groups, especially the family, was the most powerful predictor of psychological well-being.

Rates of mental distress/conduct problems and associated factors

Previous research has indicated inconsistent results on rates of emotional problems among minority children; some studies indicate that immigrant children are more likely to have emotional problems

than majority children, whereas other studies show the opposite. Generally higher levels of emotional problems are observed with girls in late adolescents compared to boys, which is described as “*gender gap*”.

In one study in this review, children from minority backgrounds—especially boys—were found to have more emotional problems, and this was associated with more school hassles (106). Another study found more similarities between immigrant and non-immigrant youth in emotional problems, but that immigrant boys reported more emotional problems than non-immigrant boys (107). Again, school stress was found to be an important associated factor. Thus, problems at school and with peers are predictive of emotional and behavioral problems independent of migrant background, but minorities, especially boys, report more school problems and, thus, emotional problems too. This is in conflict with the typical gender gap of higher levels of emotional problems more often observed in girls in late adolescents compared to boys.

In one study (108), the association between the cultural competence of immigrant adolescents (373 with mixed backgrounds, aged 13–15 years) and depressive symptoms was examined. The findings indicated a relationship between a high level of ethnic and host culture competence and low level of depressive symptoms.

In a large study including 366 school children in Oslo where 48% were of immigrant background, it was found that conflict with friends was the strongest predictor of emotional problems along with “self-criticism” (91). This was independent of immigrant background, as were similar findings in another quite large study showing that low social support from teachers and classmates was a risk factor for aggression and behavioral problems and that there was a negative correlation between support from classmates and ethnic background. (92).

Discrimination/bullying

Two studies examined perceived discrimination/bullying and mental problems in mixed groups. One study investigated differences in social support, perceived discrimination based on ethnic background, and mental health in one adolescent and one preadolescent sample of immigrant children (109). It was found that perceived discrimination was a consistent predictor of mental health problems (anxiety and depression) among children aged 10–15 years across ethnic groups. In another study (110), different forms of peer bullying and the relationship between levels of bullying and depressive symptoms in native Norwegians and immigrant adolescents of mixed backgrounds, aged 13–16 years, was investigated. The immigrants reported higher victimization compared to native Norwegians, but did not differ regarding depressive symptoms. In addition, in another study comparing Nordic countries (75), higher levels of parent-reported bullying victimization among immigrant children were recorded, but a relationship with mental health was not examined.

Drinking frequency

A study analyzing large survey data from 2000-01 (HUBRO) among 15–16-year-olds and their parent generation, 30–60-year-old Iranians, Pakistanis, Turks and ethnic Norwegians, found that adults and youth of ethnic Norwegian background used alcohol more frequently than adult and youth immigrants (74). However, there were significant differences between the immigrant groups: Iranians reported a higher frequency of alcohol use than Turks and Pakistanis. For all groups, high host culture competence and social interaction was associated with a higher frequency of alcohol use. In a recent study among adolescents aged 14–17 of mixed backgrounds (111), the lowest prevalence of binge drinking and drug use was found among adolescents born in Norway with Asian

background, even after adjustments for age, gender, religion, parents' education and depressive symptoms.

Acute psychiatric care

Furre et al. (112) studied the social, mental health and treatment characteristics of restrained and non-restrained adolescents during 2008–10 in 16 acute psychiatric inpatient units (N=288). Fifty patients (9%) had an immigrant background of which most (N=40) were born in Africa or Asia. Compared with non-restrained adolescents, restrained adolescents more often had immigrant background, were more likely to be involuntarily referred and have lower psychosocial functioning scores, multiple admissions and longer stays.

Mental distress/disorders among unaccompanied minor asylum seekers/refugees (UAMA/UR/UM)

Several studies on unaccompanied minor refugees in this review examined mental distress symptoms in relation to pre-war experiences, with two studies also on present acculturation stress. Consistently in these studies, a higher prevalence of psychiatric morbidity and pre-war adversaries was found, but also daily hassles and acculturation stress in the current life situation.

Two studies (63, 64) explored daily hassles (general and acculturation specific) and mental health generally, and depression specifically, among unaccompanied refugees (UR) with a permanent residence permit in Norway in the years 2000–10. Participants had backgrounds from 33 different countries, most (81.9%) were male, mean age 18 years, average stay in Norway three and half years. The first study (63) showed that daily hassles can act independently and that acculturation-specific difficulties explained 43% of the variance in depression. The second study, was longitudinal with the almost identical sample as the previous one, but data included measurements at three time points as T1, T2 and T3 to investigate the longitudinal relation between depressive symptoms and daily hassles (64). The findings underscore the importance of current life conditions for unaccompanied refugees' mental health also over time.

Using an overlapping sample, Oppedal & Idsøe (65) investigated effects of pre-migratory war-related trauma and current acculturation on conduct and depression problems in a group of UR (566 persons, average age of 18.9 years and average length of stay in Norway of 3.7 years), who had residence and were resettled all over Norway. Most reported a first-hand experience with war (boys 81%, girls 68%). Of these about 20% reported either intrusive memories or nightmares, many reported that they suffered from both. Conduct problems were very rare in this group, but the prevalence of depression was high with both boys and girls. Acculturation stress explained considerable variations in depression problems more than the impact of war-related traumatic events. In another study (66), they also demonstrated the importance of different sources of social support (both family abroad and friends) for a positive acculturation process and for mental health.

In two studies with overlapping samples (67, 113), the level and predictors of depressive symptoms among UR after resettlement was investigated. Findings indicated that URs are a high-risk group for mental health problems also after resettlement in a new country. Controlling for post-traumatic stress, females had more symptoms than males and Somalis had fewer symptoms than participants from other countries.

In one study (114), the mental health of UM shortly after arrival in Norway (N=204) was compared with a similar sample in Belgium (N=103). The first weeks after arrival in the host country, self-report

questionnaires (HSCL-37A, SLE, RATS, HTQ in Arabic, Dari, Farsi, Somali, Sorani, and Pashto) were administered to study participants. The results showed high prevalence scores of anxiety, depression and post-traumatic stress disorder symptoms in both samples. The more traumatic experiences reported, the higher were the symptom scores.

In another study (115), the prevalence of psychiatric morbidity among unaccompanied asylum-seeking children (UASC) (160 male, 15–18 years of age, mixed backgrounds) at an early stage after arrival in Norway was explored. Data collection included translations of the Hopkins Symptom Checklist-25 (HSCL-25), Harvard Trauma Questionnaire (HTQ), Stressful Life Events checklist (SLE) and Structured clinical interviews (CIDI). The results indicated that UASCs are vulnerable with a high prevalence of psychiatric morbidity. Most of the participants had experienced life-threatening events (82%), physical abuse (78%), or loss of a close relative (78%) in their former country. Altogether, 41.9% of the participants fulfilled diagnostic criteria for a current psychiatric disorder. The most prevalent diagnosis was PTSD (30, 6%), followed by Major Depressive Disorder (MDD) (9, 4%), Agoraphobia (4, 4%) and Generalized Anxiety Disorder (GAD) (3, 8%).

Early life experiences of unaccompanied refugee minors (URM) related to interpersonal violence at home and at school were also investigated in a sample of 34 URMs who arrived Norway before the age of 15 and with different countries of origin. (116). They found that many of these children have experienced violence often and on a regular basis at home or at school or both in their home countries. In many cases the brutality was extreme. Many suffered after-effects in the form of constant fear and intrusive memories of the violence.

In a similar but younger group, newly arrived UASC aged 10–16, the prevalence of stressful events/mental health problems was investigated (117). The sample consisted of 93 children (75 boys) from 14 countries (63% Asia; 36% Africa). Severe life events (SLE) and psychological symptoms were measured by self-report (Hopkins Symptom Checklist-37 for Adolescents) and Child Post-traumatic Stress Disorder Symptom Scale (CPSS). Participants reported a mean of 5.5 SLE. The most prevalent SLEs were death of a close person (68%), witnessing violence (63%), and war (62%). Fifty-four percent scored above the clinical cut-off for post-traumatic stress symptoms, 30% for anxiety symptoms, 20% for depressive symptoms, and 7% for externalizing symptoms. Thus, many unaccompanied asylum-seeking children experienced both war-related traumas and several other severe life adversities.

In their follow up study, Jensen et al. (118) examined changes in mental health symptoms. Data collected 6 months after their arrival (T1) were compared to data collected 1.9 years later (T2). No change was registered in the level of PTSD, depression, anxiety, or externalizing problems from shortly after arrival to nearly two years later.

3.2.2. Adults

We identified 41 peer-reviewed articles and 12 examples of grey literature with adult samples. Again, these studies explore a variety of themes and will be presented accordingly.

Rates of mental distress and associated factors

Hjellset et al. (78) investigated health-related quality of life, subjective health complaints (SHC), psychological distress, and coping in 198 Pakistani immigrant women living in Oslo, with and without Metabolic Syndrome (MetS). Findings indicate a high score level of subjective health complaints and psychological distress with all. However, participants who had MetS had more SHC, depressive

symptoms, higher levels of somatization, and they scored significantly lower on the coping strategy of active problem solving.

In a population-based, prospective cohort study, 749 pregnant women (59% ethnic minorities) attending Child Health Clinics in three districts in Oslo between 2008 and 2010 were screened on the Edinburgh Postnatal Depression Scale (EPDS) and interviewed (84). The prevalence of depression was found to be higher in ethnic minorities from the Middle East (19.5%) and South Asia (17.5%) as compared to Western Europeans (8.6%) and other groups (11.3%). The increased risk persisted after adjustment for factors such as socioeconomic status, family structure, recent adverse life events, history of depression, and poor subjective health before conception.

One study (119) used survey data from the Oslo Health Study (11,070 persons aged 40, 45 and 59–60 years, including 1,130 immigrants with mixed country of origin) and linked them to disability pension data from the National Insurance Administration and to income and country of origin data from SSB. Mental distress was measured by the Hopkins Symptom Check List -10. The study concluded that the higher risk of receiving disability pension among immigrants from developing countries and Eastern Europe than among ethnic Norwegians could largely be explained by age, gender, occupational group, working conditions, and level of income. Although not found to be significant, researchers also added that there was a lower risk of disability pensioning among immigrants than among westerners when adjusting for self-reported general health and level of mental distress.

Using the cross-sectional survey data from the Oslo Immigrant Health Study (OIH), French (93) investigated the prevalence of musculoskeletal pain and its association with psychological distress among five immigrant groups, 2,458 persons, 20-60 years of mixed gender. Women had a higher prevalence of moderate-severe musculoskeletal pain than men in all five areas of the body. Psychological distress was associated as the strongest predictor of musculoskeletal pain after the adjustment for gender, age, pre-migration factors among all five immigrant groups.

In another study, also using data from the same cross-sectional survey from 2002 (OIH), large differences were found between the same five immigrant groups regarding prevalence rates for psychological distress (120). The highest prevalence of distress was observed among Turkish immigrants and the lowest prevalence of distress was seen in Sri Lankan immigrants. Of pre-migration variables, traumatic events, experience of torture and imprisonment were strongly associated with psychological distress for all five immigrant groups. Of post-migration variables, unemployment was most strongly associated with psychological distress for all five immigrant groups.

A third study using the same survey data from OIH, Saheer et al. (121) investigated the risk and protective factors related to prevalence of seasonal affective disorders (SAD). Findings again suggested considerable differences between immigrant groups regarding the prevalence of seasonal affective disorders both Winter-SAD and Summer-SAD. W-SAD level was lowest among Sri Lankan immigrants and highest among Iranians. There were also gender differences: while W-SAD was highest among Turkish men and Iranian women, it was lowest among Sri Lankan women and Vietnamese men. In addition, other factors as younger age, smoking, presence of mental distress, self-reported poor health and presence of chronic disorders were also significantly associated with W-SAD.

Psychoses and associated factors

As part of the Thematically Organized Psychosis study (TOP) in Oslo, several studies have been conducted with non-selected and consecutive catchment area samples of patients that were all diagnosed with psychosis and recruited from 2002 to 2011.

Berg et al. (122) examined whether perceived discrimination was associated with severity of symptoms among immigrants with psychotic disorders. The sample included 90 immigrant patients with heterogeneous backgrounds (66% first generation, 68% from Asia/Africa). The main finding was that African immigrants had the most severe positive and depression/anxiety symptoms, and reported significantly higher perceived discrimination.

Closely related to this topic, Berg et al. (76) also examined if migration experience and/or visible minority status affect symptom profiles collected by positive and negative syndrome scale (PANSS). The sample consisted of 1,081 patients with psychotic disorders (DSM-IV), 73% Norwegians, 10.5 % White immigrants (primarily from Europe and North America) and 16.5 % visible minority groups (primarily from Africa, Latin America, Asia/Turkey and Arabic countries both first and second generations). They mostly found similarities in psychosis symptom profiles between immigrant and non-immigrants, but also that visible minorities were assessed as having more delusions and difficulties with abstract thinking.

Berg et al. (123) also investigated the experience and effect of childhood trauma in ethnic minority patients with psychosis in a sample of 69 patients from both “first” generation (N=44) and “second” generation (N=25), and compared the results to majority patients. The ethnic minorities with psychosis reported significantly more childhood trauma than the majority, specifically physical abuse/neglect, and sexual abuse, and this partially explained findings of more positive symptoms in immigrants with psychosis, specifically hallucinations.

In another study by Berg et al. (124), 174 patients, 17–65 years of age with a diagnosis of psychosis, were assessed by neurocognitive and clinical tools and grouped according to the Human Developmental Index (HDI) in their country of origin. The sample included 58 immigrants who were matched with non-migrants (N=116). They found that difficulties in abstract thinking were more associated with socio-developmental background, measured through the HDI, than clinical psychosis symptoms in immigrants with psychosis.

In yet another study by Berg et al. (125) from 2002–07, vitamin D levels among 67 immigrants of mixed backgrounds and 66 Norwegians with psychosis, were compared to the general population. It has been found that vitamin D deficiency is more prevalent in ethnic minorities with psychosis when compared to other psychosis patients and healthy controls, and that this is also associated with more depressive symptoms. Thus, a conclusion they drew was that a number of environmental factors relevant to immigrants seem to exacerbate psychosis symptoms in these groups.

Acute psychiatric care

In a three-year prospective study (2005–08) by (126), the clinical and demographic characteristics of immigrant patients with involuntary or voluntary admissions to two acute psychiatric units in Trondheim and Oslo were compared. Among participants, 66% were voluntarily and 31.9% involuntarily admitted. Involuntarily admitted immigrants more often received diagnoses of schizophrenia and psychotic disorders than voluntary admissions. In another article (127) from this study, they examined symptom load and expectations for the future among immigrants, asylum seekers and refugees. They found that asylum seekers had greater distress and higher negative expectations for the future and more often than refugees had nightmares, feelings of guilt, hopelessness, and sleeping problems as compared to other immigrants.

A two-year retrospective case-control study (128) examined whether restrained patients differed from non-restrained patients regarding demographic, clinical and medico-legal variables. The sample consisted of 375 restrained patients and a randomly selected control group of non-restrained patients (N=374) from three acute psychiatric wards in Norway. The restrained patients were more likely to be younger, male, of immigrant background, have more admissions, longer in-patient stays and were more likely to be involuntarily referred. However, they also found that immigrant background, age and gender lost their predictive power when controlled for clinical variables such as length of stay, multiple admissions, involuntary referral and psychosis.

Suicide

Between 500 and 600 persons commit suicide every year in Norway, thus making it an important public concern. In their pioneer study, Puzo et al. (72), investigated differences in suicide risk among immigrant populations and native Norwegians. Norwegian national longitudinal registers, including all suicide cases 1960–2012 (23,073 cases) were compared to a nested case-control design (373,178 control). Suicide risk was found to be significantly lower among both first-generation and second-generation immigrants compared to Norwegians, but higher in Norwegian-born and foreign-born individuals with at least one Norwegian-born parents. There were considerable differences by country of origin.

Dementia—diagnoses and care

Three studies on dementia and immigrants were identified.

A registry study (68) dealt with immigrants with a diagnosis of dementia (or memory impairment) in primary health care (PHC), and their demographic characteristics, utilization of PHC services and pharmacological treatment. The sample included all ≥ 50 years of age Norwegians and immigrants by SSB definition registered in Norway in 2008. A significantly lower proportion of immigrants had a diagnosis of dementia or memory impairment. Anti-dementia medication was purchased more often by Norwegians than by immigrants.

One qualitative study (69) explored different perceptions of dementia among Norwegian-Pakistani families and their own cultural understanding of treatment and care, and the Norwegian health care system. Furthermore, the way in which symptoms of dementia were understood and responded to in their contexts was also explored. The sample included eight Norwegian-Pakistani families and twelve Norwegian health care employees working with dementia. The findings indicated that the traditional family model was the dominant narrative among Norwegian-Pakistani families. The dominant perception was that the care for older people was an exclusively familial responsibility.

Another qualitative study (104) included 81 persons from 23 countries, both relatives of immigrants with dementia, immigrants >50 years without a dementia diagnosis, and health and care personnel. The study showed variations in knowledge about and attitudes to dementia between and within groups of immigrants, and a need for information about dementia and service provision. Family caregivers reported both positive and negative experiences with service agencies. Many reported being stretched to their limit providing care to a family member with dementia but postponing seeking assistance from the public health and care system. Family members preferred a family-oriented approach in health care services, valuing their resources and knowledge about the person with dementia.

Asylum-seekers/Refugees

Eighteen peer-reviewed studies and four grey literature studies in this review included persons with refugee or asylum-seeker background only. Prominent themes were mental distress, disorders and trauma, but more positive mental health themes were also investigated.

Well-being/ coping strategies

In ethnographic field research Guribye et al. (80) studied communal, proactive coping strategies for well-being among Tamil refugees in Bergen and Oslo. The study found a new form for coping, communal proactive coping, as a resource for the well-being in this group. Guribye (80) also found that on-going manmade disasters in the country of origin have a considerable negative impact on the coping strategies and mental health of the community members.

Two grey literature articles on well-being, mental health and resilience were identified. In one study (103), six adult asylum-seekers at two reception centers were interviewed about the influence of the living conditions on their well-being and mental health. The results showed that passive waiting at a reception center, lack of control over their own lives, loneliness and isolation from the rest of society, boredom and separation from family and friends had negative influence on well-being and mental health. In another study, post-traumatic survival and resilience was explored among Cambodian refugees (96). The study demonstrated that their resilience builds on self-reliance, a strong work

ethic and social integration. It found that for successful survivors, religion and culture provided a resource as a secure 'knowledge' base, both of how to act and of how to understand the traumatic events.

There were two studies about parenting styles and adolescents' well-being in Vietnamese refugee families. The first study (70) described parenting strategies and how these constitute a resource and protective factor of mental health problems. They found that parents' seeking of balance and harmony between their traditional and Norwegian parenting styles, valuing the transmission of cultural values through Vietnamese language training, close contact with extended family and religious network, and aspirations in education and job for the children have positive effect for the well-being of their children. In the second study (71), extended family relations and acculturation of adolescents was explored. They found that close contact with the kin in the country of origin and globally— in particular with parental siblings— at critical stages or life crises, play important, positive roles in the acculturation process of adolescents.

Mental distress among refugees

A longitudinal study by Vaage et al. (83) investigated the long-term course and predictors of psychological distress among Vietnamese refugees 23 years after resettlement in Norway. The study showed higher distress scores at all three-time points as compared to the Norwegian population, but also indicated that mental health had improved significantly since the refugees' arrival in Norway. However, one fifth of the cohort, more than twice the percentage of Norwegians, had psychological distress scores above threshold on the SCL-90-R.

In addition to the original cohort of Vietnamese refugees, the participants' children were also investigated by Vaage et al. (73). The aim was to study the association between the psychological distress of Vietnamese refugee parents and their children after 23 years' resettlement. Thirty percent of the families had one parent with a high psychological distress score while only 4% of the children aged 10-23 years had high scores. Furthermore, Norwegian-Vietnamese children reported less psychological distress than their Norwegian peers. A significant negative predictor for the children's mental health at T3 was presence of PTSD in their father at arrival in Norway, while a positive predictor was the father's participation in a Norwegian network, three years after arrival.

Acculturative hassles/difficulties in the same adult cohort were also investigated (82). At T3, psychological stress was associated with acculturative hassles scores. Eighty percent reported one or more of the 16 acculturative hassles and the most frequently reported hassles clustered around language and communication. Self-reported measures of health, quality of life, and years of education were inversely related to acculturative difficulties.

In another study among refugee populations, possible associations between on-going and former stressors and mental health problems were studied (79). Immigrants of Tamil and Acehnese origin (N=142) were investigated immediately after the tsunami disaster in their country of origin in 2004. The results suggested independent contributions of exile-related difficulties, former exposures, and social support in explaining current mental health problems in this group, rather than ongoing stressors. Researchers pointed out methodological challenges with the recruitment of participants and with isolating the contribution of a stressor in populations with high levels of former exposure as well as on-going stress.

Traumatized refugees

Opaas et al. conducted a three-part longitudinal study (129-131) on the implications of adverse childhood experiences, potentially traumatic experiences of war and human rights violations (HRVs), and personality factors for the mental health and well-being of adult refugee patients. The sample of 54 multi-traumatized mental health patients with mixed refugee background were recruited 2006–09 at mental health outpatient services. Participants were interviewed/assessed at treatment start (T1), after one year (T2), and after three years (T3). Using several different methods, they found the content of the Rorschach Inkblot Methods (RIM) responses to be highly trauma-related. They also identified two trauma-related dimensions of personality functioning, which affect the patients' symptom formation (129).

In the second study, Opaas and Varvin (130) explored on the one side the relationship between refugees' experiences with torture, exposure to war, persecution and human rights violations (HRV), their mental health and quality of life, and the relationship between potentially traumatic experiences (PTE) in childhood and adult mental health on the other. They found that the extent of childhood PTEs was more strongly related to mental health and quality of life than the extent of war and HRV experiences. Childhood PTEs were significantly related to arousal and avoidance symptoms of PTSD and to quality of life, whereas pre-flight war and HRV experiences were significantly related to re-experiencing symptoms of PTSD.

In the third study (131), the relationships of the Rorschach Inkblot Methods (RIM) responses with measures of anxiety, depression, posttraumatic stress, quality of life (QOL), employment, and exile language skills throughout 3 years (T1, T2, T3) were examined. The trauma-related personality dimensions, characterized by impaired reality testing, was related to more mental health symptoms and poorer QOL. Furthermore, individuals with adequate reality testing improved in post-traumatic stress symptoms the first year after treatment start and retained their improvement throughout the next two years.

A study by Johnson and Asbjørnsen (132) provides evidence for cognitive difficulties with PTSD patients. A sample of 21 refugees/immigrants of mixed backgrounds with chronic PTSD was recruited from outpatient clinics and refugee/immigrant health services and compared with a control sample of 21 refugees/immigrants with similar exposure to war and political violence, but without PTSD. The study findings indicated memory impairment and use of ineffective learning strategies among patients with PTSD.

Another study (133) provides support for memory impairment and the use of ineffective learning strategies with persons with PTSD. In this study among adult refugees recruited at language schools for newcomers, the impact of trauma and psychological distress on motivation for Norwegian language acquisition was evaluated. It was found that the most violent traumatic events seem to be negatively related with motivation for foreign language acquisition.

Teodorescu et al. (134) investigated the relationship between multiple exposures to traumatic events, the severity of traumatic symptoms and post-migration stressors. A clinical sample of 61 refugee outpatients (with background from 21 countries) from psychiatric clinics was recruited and clinical interviews and self-report instruments were used to collect the data. The findings indicated exposure to several traumatic events both with women and men, a high prevalence of multiple psychiatric diagnoses with a mean of 5.4 and high comorbidity with chronic pain. Post-traumatic Stress Disorder (PTSD) was diagnosed in 82% of the patients, major depressive disorder (MDD) in 71%, while Disorders of Extreme Stress Not Otherwise Specified (DESNOS) was present in 16%. Eighty percent of those who had PTSD had three or more additional diagnoses, and 88% of patients with

PTSD also suffered from chronic pain. Higher rates of unemployment, weak social networks and weak social integration were found in these outpatients and were related to increased psychiatric comorbidity and severity of symptoms.

Teodorescu et al. (135) also investigated post-traumatic growth (i.e. positive psychological change experienced as a result of the struggle with highly challenging life circumstances), post-migration stressors, and their association with quality of life, using the same data. All patients in the sample reported low levels of quality of life but also either some or a large degree of post-traumatic growth. Post-migration stressors such as unemployment, weak social network and poor social integration was all negatively associated with quality of life, whereas post-traumatic growth was positively associated with better quality of life.

3.2.3. Intervention studies

Only two studies, both with randomized controlled trial (RCT), were found. In one study (136), Narrative Exposure Therapy (NET) was compared to Treatment as Usual (TAU) and changes were monitored in symptom severity and in the diagnostic status for PTSD and depression of refugees and asylum seekers, recruited at 11 psychiatric health care units. The results indicated symptom reduction with both interventions, but NET gave significantly more symptom reduction compared to TAU as well as significantly more reduction in participants with PTSD diagnoses. No difference in treatment efficacy was found between refugees and asylum seekers.

In a continuation of this study (137), Stenmark et al. examined if gender, offender status, level of anger and depression can influence the treatment outcome in a group of non-responders (NR) and responders (R) compared. Being male and reporting to have been a violent offender were significantly more frequent characteristics of NRs compared to Rs.

In the other RCT study (138), 96 mothers from Somalia and Pakistan with a child aged 3-9 years old were given either Parent Management Training—Oregon Model (PMTO) or waiting-list condition to measure intervention effects of PMTO on maternal practices and conduct problems in their child. PMTO was effective in enhancing parent practices by decreasing harsh discipline practices and increasing positive parenting. Furthermore, they found that PMTO reduced mother reported child conduct problems.

3.2.4. Explanatory models

A total of seven studies on explanatory models of mental distress and disorders were found. Erdal et al. (89) studied beliefs about depression among lay persons, refugees, immigrants and professionals (N=722). Vignettes of depressed patients with a variety of cultures and/or social circumstances, and 20 questions following these, were used for data collection. The main finding was that immigrants and refugees, particularly of non-western origin, endorsed more self-help types of interventions (spirituality, exercise, rest) than both native Norwegians and mental health professionals, who endorse more professional interventions.

A mixed method study among refugees with Somali background (90) studied explanatory models of depression and preferred coping strategies. Depression was found to be perceived as “illness of thoughts” caused by supernatural or religious influences, by the social situation and/or an emotional reaction to difficult life situations rather than a biomedical disturbance. The most preferred source of help for depression and coping strategies were social support from the extended family and friends

and the religious community, and treatments like resting, reflection about life, leisure activities. The least preferred strategy was using medication.

Egeland (95) explored patients' own understandings of mental health problems using qualitative interviews with five Somali immigrants who were previously psychiatric patients. Their explanation and understanding of mental health problems were characterized by being located between two different meaning systems. None of the interviewees presented religious explanations or concepts when asked open-ended questions; they only did so when the researcher addressed these issues explicitly, the participants presenting their religious and cultural explanations for their own suffering.

In a master study of young female adults with immigrant background (98), participants reported conflicts between own preferences and cultural expectations. To be assigned social identities they did not identify with was experienced as problematic. They described their cultural resources (faith, family and friends) as positive for their mental health.

In two master theses (97, 99), immigrants were interviewed about attitudes regarding mental disorders. Informants reported that stigma and discrimination against persons with mental disorders was a serious problem among non-western immigrants. They wanted more measures to prevent stigmatization. In another master thesis, Mekonen (100) interviewed Christian and Muslim religious leaders with immigrant backgrounds about their understanding of their role in meeting with people with mental health problems. Religious leaders reported a supportive function in relation to persons with mental problems, including outreach activities, and a potential for expanding their role as mental health promoters in faith communities.

3.2.5. Access to and utilization of health services

PHC

One population based retrospective cohort study (77), about PHC usage and morbidity, linked three population-based registers for children (1,168,365; 119,251 with immigrant background) under 18 years of age in 2008. The mean number of visits to PHC for children from low-income countries was higher compared to children from high-income countries and non-immigrant children. First generation immigrant children used PHC significantly less after adjusting for sex and age compared to second generation immigrants and non-immigrants. Moreover, it was found that mental health problems were diagnosed substantially less often among immigrants, both first and second generations.

We have already mentioned a register study about dementia and immigrants that indicated that a significantly lower proportion of immigrants had a diagnosis of dementia or memory impairment (68). In a register study by Straiton et al. (86), immigrants' use of primary health care services (PHC) for mental health problems and the association between length of stay, reason for immigration and service use were investigated among the five largest immigrant groups. After accounting for background variables, all immigrants, except Iraqi men had lower use of GPs or EPC services for mental health problems as compared to Norwegians. A shorter length of stay in Norway was associated with lower odds of a P-consultation.

In the same register study, treatment options in PHC for immigrant women with mental health problems from the five largest immigrant groups, and aged between 20–67 years old, were compared to non-immigrant women (87). One of the findings was that immigrant women were underrepresented among patients who had a P-consultation. Use of psychotherapy, antidepressants,

and anxiolytics was lower among Filipina, Thai, and Pakistani and Russian women compared to Norwegians, but not for Swedish and Polish women. The researchers argued that use of the broad term “immigrants” might mask differences in access to health services and treatment.

By using the same register data, Straiton et al. (88) have also investigated differences between refugees and non-refugees from the same country of origin in their primary health care service use for mental health problems and purchase of psychotropic medicine. They found that refugees had higher odds of using primary health care services for mental health problems than non-refugees. Refugee men and women were more likely to purchase psychotropic medicine than non-refugees. Their findings suggest that refugees have poorer mental health than non-refugees.

In a smaller scale study, the reasons for adult immigrants and refugees’ use of a low-threshold, easy-to-access mental health service in Bergen were investigated (139). In contrast to expectations that they would mostly make contact for issues related to previous traumatic experiences, difficulties with actual here-and-now daily life and functioning were more prominent.

SHC

Berg (140) compared utilization level of one acute psychiatric care in Oslo among western and non-western immigrants with ethnic Norwegians over an eight-year period (2000-07). A total of 792 men and 701 women were referred and, of these, 168 were men and 59 were women of a non-western background. An increase in referrals of non-western immigrants was registered twice as often. The findings indicated lower utilization rates for women with non-western background, but significantly longer stays in the department as compared to ethnic Norwegian women.

Elstad et al. 2015 (94) used SSB register data from comprising the total population in 2008 (4.7 million, of which 425,000 were immigrants), using descriptive register data from the Norwegian Patient Register on all consultations and admissions at the somatic and mental health services 2008–11. The main finding was that immigrants’ use of specialist health care was lower than their proportion of the population would suggest. It is particularly in mental health care that immigrants generally have a proportionately low consumption. However, there were considerable differences between immigrant groups.

In a qualitative study, the adequacy of current mental health service provisions for refugees in Norway was investigated (101). The sample included 27 participants from different professional settings, and interviews and focus groups were used as data collection methods. The main conclusion was that specialized mental health services that are culturally appropriate and accessible for refugees were needed but lacking in Norway.

Heggebø (102) investigated mental health care services and the mental health of asylum seeker children by interviewing employees working with asylum children in health care, kindergartens, schools and child care. Participants agreed that asylum-seeking children have clinical conditions that are much more complex than those among Norwegian children and that asylum seeker children are not getting the health services they are entitled to due to numerous hurdles.

3.2.6. Intercultural Competency among healthcare personnel

Cultural competency is one of the concepts used to describe a set of knowledge, skills and attitudes recommended for health providers in order to deliver health care services sensitive to the needs of patients who have different cultural and linguistic backgrounds than themselves. In this review, two studies about health personnel's self-evaluation of their own competence for working with immigrants with mental health problems were found. In the first study by Alpers and Hanssen (141), both medical unit and psychiatric unit nurses at a hospital in Oslo reported that they had little knowledge about illness and treatment traditions, other than western biomedicine. The assessment of symptoms across cultural and linguistic differences was mentioned as a challenge, and they wanted more knowledge about intercultural symptom assessment and culturally competent treatment and care options.

In a survey (85) with a representative sample of Norwegian physicians working in primary and specialist health care services in 2006, the majority reported to have middle-level competence in treating refugee patients. However, 28 % of GPs assessed their competence to be low. Seventy per cent of GPs and 55 % of psychiatrists expressed that it was difficult or impossible to get advice and guidance from experts when needed. About 50 % had negative experience with referring patients to a psychiatrist or a psychiatric hospital department, and they often did not know whether their patients were traumatized.

Part 4. Discussion—challenges and gaps in research and knowledge

The review included a total of 79 works, of which 65 were peer-reviewed articles and 14 were studies within grey literature, using the search strategy of scoping review. Studies included in this search cover a broad range of themes and a diversity of participant backgrounds, sample size, outcome measures, study designs, research methods, recruitment methods and place of recruitment. This gives a wide spectrum of findings and insights, but it also complicates the comparison and discussion of research methods, samples and the main findings. However, in line with earlier studies, studies in this review indicate an increased risk for mental distress and high prevalence of psychiatric morbidity with UAMA/URM/UR children/adolescents, and thus confirm that these groups stand out as especially vulnerable for mental health challenges also after resettlement in Norway. Findings from several studies underscore the importance of current life conditions on the mental health of these children/adolescents and the significance of health-promoting interventions, including activities that strengthen their adaptation to the host culture beyond only dealing with the sequence of the traumas they have been exposed to. Studies in this review also indicate a high prevalence of PTSD, depression and high comorbidity of psychiatric diagnoses in clinical samples of adult refugees. The findings highlight the importance of exploring the extent of traumatic experiences in childhood in these groups as these experiences can be more strongly related to mental health and quality of life than the extent of their experiences of war and human rights violations.

Moreover, the review indicates high rates for self-reported psychological distress among immigrants—especially those from low-income countries—compared to the mainstream population, and considerable differences in prevalence rates between immigrant groups. These findings are in line with the previous review on mental health, which also found that there was a higher prevalence of self-reported mental distress among immigrants, particularly in immigrant populations from low- and middle- income countries, as compared to Norwegians (56, 57).

Several register studies in this review indicate the lower utilization rates of mental health services—both primary and secondary—by several immigrant groups compared to the majority population.

Several studies with clinical samples have identified specific challenges for patients with immigrant background and psychotic disorders. Existing qualitative studies also provide some evidence for different explanatory models of mental illness among studied groups, which can influence—among others—their help seeking and utilization of health care services.

In this review, the categories we use to describe mental health challenges are reflected upon and the difference between often used concepts such as “*mental/psychological distress*” and “*mental illness/disorder/disturbance*” is highlighted. The review reveals that even if we have estimates of prevalence of mental disorders for the majority population, similar estimates of mental disorders among immigrant groups for all ages are still lacking.

Several cross-sectional surveys in this review briefly examine self-reported mental distress mainly related to depression and anxiety symptoms, but are not reliable in identifying “*cases*.” Findings from survey studies are therefore far from being complete and lack layers of information—such as, resources within the person and her/his surroundings, and if and how these high levels of mental health problems influence daily functioning, quality of life and well-being.

This review included a considerable number of studies published in a relatively short time span from January 2009 to July 2017 compared to the previous review (57). This may partly be explained by our broad search criteria, specifying mental health both positively as mental healthiness (including psychological well-being, quality of life, and resilience) and as mental health challenges (including psychological distress, disorders and risk factors). Another reason for this may be a greater interest in recent years in the subject matters of migration and health.

Still, there are many aspects of immigrant mental health and related issues that we know little about. For example, we do not know why the prevalence rates of psychological distress are above or below comparable majority populations, or why these numbers vary according to country background. We do not know reasons why lower utilization numbers do not correspond with self-reported rates of mental distress, both for adults and children/adolescents.

A constraint was that positive mental health has been investigated only to a limited extent as the focus has mostly been on problems creating negative feelings, challenges, ailments and disorders (17). Mental health concepts such as “*well-being*” and “*quality of life*” are suggested as an alternative to deficit and disorder focus in the area of mental health. These are multidimensional constructs and refer a person’s subjective evaluations of her/his life—what gives life meaning, or what really matters most for the person and the subjective experience of the totality of one’s life of which mental health is only one part. Generally, few studies have measured well-being and quality of life, though these can be a better indicator of help needs than self-perceived symptom levels.

Below we will discuss briefly some of the most important methodological limitations of the included studies.

4.1. Methodological limitations of the included studies

Some of the most apparent methodological challenges in the studies reviewed were about sample size and compositions, research designs and validity of outcome measures as screening tools. As seen in the results section, in several studies the sample was composed of a mix of both country of origin and reason for migration, i.e. of labor migrants and refugees, sometimes even from different continents. Such lumping of different migrant populations may give an impression of migrants as being one homogenous population group. It may also conceal differences between immigrant groups

on several dimensions that are known to be important for health and mental health and utilization of health services, such as length of stay, reasons for migration, pre- and post-migration variables and fluency in the host language. When lumping together all into one “immigrant” group who, for example, were born abroad with two immigrant parents and those being born in Norway of one or two immigrant parent(s), we risk losing sight of different life situations with a possible impact on e.g. mental health and mental health service use. In particular, grouping children/adolescents by country of origin or their parents’ country of origin poses a challenge, as these categories used may be inadequate and outdated. For example, where should researchers place participants with mixed cultural identities and country backgrounds? This is the case for an increasing number of children and adolescents in our globalized world. One suggestion may be to ask the participants themselves to define their own cultural/ethnic affiliation instead of forcing them into predetermined categories (142).

Research designs in included studies varied widely, but the overwhelming majority had cross-sectional and descriptive designs, giving knowledge of correlations, not causality. Unlike the previous review, we identified several registry-based studies, which is useful for getting a picture of, for example, health care utilization across immigrant groups at a point of time. Few studies in this review had a longitudinal design, which would make monitoring of process and outcome measures possible.

The most studied topic in cross-sectional studies was rates of mental distress or risk factors and their association with demographic and psychosocial variables. Mostly, cross-sectional studies employed self-report questionnaires in data collection. There was an impressive variety of instruments used in the reviewed studies, which in themselves pose the question of validity, reliability and norm issues for the samples they are applied to. The most used instrument for mental distress measurements was Hopkins Symptom Checklist (HSCL), in different formats. These instruments have been developed in a western context for local populations, but used worldwide and for immigrants in western countries. They are perceived as well validated as self-report screening in community and clinical settings with different populations. However, these instruments have seldom, with a few exceptions (143), been validated against locally developed instruments (144). Furthermore, seldom were their psychometric properties (validity, reliability and norms) assessed for immigrant groups specifically. It is most common to use translated versions, at best validated for the population in the country of origin without modifying for the context immigrants are living in and without comparing with the original population. Yet another limitation related to these self-report instruments is that, in many studies, statistical adjustments to cut-off levels have not been made. In these cases, cut-off values indicating the risk of corresponding mental disorders in western contexts are often considered as valid even in non-western contexts. It appears to be assumed that the same levels apply to all groups of people. In addition, invariance analyses to check the correlation between scores on the individual questions and the total scores are often not conducted.

Even though survey studies can be useful for getting a general picture of level of psychological distress, which can be a risk factor for the development of mental disorders, we have good reason to advise extra caution in interpreting the results from survey data among immigrants.

We observe that there is also a discussion about the degree to which self-report instruments are sufficiently sensitive for identification of “cases” or to detect mental disorders that need treatment when used in non-clinical samples. Using these types of epidemiological studies in identifying incidences of diagnosis is an insecure way of doing this, as studies indicate that between 40 and 50% of respondents who report high psychological distress levels are false positives (145). In another study (146) results from several translated instruments (e.g. HTQ, and HSCL-25) were applied to a group of asylum seekers and validated with results from CIDI applied to same group of persons. Their

main conclusion was that translated instruments based on self-report are valid when persons have some education and that, with HSCL-25, one can at best identify persons who are in need of further evaluation.

Even when assessment of mental health problems is done by clinicians, as in several studies in this review, some cautions should be taken. The psychiatric epidemiology studies indicate that the wide variation in the prevalence rates of mental disorder across countries and regions, which might be a result of inadequate assessments of cultural factors in the expression of mental distress (144). The cultural applicability of diagnostic labels to persons with a cultural background other than the context it is developed in can be questioned. Several have raised the issue of cultural applicability of the label PTSD to populations outside of a western context. It is argued that, based on a western trauma model, the PTSD diagnosis represents a highly-individualized model of suffering emphasizing psychological aspects of distress, and thus its value as a valid construct across cultures can be questioned (22). Similar arguments can be suggested for other diagnostic labels such as depression.

Taken together, existing challenges in research gives reasons for extra caution in interpreting the results from the reviewed studies. A brief summary of methodological challenges already mentioned, and others we have observed in this review, will be listed below in bullet points:

- Most were not random samples, and in some cross-sectional studies the RR was low. In five studies in the review the survey data used was in danger of being outdated as these were collected from beginning of the 2000s. Thus, the results may say more about the mental health situation in the past than at present.
- Most studies lumped participants together according to regions or continents often because of the low numbers of participants from the same country. This type of mixing persons with exceptionally different backgrounds under the same category results in “black box epidemiology,” which can conceal important differences that might exist between immigrant groups and limits the value of knowledge gleaned from these studies.
- Constantly using country of origin can also conceal differences related to ethnic background within the same country of origin.
- Generally, user perspectives and the inclusion of immigrants’ own perspectives in research projects—is lacking. Research questions and design are defined in advance by researchers, without checking relevance or importance for immigrant groups studied.
- Very often mental health measurements stand alone, independent from subjective self-evaluations of quality of life, health related quality of life, well-being and levels of functioning.
- Most of the studies have cross-sectional design and their results therefore cannot confirm causality between variables, only correlations.
- Prospective and longitudinal studies with a life course approach are lacking, with few exceptions.
- Self-report based screening instruments were mainly used to measure symptoms of psychological distress in cross-sectional surveys. However self-report instruments might overestimate because of positive false bias.
- Participants in the studies were very heterogeneous, with diverse cultural and ethnic backgrounds, and therefore their understanding of mental health and psychological distress can be quite different. This can be reflected in their interpretations of survey questions.

- Linguistic barriers, to differing extents, might also influence participants' answers during surveys/examinations. Even in studies using interpreters or translated questionnaires, the danger of linguistic barriers cannot be fully ruled out.
- The most used self-report tools are validated cross-culturally, but others are not. However, with a few exceptions, these tools are seldom validated against locally developed instruments. Translations are available for several psychometric instruments, but even if translations are validated, the content might not be culturally validated.
- Typically, cut-off points are not adjusted, and invariance analysis is not conducted.
- Assessments with diagnostic interviews in research as in clinical practice alike can be challenging, as the cultural applicability of diagnostic labels developed in western contexts to persons from different cultural backgrounds can be questioned. For reliability and validity concerns these assessments should be conducted in a culturally sensitive way that also meets the linguistic needs of the participants.

4.2. Knowledge gaps and recommendations for future research

Despite the wide range of topics, groups and research methods found in the reviewed studies, there were many issues that were not dealt with. Methodological challenges mentioned above also gives clues about existing knowledge gaps. It is not possible to make an exhaustive list but some of the identified knowledge gaps as well as recommendations for future research will be listed below in bullet points:

- One of the conclusions we can draw on this literature review is that mental health of immigrants (both positive mental health and mental distress) should be documented and monitored better.
- We need knowledge about prevalence rates for mental disorders among immigrant populations both adults and children/adolescents.
- We need to understand better "*opposite gender gaps*," as studies indicate that more immigrant than non-immigrant boys are in the high-risk group for emotional problems.
- We need knowledge about possible reasons for immigrants' underutilization of health services for mental health problems, both within primary and secondary health care services.
- We need studies on immigrants who are not studied at all—for example those from Eastern Europe and other nearby countries—to understand better their mental health and their utilization of mental health services.
- Knowledge gaps exist on risk factors for suicide, suicide attempts and suicide rates among immigrant populations and the reasons behind the evidence.
- We need research about drug addiction/abuse among immigrants.
- We need comparative studies that can include several groups of immigrants in comparison with the majority population and original populations.
- There is a need to create a pool of validated, reliable and norm adjusted screening instruments for survey studies among immigrant groups.

- Survey studies among immigrants give us a picture of self-reported mental distress but we do not know if this corresponds with experienced life quality and well-being. Research is needed on the numerous dimensions of mental health and their relationships with each other both in clinical and non-clinical samples.
- Prospective and longitudinal studies with a life course approach are lacking, with few exceptions. We need both this type of research and qualitative studies in order to establish the direction of causality and to understand the picture drawn by cross-sectional studies.
- There is a need for more knowledge on the relationships between mental health, life style, somatic health and mortality among immigrants. In the majority population, these relationships are found to be very strong. This may be larger, and with greater variation, among different immigrant groups.
- We need knowledge about mental health challenges among the elderly immigrant population in Norway.
- We need more studies about perceptions/understanding of mental health and illness among different migrant groups and how this is reflected in existing findings.
- We need more knowledge about the stigma attached to mental health problems, consequences and concrete measures to prevent stigmatization.
- We need research about the role alternative treatments and e.g. support from social networks play for people dealing with mental health challenges.
- We need more studies about UAMA/URM/UR children/adolescents' and refugees' resources, post-traumatic growth and resilience.
- There is a need for investigating experiences of discrimination and their impact on mental health.
- We need studies about immigrants who fall outside of studied groups, such as undocumented immigrants.
- Generally, we need studies that move from rates/prevalence/associations to effective promotion/prevention/interventions and treatment efforts.

4.3. Limitations of this review

To some extent, the present review builds on the previous review, and it could have been interesting to compare findings and discuss a probable development. However, this is not feasible as the previous review was different in many ways, e.g. because of the review methods used. The present review has applied scoping review as the review method, with a focus on mapping the extent and nature as well as the main findings of research. Even though it is an advantage to get an overview of topics, methods, groups and researchers with a broad catch of studies, it is a limitation that scoping review evaluates the quality of the studies to a limited degree only. The quality of the studies in this review, including both peer-published and grey literature, varies in many respects. As a result, the value of the knowledge found in this review may be limited and the review findings should therefore be read with this in mind.

Another limitation that should be mentioned is the possibility of missing out some relevant studies. In addition, the balance between breadth and depth of analysis was a challenge, as conducting a comprehensive synthesis of the literature and a comprehensive evaluation of validity and reliability

of instruments used in all studies, given the large number of the articles identified and the restraints on resources and time, was not feasible.

Furthermore, yet another limitation may be that some topics that are relevant to the mental health field were not searched for in this review. Examples of such topics are violence in close relationships, as well as abuse, child protection services, female genital mutilation (FGM), criminality and chronic undefined pain. These were omitted because of a lack of resources and a need to limit the range of topics, not because they are less important.

Part 5. Conclusions and implications

An exceptional variation in themes, samples and research methods was found in this review, rendering comparison and further summarizing of results challenging. In line with previous research findings, studies in this review show that immigrants in Norway are diverse in many respects, with differing but often increased risks for self-reported mental health distress. Some groups of immigrants—such as UAMA/URM/UR children/youth and clinical samples of adult refugees—stand out as specifically vulnerable for both mental distress and comorbidity of several disorders.

The review revealed some methodological challenges as well as existing gaps in knowledge. In future research, outcome measurements must be conceptually and statistically validated in the populations studied. The lumping together of ethnic groups should be minimized to assess the realities experienced by them and increase recognition of differences existing within and between immigrant groups. In addition, qualitative studies of immigrants are needed to identify concepts used and perceptions of problem issues that can then be quantified at the group level in quantitative research. Future research should focus more on understanding the picture behind the survey data by combining quantitative and qualitative methods, adapting more prospective and longitudinal research designs with lifespan approach and including user perspectives in the research process more regularly. There is also an urgent need for studies about positive mental health and related aspects such as quality of life, function, well-being and resilience. We need studies that move from rates/prevalence/associations and focus more on promotion/prevention /intervention/treatment.

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Part 7. Tables

TABLE 2.1. Summary of peer reviewed studies from Norway on immigrant mental health from 1 January 2009 to 30 June 2017 (N=65)

Ref.no	Author(s)/ Year	Sample size and composition	RR	Sex	Age	Outcome measure(s)	Research design/ Time of data collection	Instrument(s)	Objective(s)
#111	Abebe et al. 2015	N=10,934 73.2 % ethnic Norwegian, 9.8 % 1st generation immigrants, 17 % 2nd generation with background from Europe, US, the Middle East, Asia and Africa.	97.0%	M/F	C/A	Binge drinking, cannabis and tobacco use	School-based cross-sectional study (2006)	Questions about binge drinking, cannabis and tobacco use, HSCL-6, UCLA Loneliness Scale-5	To assess prevalence and factors associated with binge drinking, cannabis use and tobacco use with adolescents among ethnic Norwegians and ethnic minority adolescents in Oslo.
#141	Alpers and Hanssen 2014	N=145 Medical Unit (MU) and psychiatric Unit (PU) nurses at a hospital in Oslo.	MU- 90% PU- 81%	M/F	A	Self-evaluated cultural competency	Mixed method study	Competency questionnaire	To investigate how medical unit and psychiatric unit nurses assess their own competency regarding patients with minority backgrounds.
#106	Alves et al. 2011	N=902 School children attending grades 5 to 7 from Oslo and Bergen. 47% with minority background, of which 70% Norwegian born.	65%	M/F	C/A	Emotional problems, gender gap, home and school hassles	School-based cross-sectional study (2006–07)	SDQ-S (5 items) Home and school hassles questions in YCC questionnaire	To assess whether the gender gap of emotional problems is found in both majority and minority preadolescents. To investigate the relationship between gender/ethnic group differences and home/school hassles.

#74	Amundsen, EJ. 2012	N=7,343 (15–16-year-old ethnic Norwegians, Iranians, Turks and Pakistanis) N=18,770 Adult cohorts (Norwegians, Iranians, Turks and Pakistanis) N=3,019 (Iranians, Turks and Pakistanis)	88.3% 46% 39.7%	M/F	C/A + A	Drinking frequency	Cross-sectional survey (2000–02) HUBRO and OIH	1 question about drinking frequency	To describe frequency of drinking in two generations of immigrants in Oslo. To study if the frequency of drinking among adult immigrants was associated with acculturation, age, gender, socioeconomic factors and the Muslim faith.
#125	Berg et al. 2010	N=67 (Immigrant patients with dark skin pigmentation from Africa, Asia, South America and southern Europe) N= 66 Norwegians Reference sample (HUBRO, OIH): N=936 (67 immigrants, 869 Norwegians)	-	M/F	A	Vitamin D and psychosis	Catchment area-based cross-sectional study (2002–07) TOP study, UIO	SCID-I, GAF, PANNS, IDS-C Young mania Rating Scale (YMRS)	To determine vitamin D levels among immigrants and Norwegians with psychosis compared to the general population, and their associations to clinical characteristics.
#122	Berg et al. 2011	N=90 Immigrant patients (66% first-generation, 68% from Asia/Africa)	-	M/F	A	Perceived discrimination and psychosis	Catchment area-based cross-sectional study (2002–07) TOP study, UIO	SCID-I SCI-PANSS, GAF Perceived discrimination—self-report questionnaire (5 items)	To investigate if perceived discrimination was associated with the severity of symptoms among immigrants with psychotic disorders.
#76	Berg et al. 2014	N=67 immigrant patients N=66 ethnic Norwegians Reference sample N=936 (67 immigrants and 869 Norwegians)	-	M/F	A	Visible minority status and psychosis	Catchment area-based cross-sectional study (2002–07) TOP study, UIO	SCID-I, SCI-PANSS, GAP	To investigate if migration experience and/or visible minority status affects symptom profiles.

#123	Berg et al. 2015	N=454 69 patients from ethnic minority groups, both first and second generation, 57% from Asia/Middle East and 39% from Africa.	-	M/F	A	Childhood trauma and psychosis	Catchment area-based cross-sectional study (2002–07) TOP study, UIO	SCID-I, SCI-PANSS, GAF, CTQ (Childhood Trauma Questionnaire)	To investigate the experience and effect of childhood trauma in patients from ethnic minorities with psychosis.
#124	Berg et al. 2016	N=174 Immigrants (N=58) were matched (1:2) with participants without a history of migration (N=116). Both first and second generation from Asian (60%) or African (19%) countries, with the rest from Europe and other countries.	-	M/F	A	Abstract thinking and psychosis	Catchment area-based cross-sectional study (2003–11) TOP study, UIO	SCID-I, GAF, PANSS, HDI, Neuropsychological assessments	To assess if human developmental index (HDI) of country of birth is associated with abstract thinking in a group of persons with psychotic disorder and the association with executive functioning and clinical psychosis symptoms.
#140	Berg, JE. 2009	N=1,493 26% with non-western background (primarily Pakistan, Morocco, Somalia, Iran and Iraq).	-	M/F	A	Utilization of acute psychiatric care	Retrospective, catchment area-based study (2000-07)		To determine utilization level of one acute psychiatric care in Oslo among immigrants compared with ethnic Norwegians over an eight-year period (2000–07).
#75	Bjereld et al. 2015	N= 7107 children Parent-reported, children aged 7–13 in Nordic countries.	59.4%	M/F	A	Bullying victimization	Serial cross-sectional comparative study (1996 and 2011) NordChild	1 question about bullying—NordChild questionnaire	To examine parent-reported bullying victimization among children in the Nordic countries at two points in time (1996 and 2011) and compare prevalence between immigrant and native children.
#116	Bjorgo and Jensen 2015	N=34 Unaccompanied refugee minors (13–19 years) from eight countries—Afghanistan, Eritrea, and Sri Lanka being the most frequent origins.	-	M/F	C/A	Early life experiences with interpersonal violence	Qualitative study		To analyze early life narratives of unaccompanied refugee minors related to interpersonal violence at home or at school.

#138	Bjørknes and Manger 2013	N=96 Mothers from Somalia and Pakistan and their children aged 3–9 years.	-	F	A	Treatment outcomes on child conduct problems	RCT Parent Management Training—Oregon Model (PMTO) compared with or waiting-list condition	Self-report assessments at baseline and post-intervention ECBI, PDR, PPI	To measure intervention effects of PMTO on maternal practices and child behavior.
#105	Bratt, C. 2015	N=705 Six student cohorts of adolescents in grades 8–10 with different ethnic backgrounds (Turkish, Pakistani, Vietnamese, Indian, and others) in a city near Oslo.	50–75%	M/F	C/A	Psychological well-being	School-based cross-sectional study (2007–10)	Rosenberg's 10-item scale of global self-esteem, SDQ, Life satisfaction, Social identities scale	To investigate associations between social identities and psychological well-being among adolescents from ethnic minority groups.
#119	Claussen et al. 2009	N=11,070 Inhabitants aged 40, 45 and 59–60 years, including immigrants from developing countries (N=1,130), from Eastern European countries (N=193) and from western countries (N=616).	-	M/F	A	Disability pension and mental distress	Registry-based study (HUBRO 2000-01, Disability pension data 2001–04)	HSCL-10	To investigate if differences in disability pensioning among different ethnic groups were attributable to differences in occupation, income, health, and mental distress.
#108	Dalhaug et al. 2011	N=373 Students in two junior high schools in Oslo—Pakistan (36%); Morocco (9%); Turkey (7%); Somalia (6%); and other countries (42%); of which 69% (N=257) were born in Norway.	82%	M/F	C/A	Cultural competence and depressive symptoms	School-based cross-sectional study (2006) YCC	Ethnic and host culture competence scale, CFS-D	To examine whether school/sociocultural context affects cultural competence and its relationship to depressive symptoms among immigrant school children in Oslo.

#68	Diaz et al. 2015	N=1,606,913 All ≥50-year-old Norwegians and immigrants registered in Norway in 2008. Included 585 immigrant patients from HIC, 213 immigrant patients from OIC and 25,117 Norwegian patients with dementia diagnosis.	-	M/F	A	Frequency of dementia/memory impairment and utilization of PHC	Registry-based study (2008)	To compare Norwegians and immigrants aged ≥50 years with dementia or memory impairment in respect of demographic characteristics, utilization of primary health care services and pharmacological treatment.
#89	Erdal et al. 2011	N=722 Norwegian group (N=605) and the immigrant group (N=117) included lay persons and mental health professionals from Africa, Asia, Eastern Europe, Middle East, western countries including Scandinavia.	-	M/F	A	Beliefs about depression and treatment	Qualitative study	To identify beliefs about depression and its treatment among lay persons (immigrants and refugees) and mental health professionals.
#77	Fadnes et al. 2016	N=1,168,365 Three linked population-based registers for children under 18 years of age in 2008, including 119,251 with immigrant background.	-	M/F	C/A	PHC usage and morbidity	Population based retrospective cohort study (2008)	To assess usage of primary health care (PHC) by children with immigrant background in comparison with non-immigrant children. To describe their relative morbidity burden.

#110	Fandrem et al. 2012	N=156 97 native adolescents and 59 immigrant adolescents (first and second generation with background from Pakistan, Somalia, Kosovo, Middle East and Vietnam) attending school at grades 8–10.	60%	M/F	C/A	Peer victimization and depressive syndromes	School-based cross-sectional study (2007)	HSC-6, Social cognitive mapping (SCM), Victimization/bullying items	To compare different forms of peer victimization in native Norwegian and immigrant young people, and explore whether depressive symptoms and the ethnic composition of peer groups in multicultural classes were related to levels of victimization.
#139	Fuglestad and Miide 2013	N=49 Patient journals	-	M/F	A	Utilization of low threshold mental health services	Qualitative study (2008-09)		To investigate the reasons for utilizing low threshold mental health services by adult immigrants.
#112	Furre et al. 2014	N=288 All adolescents restrained throughout 2008–10, including persons with immigrant background (N=36) N=288 A control group of non-restrained adolescent patients including persons with immigrant background (N=14) The majority were born in Africa or Asia.	-	M/F	A	Characteristics of restrained adolescents	Retrospective case-control design (2008-10)	CGAS and ICD-10 diagnosis	To compare social, mental health, and treatment characteristics of restrained and non-restrained adolescents in acute psychiatric inpatient units.
#81	Guriby et al. 2011	N=20 Informants from Bergen and Oslo	-	M/F	A	Communal proactive coping strategies and well-being	Ethnographic qualitative study (2008-11)		To explore how Tamil refugees in Norway cope with their life situation outside the public services.

#80	Guribye, E. 2011	N=20 Informants from Bergen and Oslo	-	M/F	A	Effects of ongoing man-made disasters in the country of origin	Ethnographic qualitative study (2006-08)	To explore how Tamil refugees in Norway experience threats to collective resources and how this affects collective coping abilities.
#78	Hjellset et al. 2011	N=198 Female Pakistani immigrants with and without MetS in Oslo.	-	F	A	Quality of life, subjective health complaints, and psychological distress	Cross-sectional survey study (2006-07)	To describe health-related quality of life, subjective health complaints, psychological distress, and coping in Pakistani women, with and without MetS.
#127	Iversen et al. 2010	N=94 First-generation immigrant patients, including refugees (N=24) and asylum seekers (N=21) in two acute psychiatric departments. The majority originated from Africa, Asia and the Middle East.	-			Symptoms and expectations for future	A three-year prospective study (2005-08)	To explore and analyse the expectations for the future among populations of immigrants, asylum seekers and refugees.
#126	Iversen et al. 2011	N=94 immigrant patients Including involuntarily (N=30) and voluntarily (N=62) All were first-generation immigrants (48 immigrants, 24 refugees and 21 asylum seekers)	78%	M/F	A	Voluntary/involuntary admissions	A three-year prospective study (2005-08).	To compare clinical and demographic characteristics of immigrant patients with involuntary or voluntary admissions.
#133	Iversen et al. 2014	N=191 Refugees at 12 schools situated in mid-Norway	80%	M/F	A	Trauma/psychological distress and motivation for language acquisition	Cross-sectional study	To evaluate the role of trauma and psychological distress on motivation for foreign language acquisition among refugees.

#115	Jacobsen et al. 2014	N=160 UASC between ages 15–18 from Afghanistan, Somalia and Iran	94%	M	C/A	Psychiatric morbidity	Cross-sectional study (2009–11)	HSCL-25, HTQ, SLE, CIDI	To explore the prevalence of psychiatric morbidity with unaccompanied asylum-seeking children (UASC) at an early stage after arrival in the host country.
#118	Jensen et al. 2014	N=75 UASC who settled in Norway. originating from 12 different countries, the majority from Afghanistan, Eritrea, Somalia and Sri Lanka	-	M/F	C/A	Change in symptoms	Longitudinal, cross-sectional study (T1: 2010-12 and T2:2012-13)	HSCL-37, SLE, CPSS	To examine change in UASC's mental health symptoms after resettlement in a new country from T1 to T2.
#117	Jensen et al. 2015	N=93 UASC from 14 countries (63% Asia, 36% Africa)	-	M/F	C/A	Stressful life events and mental health problems	Cross-sectional study	HSCL-37, SLE, CPSS	To investigate the prevalence of stressful life events and mental health problems among newly-arrived UASC.
#132	Johnson and Asbjornsen, 2009	N=42 21 refugees/immigrants with PTSD mainly from the Middle East, the former Yugoslavia and Chile and 21 control sample of refugees/immigrants.	-	M/F	A	Cognitive impairments	Case control study	MINI, CAPS, IES-R, MADRS, SCL-90-R, WEQ, WAIS, CVLT	To examine mechanisms underlying verbal memory impairments in refugee patients with PTSD.

#63	Keles et al. 2016a	<p>N=918 (T1) N=580 (T2) N=229 (T3) UR—originated from 33 different countries, the majority from Afghanistan, Somalia, Iraq and Sri Lanka.</p>	<p>T1—78% T2—63% T3—39%</p>	M/F	C/A	Daily hassles and mental health	Longitudinal, cross-sectional study (2006-10) YCC	CES-D, YCC Hassles Battery	To understand the longitudinal relationship between depressive symptoms and daily hassles (i.e. general and acculturation hassles)
#64	Keles et al. 2016b	<p>N=895 UR who were granted a residence permit in Norway in the years 2000–10, originating from 33 different countries majority from Afghanistan, Somalia, Iraq, and Sri Lanka.</p>	78%	M/F	C/A	Daily hassles and depression	Cross-sectional study (2006-10) YCC	CES-D, YCC Hassles Battery	To examine potential different models for different categories of hassles (i.e. general and acculturation specific) in relation to depression among unaccompanied refugees
#128	Knutzen et al. 2011	<p>N=375 Restrained adult patients (87 with immigrant background) A control group of non-restrained patients (N=374; 62 with immigrant background)</p>	-	M/F	A	Characteristics of restrained patients	Retrospective study with case-control design (2004–05)		<p>To examine differences in several characteristics between patients who were and were not restrained: age, gender, immigrant background, number and duration of admissions, psychiatric diagnoses, and voluntary or involuntary admission status.</p> <p>To investigate whether any of these variables predicted the use of restraint.</p>

#120	Lien et al. 2010	N=3,019 Immigrants from Turkey, Iran, Pakistan, Sri Lanka, and Vietnam.	39.7%	M/F	A	Psychological distress and pre-migration traumatic experiences	Cross-sectional study (2002) OIH	HSL-10	To examine the association between psychological distress and pre-migration traumatic events among five immigrant groups.
#90	Markova and Sandal 2016	N=105 Refugees with Somali background	33%	M/F	A	Explanatory models of depression and coping strategies	Mixed method study	Vignette, CCD-CI, GHSQ	To identify lay explanatory models of depression among Somali refugees in Norway.
#69	Naess and Moen 2015	N=20 Norwegian-Pakistani families and Norwegian healthcare employees	-	M/F	A	Perception of dementia	Qualitative study		To explore Norwegian-Pakistani families' understanding of dementia in their culturally defined system of cure and care.
#107	Noam et al. 2014	N=2,248 Students in grades 5–8 in Bergen and Oslo, 51 % of whom had immigrant background —73% were born in Norway. Almost half had parents originated from different non-western countries, mostly in Asia and Africa.	70%	M/F	C/A	Emotional and conduct problems	School-based cross-sectional study (2007-09) Ungkul	SDQ, YCC Battery	To assess the differences related to emotional and conduct problems in immigrant versus non-immigrant youth. To assess whether levels of symptoms predict school outcomes.

#129	Opaaas and Hartmann 2013	N=51 Multi-traumatized mental health patients, refugees with background from different countries (Asia, Eastern Europe, and Africa) T1-Pretreatment assessment	70%	M/F	A	Trauma-related personality functioning	Naturalistic, longitudinal, mixed-method study (2006–09)	The Rorschach (RIM), HTQ, HSC-25, WHOQOL-BREF	To gain more in-depth knowledge about trauma-related personality functioning before treatment.
#130	Opaaas and Varvin, 2015	N=54 Multi traumatized mental health patients, refugees with background from Middle East, Balkans, East and Central Africa, Chechnya, China, Vietnam and Afghanistan Asia, Eastern Europe.	75%	M/F	A	Childhood adverse experiences and mental health	Naturalistic, longitudinal, mixed-method study (2006–09)	HTQ, HSCL-25, WHOQOL-BREF	To examine adverse and potentially traumatic experiences (PTEs) in childhood with refugee patients and their relation to mental health and QOL
#131	Opaaas et al. 2016	N=50 One-year follow-up (T2) and three-year follow-up (T3) of same patients.	-	M/F	A	Changes in symptoms and RIM components	Naturalistic, longitudinal, mixed-method study (2006–09)	Rorschach (RIM), HTQ, HSC-25, WHOQOL-BREF	To examine relationships of the RIM components with measures of anxiety, depression, posttraumatic stress, quality of life, employment, and exile language skills over 3 years.

#109	Oppedal B. 2011	N=287 Students in the grade 10 with backgrounds from Turkey, Somalia, Sri Lanka. N=359 Students in grades 5–8 in Oslo and Bergen with the same background.	87.4%	M/F	C/A	Social support, perceived discrimination and mental health	School-based cross-sectional study (2000–01) HUBRO (2007–09) YCC	Perceived discrimination scale, HSCL-10, Social support scale	To investigate ethnic group differences in the association between social support, perceived discrimination and mental health in one adolescent and one preadolescent sample of immigrant children.
#65	Oppedal and Idsoe, 2012	N=566 Multi-ethnic sample of UMR mainly from Afghanistan, Somalia, Iraq and Sri Lanka.	68%	M/F	C/A	Pre-migratory war-related trauma, acculturation and mental health	Population-based cross-sectional study (2006–11)	CES-D, IWRTE, Host and Heritage Culture Competence Scale Perceived discrimination scale, Social support scale, Conduct problems scale	To investigate the combined effects of pre-migratory war-related trauma and indices of current acculturation on mental health.
#66	Oppedal and Idsoe, 2015	N=895 UMR mainly from Afghanistan, Somalia, Iraq and Sri Lanka.	78.4%	M/F	C/A	Social support, acculturation/ discrimination and mental health	Population-based cross-sectional study (2006–11)	CES-D, IWRTE, Host and Heritage Culture Competence scale, Perceived discrimination scale, Social support scale	To investigate the impact of social support from family abroad and friends on acculturation, discrimination and mental health among unaccompanied minors.
#72	Puzo et al. 2017	N=23,073 Norwegian national longitudinal registers including all suicide cases and 373,178 controls.	-	M/F	C/A + A	Suicide risk	Registry study (1960–2012)	Register data	To investigate differences in suicide risk among immigrant population compared to native Norwegians.
#121	Saheer et al. 2013	N=1,047 Immigrants with background from Turkey, Sri Lanka, Iran, Pakistan and Vietnam.	39.7%	M/F	A	Prevalence and Risk factors for SAD, S-SAD, Summer SAD	Cross-sectional survey study (2002–03) OIH	SPAQ (W-SAD, S-SAD, Summer-SAD), HSCL-10	To investigate the associated risk and protective factors on prevalence of winter SAD (W-SAD), sub-syndromic SAD (S-SAD) and Summer-SAD among immigrants in Oslo.

#67	Seglem et al. 2011	N=414 URM with background from 33 different countries, mainly Afghanistan (N=116), Somalia (N=74), Sri Lanka (N=41) and Iraq (N=43).	62%	M/F	C/A	Level and predictors of depression	Cross-sectional survey study (2000–09) YCC	CES-D	To study the level and predictors of depressive symptoms in URM after resettlement.
#113	Seglem et al. 2014	2 samples: N=223 Resettled UR with background from different countries, mainly Afghanistan, Sri Lanka and Iraq. N=928 High school sample including ethnic minorities from 38 different countries and majority youth.	-	M/F	C/A	Daily hassles, life satisfaction and depression	Cross-sectional survey study (2011) YCC	CES-D, Life satisfaction (5 items), Daily hassles (7 items), The Brief COPE	To examine daily hassles and coping dispositions in relation to life satisfaction and depressive symptoms.
#84	Shakeel et al. 2015	N=749 Pregnant women (59% ethnic minorities) attending Child Health clinics in Oslo.	74%	F	A	Prevalence of Depression with pregnant women	Population-based, prospective cohort study (2008–10)	EPDS	To identify the prevalence of depression in pregnancy and associations with ethnicity and other risk factors.
#136	Stenmark et al. 2013	N=81 Refugees and asylum seekers fulfilling the DSM-IV criteria for PTSD, randomized for either NET (N=51) or TAU (N=30)	-	M/F	A	Treatment outcomes with NET and TAU	RCT study Comparing NET with TAU at T1, T2 and T3.	PTSD scale, HSD, MINI	To compare effect of NET compared with TAU when applied to refugees and asylum seekers with PTSD in general psychiatric outpatient care.

#137	Stenmark et al. 2014	N=54 Refugees and asylum seekers who had completed a treatment program for PTSD.	-	M/F	A	Patient characteristics and treatment outcomes	Retrospective, descriptive study	PTSD scale, HSD, MINI	To investigate if patient characteristics related to treatment outcome of PTSD in refugees and asylum seekers.
#79	Stige & Sveaass 2010	N=142 Refugees with Tamil and Acehnese origin	-	M/F	A	Ongoing/former stressors and mental health	Cross-sectional survey study (2005)	PTSS 12, GHQ-28, ICG, Post-Migration Living Difficulties Questionnaire, SLE, HTQ	To explore possible associations between ongoing and former stressors and mental health problems
#86	Straiton et al. 2014	N=2,962,408 The National Population Register data including all residents in Norway, of whom 12.1 % were immigrants. The five largest immigrant groups (from Poland, Sweden, Germany, Pakistan and Iraq) compared to Norwegians.	-	M/F	A	Immigrants' utilization of PHC for mental health problems	Population registry study (2008) NPR and HELFO		To rate immigrants' use of primary health care services for mental health problems compared with Norwegians, and the association between length of stay, reason for immigration and service use.
#87	Straiton et al. 2016a	N=53,262 Immigrant women from Poland, Sweden, Germany, Pakistan and Iraq compared to Norwegian women.	-	F	A	Immigrant women's utilization of PHC for mental health problems	Population registry study (2008) NPR, HELFO, NorPD		To explore treatment options in PC for immigrant women with mental health problems compared to non-immigrant women.
#88	Straiton et al. 2016b	N=53,747 The total sample included six largest immigrant groups from refugee giving countries (Iraq, Somalia, Bosnia and Herzegovina, Iran, Kosovo and Afghanistan).	-	M/F	A	Refugees' utilization of PHC services for mental health problems	Population registry study (2008) NPR, HELFO, NorPD		To determine whether refugees use primary health services for mental health problems and use psychotropic medicine more often than non-refugees from the same RGC.

#134	Theodorescu et al. 2012a	N=61 Refugee outpatients with different backgrounds.	-	M/F	A	Psychiatric morbidity and traumatic events	Cross-sectional study (2008-09)	SCID-PTSD, MINI, HSCL-25, IES-R, LEC	To describe the prevalence and symptom load of psychiatric disorders in refugees and investigate the relationship between exposure to traumatic events and the severity of symptoms and post-migration stressors.
#135	Teodorescu et al. 2012b	N=55 Refugee outpatients with different backgrounds	-	M/F	A	Psychiatric morbidity and post-traumatic growth	Cross-sectional study (2008-09)	SCID-PTSD, MINI, PTGI-SF, IES-R, HSCL-25, WHOQOL-BREF	To describe posttraumatic growth, posttraumatic stress symptoms, depressive symptoms, post-migration stressors, and their association with quality of life.
#70	Tingvold et al. 2012 a	N=9 Vietnamese refugee families including 18 parents and 14 adolescents	-	M/F	C/A + A	Parenting styles and adolescents' well-being	Qualitative study (2006)		To investigate parenting strategies and how these might constitute a resource and protective factor against mental health problems.
#71	Tingvold et al. 2012b	N=9 Vietnamese refugee families including 18 parents and 14 adolescents	-	M/F	C/A + A	Extended family and acculturation	Qualitative study (2007)		To investigate the influence of extended family on acculturation process and intergenerational perspectives.
#82	Tingvold et al. 2015	N=61 Vietnamese refugees Assessed at	T2—90% T3—57%	M/F	A	Psychological distress and acculturative hassles	Longitudinal cross-sectional study (T1:1982, T2:1985, T3:2005-06)	AHQ, SCL-9-R, WHOQOL	To investigate longitudinal predictors of acculturative hassles.

#83	Vaage et al. 2010	N=80 T3-Vietnamese refugees, 57% of the original cohort previously interviewed in 1982 (T1) and 1985 (T2). A comparison group of 973 Norwegian adults.	57%	M/F	A	Psychological distress	Cross-sectional longitudinal study (T3:2005-06)	SCL-90-R	To investigate the long-term course and predictors of psychological distress among Vietnamese refugees in Norway.
#73	Vaage et al. 2011	N=194 Including Vietnamese refugee parents (N=88) and their children (N=106). Information from one or both parents on arrival in 1982 (T1), at follow-up in 1985 (T2), and 23 years after arrival (T3) was included.	-	M/F	C/A + A	Psychological distress	Cross-sectional longitudinal study (T1:1982, T2:1985, T3:2005-06)	GSI, SCL-90-R, SDQ	To study the association between the psychological distress of Vietnamese refugee parents and their children after 23 years' resettlement.
#85	Varvin and Aasland 2009	N=966 Norwegian physicians working both within PHC and SHC.	69%	M/F	A	HPs' competency	Cross-sectional survey study (2006)	11 questions about competency	To explore how physicians, relate to and perceive their competence for treating refugee patients.
#114	Vervliet et al. 2014	N=204 UM in Norway at transit centers with background from Afghanistan, Somalia and elsewhere) 2009–11	50%	M/F	C/A	Mental distress	Cross-sectional study (2009-11)	HSCL-37A, SLE, HTQ	To examine the mental health of UM shortly after their arrival in Norway.

TABLE 2.2 Summary of grey literature from Norway on immigrant mental health from 1 January 2009 to mid-August 2017 (N=14)

Ref. no	Author(s)/ year/	Type	Sample size and composition	Sex	Age	Outcome measures	Research design	Instruments	Objective(s)
#101	Dabo, FJ. 2015	Master thesis	N=27 Professionals— clinicians, mental health services providers, school advisers, social workers and organizations.	M/F	A	Access to mental health services	Qualitative study (semi structured individual interviews And focus groups)		To ascertain if the current mental health service provisions are adequate for refugees in Norway.
#95	Egeland, MK. 2010	Psychology thesis (Hovedopp-gave)	N=5 Earlier psychiatric patients with Somali background. N=5 secondary interviewees.	M M/F	A	Patients' own understanding of mental health problems	Qualitative Study (interviews)		To explore the informants' own explanation and meaning relating to own suffering.
# 94	Elstad et al. 2015	Research Report	N=4.7 million NPR -all consultations and admissions at the somatic and mental health services in 2008–11.	M/F	C/A A	Utilization rates for SHC	Registry study		To study immigrants' use of specialist health services and analyze the reasons behind contacts with the specialist.

#93	French, SD. 2009	Master thesis	N=2,458 Immigrants with background from Sri Lanka, Iran, Turkey, Pakistan and Vietnam.	M/F	A	Musculoskeletal pain and psychological distress	Descriptive cross-sectional study (2002- OIH)	HSCl-10	To assess prevalence of musculoskeletal pain. To study association between chronic musculoskeletal and psychiatric disorders.
#102	Heggebø, MB. 2016	Master thesis	N=10 Employees working with asylum-seeker children in health care, kindergartens, schools, child care and competence centers.	M/F	A	Mental health of asylum-seeker children and mental health care services	Qualitative study (interviews)		To investigate how asylum-seeker children who need mental health care are attended to by the public health care services.
#98	Hussain, M. 2010	Master thesis	N=6 Young adults with immigrant background from Afghanistan, Pakistan, Somalia, Sri Lanka and Morocco.	F	A	Cultural expectations and mental health	Qualitative study (interviews)		To explore how living with different cultural expectations and values from community and home environment affects mental health.

#104	Ingebretsen et al. 2015	Research Report	N=81 Relatives of immigrants with dementia, focus groups with immigrants aged 50 +, focus groups with staff in health and care services from 23 countries.	M/F	A	Dementia: attitudes, needs, experiences	Qualitative study (interviews and focus groups)	To obtain new knowledge about elderly immigrants with dementia, chiefly: – Attitudes to dementia. – Needs for knowledge and information. – Experiences in meeting with the health and care services. – The family's coping with dementia. – Interaction between family care and public services.
#97	Kermashani, CA.2013	Master thesis	N=5 Kurdish asylum seekers.	M	A	Own experience and understanding of mental health	Qualitative study (interviews)	To explore Kurdish asylum seekers' experiences and describe their mental health.
#103	Kolstad and Thorud, 2010	Article	N=6 Asylum seekers at two reception centers mid-Norway.	M/F	A	Well-being and mental health	Qualitative study (interviews)	To explore how living conditions at a reception center influence well-being and mental health.
#100	Mekonen, L. 2011	Master thesis	N=6 Religious leaders with immigrant background from Oslo of Christian and Muslim faith.	M	A	De-stigmatization of mental health problems	Qualitative study (interviews)	To explore their perceptions of mental health problems and their possible contribution to de-stigmatization of mental health problems in immigrant communities.

#91	Strandebø, C. 2010	Psychology thesis (Hovedoppgave)	N=366 School children grades 5-8 from 16 schools in Oslo – 48% with immigrant background (two parents born abroad—majority in Asia and Africa.	M/F	C/A	Personality factors and emotional problems	School-based cross-sectional survey (UngKul, 2006–09)	DEQ, DAS, SDQ, PSI	To investigate individual differences in personality dimensions (self-criticism/dependency). To investigate how these factors can predict emotional problems in children with majority and minority background.
#92	Teigen, K. 2010	Master thesis	N=486 High school students with different nationalities at one school.	M/F	C/A	Social support and aggression/serious conduct problems	School based cross-sectional survey (2007- UngKul)	422 questions related to mental health, acculturation, stress and coping, CASS	To investigate if social support in various strains of ethnic Norwegian youths and youths from immigrant backgrounds can predict aggression and serious behavioral problems.
#99	Waiås, YT. 2013	Master thesis	N=4 Informants with non-western immigrant background.	M/F	A	Attitudes to mental disorders	Qualitative study (interviews)		To explore how prominent openness/closedness is regarding mental disorders among non-western immigrants.
#96	Øverland, G. 2012	PhD thesis	N=30 Three samples of resilient Cambodians both in Norway and in Cambodia.	M/F	A	Post traumatic survival and resilience	Qualitative study (interviews)		To discover what successful survivors of the Khmer Rouge have found instrumental for their survival and mental health.

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