Associations Between Post-migration Stressors and Psychiatric Disorders in Adult Refugees in European High Income Countries. A Systematic Review

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Abstract

Background: Refugees and asylum seekers have a high prevalence of psychiatric disorders such as posttraumatic stress disorder (PTSD), anxiety and depression. Associations between the number of traumatic events and psychiatric disorders have been reported in literature, but knowledge on the influence of post-migration stressors on mental health outcomes in host countries remains scarce.

Method: Four databases in the field of public and mental health were systematically searched. From a total of 2,456 studies found, 1,777 were included for title and abstract screening and 61 full texts were separately screened for eligibility by 2 authors. Out of these studies, 23 studies were included in this systematic review. A narrative synthesis was undertaken.

Results: The overall findings showed that post-migration stressors have a significant impact on mental health outcomes. Especially uncertain legal status, missing social support and unemployment were shown to negatively influence mental health, but results vary among the different psychiatric disorders, i.e. post-traumatic stress disorder, depression and anxiety.

Discussion: Post-migration stressors can contribute to the high prevalence rates of psychiatric disorders in refugees in European high-income countries. However, results must be interpreted with caution because of the heterogeneous study populations included and the variety of post-migration stressors. None of the studies considered the effect of mental disorders on the perceived severity of post-migration stressors.

Background

To date, more than 80 million people have been forcibly displaced worldwide (1). From 2014 to 2017, nearly 4 million asylum seekers arrived in one of the member states of the European Union, with a peak in 2015 and 2016. As of 2017, the number of new arrivals has declined (2). Asylum seekers are persons who left their country and seek international protection, still awaiting a decision on their application for refugee status (3). Whereas, refugees are often defined according to the convention relating to the status of refugees or similar national recognition procedures as persons who are in fear of being persecuted and have crossed a national boarder (4).

Frequently, the terms are not well defined in the literature (5). For this review, it was decided to use the term “asylum seeker” for persons who are still awaiting a decision on their claim for asylum, whereas “refugees” are persons who are recognized by state authorities and have a legal entitlement.

Refugees and asylum seekers are highly burdened with psychiatric disorders because of traumatic experiences before, during and after their flight. Many studies have explored prevalence rates of posttraumatic stress disorder (PTSD), depression and anxiety as common mental disorders in refugee populations. According to the ICD-10 classification (6), PTSD is defined as a delayed mental reaction to a stressful threatening event. Depression is characterized by low mood, decreased energy and activity, whereas anxiety disorder is defined as a disorder that is evoked in well-defined, non-hazardous situations (6). Literature has estimated a prevalence of 4.4–86.0 % for PTSD and 2.3–80% for depression, whereas, anxiety disorders had a higher estimated prevalence of 20.3–88.0%. Differences in the prevalence rates depend on study population, study quality, legal status, length of stay and differences in host countries (7).

Many studies show an association between traumatic events and mental illness. The likelihood of developing depression, PTSD or anxiety disorder significantly increases with the number of traumatic events experienced (7–10). However, clear results on the association between post-migration stressors and mental health outcomes are missing. Identifying and measuring post-migration stressors is difficult. To date, no standardized assessments are available. The Post-Migration Living Difficulties Checklist (38) is often used and adjusted to cultures, which makes it hard to compare different reception conditions.

It is also important to consider the situation of refugees and asylum seekers as a specific subpopulation. Many studies have examined people with a migration background, but they have not differentiated sufficiently between different types of migration (11).

Social determinants and related health inequalities are widely studied within and between populations (12). Health inequalities result from unequal distribution of power, money and resources which have an influence on socio-economic factors such as income, wealth, education, housing situation and access to health care (13). In particular, mental health is influenced by social inequalities in the social, economic and physical environment people live in (14). The social and political conditions in host countries can lead to material deprivation, uncertainty, social exclusion and discrimination in the refugee population, and can thus constitute a risk for traumatic experiences and worse mental health outcomes (15). A life course epidemiological perspective (16) can contribute to a better understanding of migrant health and the influence of stressors in different migration stages. Individual, environmental and contextual exposures in the new country of residence can influence refugees’ and migrants’ health directly as well as their descendants’ health (16).

It was shown that ongoing stressors in the post-migration stage play a role for mental health trajectories. Stressors contributing to the development of psychiatric disorders include: language barriers (7, 9), missing social support in host countries (17, 18), socio-economic difficulties (7, 19) and the asylum procedure (8, 10). An uncertain legal status in particular can affect the integration of refugees and asylum seekers in host countries (20, 21).

In order to analyse the situation of refugees and asylum seekers in European countries and the potential post-migration stressors they are facing, a systematic review was conducted to answer the following question: What is the association between post-migration stressors on PTSD, anxiety and/or depression in adult refugees in European high income countries?

Methods

We conducted a systematic review according to the PRISMA Statement (22). No review protocol was published before.

Four databases in the field of public health and psychology including PubMed, PsycInfo, PSYNDEX and LIVIVO were searched by ACN for relevant literature in February 2019. The search was updated between October 31 and November 4, 2019. Different search terms regarding study population, mental health and post-migration stressors were combined. Different types of outcome and exposure search terms were used to get as broad an overview as possible (Table 1)

We included quantitative primary studies on refugees and asylum seekers aged 18 or older, which were conducted in European high income countries. Due to the lack of comparability of social conditions and asylum procedures in the host countries, studies conducted outside of Europe were excluded. The maximum length of stay in the destination country should not exceed ten years. Only studies with outcomes on depression, anxiety and PTSD were considered. Mental health outcomes had to be defined according to ICD-10, DSM IV or DSM V, and validated scales and checklists were used which allowed conclusions about the severity of mental health symptoms.

The measurement of post-migration living difficulties had to be described clearly. Studies were eligible if they were published in English or German from 1990 to 2019.

Studies were excluded if internally displaced persons or minors were included in the study design. Intervention studies, study protocols, comments, qualitative studies and case studies also were excluded.

Titles and abstracts were screened for inclusion and exclusion criteria by two authors separately. ACN screened all articles, L-MG and VSB half of them. Eligible articles were then read in full by two authors each (ACN screened all articles, and LM und VSB half of them). Discrepancies were discussed among the three main authors.

Relevant data was extracted using a data extraction form developed by the main author (ACN). Data was structured by country of origin of the study population, country of study, mental health outcome, reported post-migration living difficulties and main results relevant to the current research question. Study results were clustered and compared in groups of post-migration living difficulties. A narrative synthesis was conducted. A meta-analysis was not done because of differences in the measurement of post-migration living difficulties and heterogeneity of study populations.

For critical appraisal of the studies, we used the Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies from the National Heart, Lung and Blood Institute due to the cross-sectional or cohort design (23). The assessment was conducted by two authors. ACN assessed all the studies, VB und L-MG half of them. Disagreements were resolved within the publication group to minimise the risk of bias across studies. Low-quality studies were not excluded to gain a broad view on different post-migration living difficulties on the mental health of refugees and asylum seekers, although their results were taken with caution.

Results

Study characteristics

Study selection is shown in Figure 1.

After analysis of full texts, 23 studies were included in the review. 21 studies had a cross-sectional design. Two studies with a longitudinal design were included (24, 25). Most studies were conducted in Switzerland (n=5), followed by the Netherlands (n=4), Norway (n=3), UK (n=3), Denmark (n=2), Germany (n=2) and Sweden (n=2), while 2 studies (26, 27) had study sites in Germany, Italy and the UK. Table 2 presents the characteristics of the included studies.

In most studies, the Harvard Trauma Questionnaire (HTQ) and the Hopkins Symptoms Checklist (HSC) were used to assess PTSD, depression and anxiety. Apart from the HTQ and the HSC, three studies used the post-traumatic diagnostic scale (28–30), two studies used the composite international diagnostic interview (31, 32) or a structured clinical interview (33, 34). The Patient Health Questionnaire was used in two studies (35, 36). In one study (37), the Survivor of Torture Assessment, the Present State Examination (PSE) and the DSM-III-R crieria for PTSD and depression were used. Mueller et al. (2017) used the ICD-10 diagnosis, as this was a database study (29). In the studies of Priebe et al. (2013) and Bogić et al. (2012) the Mini International Neuropsychiatric Interview was used to assess mental disorders (26, 27).

The population included was not homogenous because of different migration backgrounds in the target countries, but most studies included persons from the Middle East and from African countries. Three studies included refugees from Eastern Europe (26, 27, 33, 34), and one included refugees and migrants from Turkey (29).

Sample sizes ranged from 854 participants in three different countries (26, 27) to 55 refugees in a Norwegian study (34), with a mean of 276 participants per study.

A variety of post-migration stressors was investigated. Post-migration stressors were collected using mainly a culturally adapted version of the Post-Migration Living Difficulties Checklist (38). 11 studies reported specific results for legal status (25, 27, 29–32, 35, 39–41), 9 for social support (24, 25, 32, 34, 34, 36, 37, 39, 42), 6 for unemployment (24, 25, 32–34, 43), and 3 for social integration (27, 28, 34). Other factors such as cultural loss (17), perceived discrimination, homesickness and feelings of shame (29) were taken into account by only a few studies.

The methodological quality of studies varied. Most studies fulfilled the assessment criteria. 20 scored positive for 6-9 criteria, 3 met 4 or fewer criteria. All studies are shown below, but results must be taken with caution.

Legal status and length of stay

All studies reported a significant impact of an uncertain legal status on mental health outcomes, but results varied for PTSD, depression and anxiety. Asylum seekers with an uncertain residence status scored higher for PTSD, depression and anxiety (30, 31, 35, 39, 44). In one study (40), an effect was found for depression and anxiety, but not for PTSD. By comparison, one German study, conducted in a clinical setting, found no difference in the prevalence of depressive disorders between migrants with a residence permit and asylum seekers. However, asylum seekers suffered from PTSD more often (29). After comparing two groups of Iraqi asylum seekers in the Netherlands, Laban et al. (2004) found a longer length of stay to be negatively associated with anxiety (OR 2.23, 95% CI: 1.15-4.08), depression (OR 1.84, 95% CI: 1.02-3.35) and the development of one or more psychiatric disorders (OR 1.27, 95% CI: 1.15-4.08) (31). Other studies found no significant association between length of stay and PTSD symptoms (41) or the total symptom score (44). Apart from the length of stay, asylum procedures have an influence on the development of one or more psychiatric disorders (32). A cohort study conducted in the Netherlands (25) which included 410 refugees at t1 and 172 at t2 (seven years later) reported a significant improvement of mental health outcomes after obtaining a residence permit. Changes in PTSD scores, depression and anxiety symptoms were mediated by changes in the living conditions, employment situation and social support.

Social Support

Social support is considered to be a key factor for mental-health well-being in refugees and asylum seekers (24, 25, 32, 33, 36, 37, 39, 42). In the late 1990s, Gorst-Unsworth et al. (1998) found an association between high scores on the PSE Index, which was used for diagnosing PTSD and depression, and a low level of affective support ($p<0.01$), separation from children ($p<0.01$), lack of contact with political organisations in exile ($p<0.01$), low confidant support ($p<0.01$) few social activities ($p<0.01$) and the influence of racial attacks in exile on the diagnosis of depression (37).

As mentioned above, better mental health outcomes can possibly be explained by obtaining a residence permit, which means an improvement in social conditions and support (25). In another study, PTSD and depression were correlated with having a weak social network and poor social integration (33). In a longitudinal study on 139 tortured refugees at two different times, Carlsson et al. (2006) pointed out that social relationships were significantly associated with higher depression scores and PTSD (24). In a later study, on 63 refugees from an outpatient clinic, social relations were a predictor for anxiety, depression and PTSD (42). Laban et al. (2005) examined the relationship between family separation and suffering from one or more psychiatric disorders. Respondents who reported family issues had a higher chance to suffer from depression (OR 1.12, 95% CI: 1.01-3.15) and at least one psychiatric disorder (OR 1.12, 95% CI: 1.02-1.24) but not for anxiety (32). Gerritsen et al. (2006) reported similar results but showed a higher likelihood to develop mental health problems: Refugees and asylum seekers with less social support had a higher chance to suffer from PTSD (OR 3.51, 95% CI: 1.63-7.53) and depression and anxiety symptoms (OR 2.78, 95% CI 1.36-5.65) (39). These results were partly supported by a Swiss cross-sectional study, where a regression model revealed a positive association between trauma and severity of PTSD, but lack of social support and post-migration stress were not associated with severity of PTSD (36).

Social integration and employment

Unemployment and poor or no social integration have an influence on different mental health outcomes. Laban et al. (2005) reported that refugees who were unemployed or worked below their qualification had a higher chance to suffer from one or more psychiatric disorders (OR 1.44, 95% CI: 1.15-1.81) or depression (OR 1.32, 95% CI: 1.08-1.61), but this pattern was not seen for anxiety (32). Carlsson et al. (2006) confirmed these results (24). They found an influence of unemployment on PTSD and depression scores, whereas Lavik et al. (1996) reported a significant association between unemployment and anxiety and/or depression ($p<0.02$) (43). In a Norwegian study, the authors pointed out that unemployment even showed the strongest association with psychiatric morbidity and symptom severity compared to other post-migration stressors (33).

As a comparative study with migrants from the Balkans and refugees showed, employment was associated with a lower symptom level in both groups, and feeling integrated with less severe symptoms. Employment (OR 0.60, 95% CI: 0.44-0.81) and proficiency in the language of the host country (OR 0.69, 95% CI: 0.52-0.92) seemed to act as protective factors for mental health (27). The effect can also be described vice versa. Mental health can be negatively associated with integration efforts. Schick et al. (2016) gave evidence that PTSD and depression influence social integration of refugees negatively (28).

General results

Some studies reported overarching findings on the influence of post-migration stressors by building an index on the mental health of refugees. All studies reported a significant influence of post-migration stressors on mental health outcomes, but prevalence of mental disorders differed between countries (26). Two Dutch studies showed associations of post-migration stress with psychopathology in general (32) as well as regarding various specific health outcomes, e.g. chronic conditions (39). In comparison, a Swedish study (45) showed that post-migration stressors were a significant predictor only for depression and PTSD, but not for anxiety.

Two studies from Switzerland conducted at the same outpatient clinics (41, 46) with 134 treatment-seeking refugees and asylum seekers mostly from Turkey, Iran and Sri Lanka reported a significant association of trauma exposure and post-migration living difficulties (PMLD) PTSD and depression. In one of the studies, PMLD were a significant predictor for PTSD (41).

Discussion

Our analysis of the available research studies shows that in general, a distinct association between post-migration stressors and deteriorated mental health outcomes in refugees and asylum seekers in European high income countries can be detected. A higher risk for developing mental illness was shown for legal status, social support, employment and social integration alike. It can therefore safely be assumed that post-migration stressors contribute to the high prevalence rates of psychiatric disorders in refugee and asylum seeker populations (26). However, any assumption of a causal relationship should be taken with caution. In all the studies reviewed, post-migration stressors were considered influencing factors for mental disorders while effects of mental disorders on

the perceived severity of post-migration stressors were not shown. Moreover, it can be assumed that psychiatric disorders can act as a barrier to integration, as was shown by Schick et al. (2016) (28).

This review can confirm the results of a recently published meta-analysis by Hou et al. (2020) (47), that showed that post-migration stressors were associated negatively with mental health outcomes. Stressors regarding interpersonal interactions and combined subjective, interpersonal and material stressors were associated with anxiety, depression and PTSD, whereas subjective daily stressors were positively associated only with anxiety and PTSD. Furthermore, our synthesis highlights the importance of a secure legal status, possibilities for social integration and opportunities on the labour market in European high income countries for the mental well-being of asylum seekers and refugees.

In all studies, the legal status had an influence on mental health. However, the results vary among PTSD, depression and anxiety. Five studies (30, 31, 35, 39, 44) showed an effect of legal status on PTSD, depression and anxiety, but one (40) showed an effect on depression and anxiety, but not PTSD. One study reported no effects on depression and anxiety, but showed that asylum seekers suffer from PTSD more often than migrants with a resident permit (29). An improvement in mental health was seen after obtaining a residence permit. This could be explained by changing the living circumstances because a secure legal status facilitates active participation in the social environment in the host country (48). Interestingly, some studies reported an effect of the length of stay on mental health. It was hypothesized that a longer stay in the host country without a secure residence status leads to worse mental health, as the length of stay may encourage chronicity of psychiatric disorders. An Australian study (49) reported refugees with a longer period of resettlement were affected more strongly by psychological disorders, and a study from the USA (50) showed that refugees with a longer length of stay were likelier to suffer from psychiatric disorders.

Clear results were seen for social support. In all studies, social support had a significant influence on the development of a psychiatric disorder. This is also reported by a systematic review on clinical populations with mental disorders (51) and studies from outside the EU on refugees (18). Böge et al. (2020) (52) found a difference between types of social support and their effect on mental health in different host countries. Remarkably, Shelton et al. (2017) (53) highlighted the moderating role of cultural orientation on the association between perceived social support and mental health in a group of college students. Both the influence of types of social support in host countries and the moderating role of cultural differences should be considered by future studies to explore the association between social support and mental health in refugee populations more thoroughly. Furthermore, the reverse effect of mental health on perceived social support should be investigated more in more detail, as pointed out by Wang et al (2018) (51).

As was shown, social participation, particularly the employment situation, is associated with the development of a mental disorder. This seems to be independent of the legal status, as pointed out by Bogić et al. (2012) (26), who compared Balkan migrants from the Balkans and refugees. This effect was also seen in autochthonous populations, as in a sample from Germany (54). A review by Niemi et al. (2019) (48) highlighted the importance of social participation at different levels. Structural and social integration as well as community involvement by refugees and asylum seekers have a positive impact on their psychosocial well-being and can reduce psychosocial stress.

It should be pointed out that all results presented here must be taken with some caution. On the one hand, heterogeneous populations were included in most studies. On the other hand, post-migration stressors were not systematically recorded in some studies. This makes it difficult to compare results. Neither the survey of single factors nor the PMLD index can provide information on the perceived severity of post-migration stressors. Additionally, the situation in the host countries and the situation of different migrant population differs. This can lead to differences in prevalence rates (7).

Conclusions

This systematic review indicates that psychiatric disorders in adult refugees in European high income countries are influenced strongly by post-migration stressors such as an uncertain legal status, integration difficulties, lack of employment and missing social support. Our results must, however, be taken with some caution because of methodological difficulties. Furthermore, reverse effects of post-migration stressors on mental health were not investigated. We suggest that future studies should investigate the influence of psychiatric disorders on integration efforts of refugees in the host countries.

Abbreviations

BPRS – Brief Psychiatric-Rating-Scale

BSI – Brief Symptom Inventory

CAPS – Clinical Administered PTSD Scale

CIDI – Composite International Diagnostic Interview

DERS – Difficulties in Emotion Regulation Scale

DSM – Diagnostic and Statistical Manual of Mental Disorders

Duke-UNC FSSQ – Duke-UNC Functional Social Support Questionnaire

EU – European Union

GAD-7 – Generalized Anxiety Disorder Scale-7

GAF – Global Assessment of Functioning

HDRS – Hamilton Depression Rating Scale

HSC – Hopkins Symptom Checklist

HTQ – Harvard Trauma Questionnaire

ICD – International Statistical Classification of Diseases and Related Health Problems

IES-R – Impact of Event Scale-Revised

ITQ – International Trauma Questionnaire

LEC – Life Events Checklist

LSC-R – Life Stressor Checklist - Revised

MIGSTR10 – Assessment of Migration- and Acculturation-associated Stressors

MINI – Mini-International Neuropsychiatric Interview

PC-PTSD – Primary Care Checklist for PTSD

PDS – Posttraumatic Diagnostic Scale

PHQ-9 – Patient Health Questionnaire

PMLD – Post-migration Living Difficulties

PSE – Present State Examination

PTGI-SF – Posttraumatic Growth Inventory – Short Form

PTSD – Posttraumatic Stress Disorder

PTSS-10 – Posttraumatic Stress Scale

SCID-PTSD – Structured Clinical Interview for DSM-IV-TR PTSD Module

SCL-90 – Symptom Checklist-90

SF-36 / SF-12 – Short Form 36 / Short Form 12

SIDES – Structured Interview for Diagnostic of Extreme Stress

SSQ – Short Form Social Support Questionnaire

STAR – Survivor of Torture Assessment Record

UK – United Kingdom

WHOQOL – World Health Organization Quality of Life

Declarations

Ethical approval and consent to participate not applicable

Consent for publication not applicable

Availability of data and materials All data generated or analysed during this study are included in this published article

Competing interests The authors declare that they have no competing interests.

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Authors' contributions ACN and CH designed the systematic review. ACN, L-MM und VSB conducted the systematic review and the critical appraisal of the study. ACN prepared the manuscript. All authors contributed to the data interpretation and revised the manuscript. All authors approved the final version of the manuscript.

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Tables

Table 1: Search terms

Study population	Refugee* OR asylum seeker*
Outcome measures	Psychological disorder
	Mental disorder
	Mental health
	Depress*
	Trauma
Exposure measures	Stressor
	Living situation
	Social condition
	Legal status
	Accommodation

Table 2: Characteristics of the included studies

Author and year	Study Design	Sample	Country of Origin	Country of Study	Health determinants	PMLD	Outcomes of Interest	Results
Bogic et al., 2012	Multicenter survey	N=854 participants (n=255 in Germany, n=297 in Italy and n=302 in UK) aged between 18 and 65 years who experienced at least one traumatic war-related event	Former Yugoslavian countries	Germany, Italy, UK	Mental disorders	Traumatic experience before, during and after war; education, employment, residence status, separation from family, difficulties obtaining a work permit, financial difficulties, inadequate accommodation, difficulties assessing medical care	LSC-R, Structured Interview about possible post-migration stressors, MINI	Mood disorders and anxiety disorders were associated with post-migration stressors. Prevalence differs between countries
Carlsson et al., 2006a	Longitudinal Study	N=139 participants who were exposed to torture	Iran, Iraq, Lebanon	Denmark	PTSD, Anxiety, Depression	Torture, family separation, mental and physical complaints	HTQ, HSCL	High emotional distress at follov up; social relations and unemployment were predictors for mental healtl symptoms
Carlsson et al., 2006b	Cross-sectional study	N=63 male tortured refugees	Iraq, Afghanistan, Iran	Denmark	PTSD, Anxiety, Depression, Health related quality of life	Language ability, Citizenship, Income, Employment, Income / Financial security, , Social network, Belonging to Denmark, Discrimination, Religious practice	HTQ, HSCL HDRS, WHOQOL	Social relations are an important predictor for Depression
Carswell et al., 2011	Cross-sectional study	N=47 Refugees and Asylum Seekers	Middle East, Africa, Europe, Asia, South America	UK	PTSD, Depression, Anxiety	Asylum status, experience of detention, language ability, post-migration and asylum related problems, Social Support	HTQ, HSCL The Demographic and Post-Migration Living Difficulty Questionnaire, SSQ6, Duke-UNC FSSQ	PTSD symptom were associated with adaptation difficulties, loss of culture and support, emotional distress were associated with loss of culture and support; post-migration stressors explair the variance in PTSD symptom
Gerritsen et al., 2006	Cross-Sectional Study	n= 178 Refugees from three municipalities; n=232 asylum seekers from reception centers	Afghanistan, Iran, Somalia	Netherlands	General health, PTSD, Depression, Anxiety	Residence permit, social network & social support, period of residence, acculturation	SF36, HTQ, HSCL	Legal status has an impact on PTSD and Depression / Anxiety, more post-migration stress and less social support were associated with PTSD and Depression
Gorst-Unsworth & Goldenberg, 1998	Cross-Sectional Study	N=84 male Iraqi refugees between 18 and 59 years old	Iraq	UK	PTSD, Depression	Social Support	HTQ, STAR, Rand Social Activities Questionnaire, Duke-UNC FSSQ, PSE	Social support is associated with PTSD and depressive symptoms
Hecker et al, 2018	Cross-sectional study	N=94 refugees	Majority from Syria, Afghanistan, Eritrea	Switzerland	PTSD, complex PTSD, disturbances in self-organisation	PMLD Checklist, Social Provision Scale	HTQ, ITQ, ICD-11 PTSD, ICD-11 CPTSD, PHQ-9, Social Provision Scale	Refugees experience in average 6,44 PMLD, lack of social support and PMLD were significant correlated with

								DSO symptom severity but not with PTSD symptom severit
Heeren et al., 2014	Cross-sectional study	N=65 asylum seekers, n=34 refugees, n=21 illegal migrants n=26 labor migrants, n=56 residents		Switzerland	PTSD, Depression, Anxiety	Structural, cultural, interactive and identificational integration (work satisfaction, social contacts outside the family, social contacts with residents, leisure activities, news consumption, German proficiency)	HTQ, HSCL, PDS	High rates of depression and PTSD in asylum seekers, illegal migrants and refugees; Asylun seekers had the highest rates of anxiety; resident status was associated with mental health, especially for PTSD for asylun seekers and refuges as well as depression and anxiety for illegal migrants, asylum seekers and refugees
Laban et al., 2004	Cross-sectional study	N=294, (n=146 residence less than 6 months, n=151 more than 2 years)	Iraq	Netherlands	PTSD	Length of stay in the Netherlands	HTQ, CIDI	Levels of psychiatric disorders are much higher in the group that was in the asylum procedu for more than 2 years ? overall risk for higher pathology
Laban et al., 2005	Cross-sectional study	N=294, (n=146 residence less than 6 months, n=151 more than 2 years)	Iraq	Netherlands	PTSD	PMLD Checklist; Family issues, discrimination, asylum procedure, socioeconomic living conditions, socioreligious aspects, employment	HTQ, CIDI	Significant relationship between postmigration living difficulties and psychopatholog unemployment, stress in family and stress in the asylum procedu have the highest odds for psychopatholog
Lamkaddem et al., 2015	Cohort study	N=172 (n=68 newly arrived, n=104 longstanding)	Afghanistan, Iran & Somalia	Netherlands	PTSD, General Health, Anxiety, Depression	Asylum Procedure, New Culture / Language, Housing, Work, Family / Social Support, Social Position, Missing country of origin	SF-36, HTQ, HSCL	Improvement of mental and general health after obtaining a residence permit improvements were related to living conditions employment and the presence of social support; the change in legal status has mediating effect on mental health
Lavik et al., 1996	Cross sectional study	N=231 refugee patients	Afrika (12%), Far East (19%), Middle East (52%), Latin America (8%), Europe (9%)	Norway	PTSD, Depression, Anxiety	Legal status, Employment / Education, Family situation	Free Psychiatric Interviews, BPRS, HSCL, PTSS-10, GAF	Unemployment and inactivity ar a predictor for missing psychosocial functioning and depression and anxiety in exile
Leiler et al., 2018	Cross-sectional study	N=367 asylum seekers and N=143 refugees with residence permit but with unclear housing situation; both groups living in refugee housing facilities	Afghanistan, Syria, Iraq, Iran, Eritrea, Somalia	Sweden	PTSD, Depression, Anxiety	Housing facility, residence status	PHQ-9, GAD-7, PC-PTSD, WHOQOL	More asylum seekers showed clinically significant symptoms of PTSD and in anxiety scores

Morgan et al., 2017	Cross-Sectional Study	N= 97 asylum seekers or refused asylum seekers	25 countries	UK	PTSD, Distress, Anxiety, Depression	Social support, length of stay, PMLD Checklist	Traumatic Exposure Questionnaire (part of HTQ), HSCL	Refused asylum seekers report higher anxiety and depression symptoms (not significant for PTSD) and more stress was associated with isolation and restrictions
Müller et al., 2018	Cross-sectional database study	N=620; N=78 Asylum seekers and migrants with permanent residency; psychiatric outpatient clinic	Turkey	Germany	Medication, Mental Health (Anxiety, Depression, PTSD)	Asylum application status, language proficiency	MIGSTR10, ICD-10 Diagnosis	Number of psychiatric diagnoses was higher in Asylum Seekers, communication problems, stress related to migration histor shame feelings, homesickness and perceived discrimination occurred more often in asylum seekers; loss of status and feelings of guilt were present in both groups
Nickerson et al., 2015	Cross-sectional study	N=134 treatment seeking refugees and asylum seekers	Mostly from Turkey (n=72), Iran (n=16), Sri Lanka (n=11)	Switzerland	PTSD, Depression, Explosive Disorder, emotional dysregulation	PMLD Checklist	HTQ, HSCL, PDS, DERS	Trauma exposur und PMLD were associated with PTSD, depressio and explosive anger; difficulties in emotion regulation are associated with post-migration living difficulties
Priebe et al., 2013	Cross-sectional study	N= 854 Refugees in Western countries (n=3313 from Balkan) (only Refugees included)	Balkan countries (Bosnia-Herzegovina, Croatia, Kosovo, Macedonia, Serbia	UK, Italy, Germany	PTSD, Depression, Distress	Employment, Pre- and Postwar traumatic experience, legal status, feeling accepted in host country, Life Stressor Checklist-Revised	BSI, IES-R, MINI	Higher level of psychiatric symptoms was associated with postmigration stressors and a temporary legal status; feeling accepted in the host country and being able to communicate in host language were associated with less severe symptoms; (employment wa associated with lower symptom level)
Schick et al., 2016	Cross-sectional study	N=104 from two outpatient clinics; persons with a legal status (mean = 10 years)	Turkey, Middle East, Sri Lanka, Former Yugoslavia	Switzerland	PTSD, Anxiety, Depression, Health related quality of life	Social integration, Language, Employment, Access to health care, financial situation, accommodation, social participation, discrimination, criminality rate, political participation, post-migration education, family characteristics, PMLD Checklist	HTQ, PDS, HSCL, SF-12	Social integratio was poor, participants experienced problems with isolation, employment and communication; social integratio correlated with HRQL and functional impairment, symptom severit in depression an anxiety; symptoms and PTSD and depression predicted difficulties in integration
Spiller et al.,	Cross-	N=134	Turkey, Iran,	Switzerland	PTSD,	PMLD Checklist	HTQ, PDS,	Correlations

2016	sectional study	traumatized refugees and asylum seekers	Sri Lanka, Iraq, Bosnia		somatization, explosive anger		SCL-90	between PTSD, anger, PMLD an trauma exposure no correlation between PTSD and length of stay; PMLD were significant predictors for PTSD
Steel et al., 2016	Cross-sectional study	N=420 refugees and immigrants	African countries (mainly Somalia, Ethiopia and Eritrea)	Sweden	PTSD, Depression, Anxiety	PMDL Checklist, Cultural Lifestyle Questionnaire	HTQ, HSCL	Postmigration stress was a significant predictor for depression and PTSD but not fo anxiety
Teodorescu et al., 2012	Cross-sectional study	N=61 refugee outpatients	21 countries, majority from Eastern Europe	Norway	PTSD, Distress, Depression	Employment, Social Network, Social integration in the Norwegian Culture and in the immigrant ethnic culture, proficiency of Norwegian language	SCID PTSD, MINI, SIDES, HSCL, IES-R, LEC	Weak social network, weak social integratio in the Norwegian community and into the ethnic community, unemployment was associated with psychiatric morbidity and higher levels of symptom severit
Teodorescu et al., 2012	Cross-sectional study	N= 55 outpatients with a refugee background	Not stated	Norway	PTSD, mental disorders, depression, health related quality of life	Social integration social network, employment	LEC, CAPS, SCID-PTSD Structural, MINI, IES-R, HSCL, PTGI-SF, WHOQOL	Posttraumatic stress and depressive symptoms were significantly and positively correlated with post-migration stress variables; Depression was associated with psychological health, social relationships an environment; Unemployment was only associated with the environment scale
Winkler et al, 2019	Cross-sectional study	N=650 refugees from communal accommodations in Berlin	47 different ethnic minorities	Germany	PTSD, Depression, Anxiety	Questions about residence status and the asylum procedure	HSCL, PDS	Significant correlations between residence status and the severity of psychiatric disorders but no between residence status and the existenc of psychiatric disorders

Figures

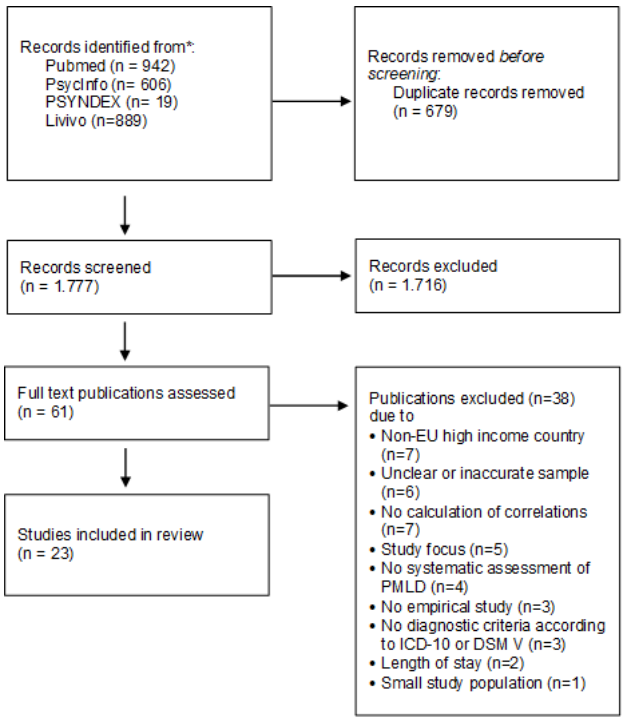

Figure 1

Prisma flow diagram showing the selection of studies