Gezondheidsraad
Health Council of the Netherlands

Aan de minister van Volksgezondheid, Welzijn en Sport

Onderwerp : Briefadvies *Geestelijke gezondheid van vluchtelingen*
UW kenmerk : -
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Bijlagen : 1
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Geachte minister,

Sinds vorig jaar komt een omvangrijke stroom vluchtelingen naar ons land. Naar verwachting neemt die stroom in 2016 en 2017, onder andere als gevolg van gezinshereniging, eerder toe dan af. Deze situatie stelt het Rijk en de gemeenten voor grote uitdagingen. Zoals bekend is onlangs het Bestuursakkoord Verhoogde Asielinstroom tot stand gekomen.[1,2] Daarin zijn met de gemeenten (vertegenwoordigd door de VNG) afspraken gemaakt over de opvangcapaciteit, huisvesting, inkomensvoorziening en maatschappelijke begeleiding.

Een belangrijke doelstelling, schrijft het kabinet, is bevordering van integratie en participatie van vluchtelingen, zowel asielzoekers die een verblijfsvergunning krijgen als mensen die tijdelijk in Nederland mogen verblijven. In het Bestuursakkoord wordt onderscheid gemaakt tussen maatregelen voor de korte en middellange termijn. Het thema ‘gezondheid en zorg’ heeft daarbij voor de middellange termijn een plaats gekregen. In de voortgangsbrief d.d. 15 januari 2016 staat dat de komende maanden onder andere op het terrein van zorg nader onderzocht wordt welke aanvullende maatregelen nodig zijn.[3] Eventuele financiële gevolgen hiervan zullen worden meegewogen in de besluitvorming over de voorjaarsnota.

Tegen deze achtergrond acht ik het van belang u te adviseren over de gezondheids-problematiek bij vluchtelingen. De geestelijke gezondheid staat daarbij centraal, niet alleen omdat die naar verhouding de meeste zorgen baart, maar ook omdat deze een sleutelrol speelt bij mogelijkheden tot participatie. Dit signalerende briefadvies, dat getoetst is door de Beraadsgroep Volksgezondheid en de Beraadsgroep Gezondheidszorg, is primair gebaseerd op een in opdracht van de Gezondheidsraad uitgevoerde achtergrondstudie door onderzoekers van de afdeling Sociale Geneeskunde (AMC), getiteld *Preserving and Improving the Mental Health of Refugees: A Literature Review for the Health Council of the Netherlands.* Die achtergrondstudie (in bijlage) biedt een methodologische verantwoording en bevat alle referenties ter onderbouwing van dit advies.

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De opzet van het advies is als volgt. Conform de taak van de Gezondheidsraad komt eerst aan de orde wat de internationale wetenschappelijke literatuur leert over drie kwesties: [1] de prevalentie van mentale aandoeningen onder vluchtelingen; [2] wat hierbij risicofactoren of juist beschermende factoren zijn; [3] de effectiviteit van (preventieve) interventies. Tegen deze achtergrond richt ik me op de situatie in Nederland. Binnen het bestek van dit signalement en de beperkt beschikbare tijd kan dat slechts een verkenning op hoofdlijnen behelzen. Ik heb vastgesteld dat zowel in de zorgpraktijk als op het gebied van onderzoek momenteel tal van initiatieven worden ontplooid, die deels nog verder moeten uitkristalliseren. Mijn aanbevelingen aan u spelen dan ook op die initiatieven in.

Bij 13 tot 25 procent van de vluchtelingen is sprake van PTSS of depressie

De meeste gegevens hebben betrekking op PTSS (Posttraumatische Stressstoornis) en depressie. Ze vertonen een aanmerkelijke variatie in het percentage vluchtelingen dat met deze aandoeningen te kampen heeft, afhankelijk van onder meer de onderzoeksopzet en het land van herkomst. Volgens een meta-analyse van de kwalitatief beste onderzoeken is er bij 13 tot 25 procent van de vluchtelingen sprake van PTSS of depressie, die vaak samen blijken te gaan. Op de betekenis van die spreiding kom ik terug. Er zijn aanwijzingen dat dit percentage – op groepsniveau – na verloop van tijd daalt, maar er zijn ook onderzoeken die erop duiden dat deze aandoeningen – in individuele gevallen – later de kop op kunnen steken. In ieder geval is het betreffende percentage de eerste jaren na aankomst relatief hoog, dat wil zeggen hoger dan in de algemene bevolking of bij reguliere migranten. Om de gedachten te bepalen: cijfers voor PTSS en depressie in de Nederlandse bevolking zijn respectievelijk 2,6 en 6 procent.

PTSS en depressie zijn niet het hele verhaal

PTSS en depressie zijn relatief vaak onderzocht. Voor andere mentale aandoeningen en psychische problemen bij vluchtelingen is dat veel minder het geval. Ik ben het eens met de opstellers van het achtergronddocument dat op dit punt dus voorzichtigheid geboden is bij het trekken van conclusies. Zo weten we onvoldoende precies hoe vaak problemen als angststoornissen, psychosen, drugsgebruik en zelfmoordpogingen bij vluchtelingen voorkomen. Dat de meeste vluchtelingen geen ernstige psychiatrische stoornissen hebben, wil evenmin zeggen dat ze zonder klachten zijn. Mentale problemen kunnen bovendien deels vertaald worden in lichamelijke klachten. Vluchten geeft hoe dan ook stress. De onderzoekers van het AMC hebben echter geen overzichtspublicaties kunnen vinden waarin kwantitatief is nagegaan hoe het met het geestelijk

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welbevinden van vluchtelingen gesteld is of in welke mate zich psychosociale problemen bij hen voordoen.

Geestelijke gezondheid is afhankelijk van veel factoren

Volgens een nieuwe definitie is positieve gezondheid: zich kunnen aanpassen aan verstoringen, veerkracht hebben, een balans weten te handhaven of te hervinden.[4,5] Deze dynamische visie is naar mijn oordeel bij uitstek van toepassing op de geestelijke gezondheid van vluchtelingen. Ook in het conceptuele model van de achtergrondstudie is die visie vervat. Het gaat dan om een heel spectrum aan risicofactoren enerzijds en beschermende factoren anderzijds.

Deels betreft het zaken die iedereen verwacht: naarmate mensen meer of heftigere traumatische gebeurtenissen hebben meegemaakt, is hun kans op mentale problemen groter. Vrouwen, ouderen en kinderen die alleen het land binnenkomen blijken meer risico te lopen. Traumatische ervaringen die veel vluchtelingen met zich meedragen leiden echter niet onvermijdelijk tot psychiatrische stoornissen. Condities in het land van aankomst spelen daarbij ook een rol: gebrek aan sociale ondersteuning, sociaal-culturele problemen (zoals taalproblemen, discriminatie, culturele aanpassingsmoeilijkheden) en een lage sociaaleconomische status. Ook andere factoren lijken een negatief effect te hebben, zoals onzekerheid over de uitkomst van de asielprocedure en veelvuldige wisseling van opvanglocatie.

Tot de beschermende factoren behoren het hebben van een sociaal netwerk, een passende baan en een goede accommodatie. Ook religie blijkt steun te kunnen bieden. Over de waarde van sociaal-culturele integratie is betrekkelijk weinig bekend. Aannemelijk is wel dat het leren van de landstaal helpt.

Preventieve maatregelen bieden kansen

In de achtergrondstudie is eveneens in kaart gebracht wat wetenschappelijk bekend is over preventieve mogelijkheden om de geestelijke gezondheid van vluchtelingen te bevorderen. Bij primaire preventie gaat het om maatregelen die op vooral de sociale determinanten van gezondheid aangrijpen. Dat kunnen zowel risicofactoren als beschermende factoren zijn. In de vorige paragraaf werd al opgemerkt dat er een duidelijk verband bestaat tussen indicatoren van geestelijke gezondheid en sociale determinanten. Er is daarom alle reden om aan te nemen dat met verbetering van de sociale condities mentale gezondheidsproblemen kunnen worden voorkomen. De onderzoekers stellen echter vast dat over dergelijke preventieve maatregelen weinig betrouwbare onderzoeksgegevens beschikbaar zijn. Betere toegang tot de arbeidsmarkt via

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etnische sociale netwerken lijkt kansen te bieden, maar de bewijskracht van dat onderzoek is beperkt.

Secundaire preventie richt zich op vluchtelingen met een verhoogd risico op mentale aandoeningen. Eén groep die daarbij aandacht heeft gekregen zijn getraumatiseerde kinderen. Er zijn duidelijke aanwijzingen dat cognitieve gedragstherapie op school symptomen van PTSS en depressie bij deze kinderen kan verminderen. Bij zogeheten multimodale interventies, waarbij zowel psychologische als sociale interventies deel uitmaken van de behandeling, lopen de bevindingen uiteen of is de effectiviteit twijfelachtig. Blijkens een recente enquête ervaren Nederlandse scholen moeilijkheden bij de begeleiding van getraumatiseerde vluchtelingen-kinderen. Naar mijn opvatting is het belangrijk te investeren in een passende training van docenten, met aandacht voor taal- en culturele barrières.

De gezondheidszorg staat voor een uitdaging

Medische behandeling kan verdere complicaties bij vluchtelingen met PTSS of depressie voorkomen en hun sociaal functioneren bevorderen. Over dit onderwerp weten we naar verhouding het meest. Bewezen effectief zijn cognitieve gedragstherapie (bij PTSS en depressie) en zogeheten narratieve exposure therapie (bij PTSS). Over andere therapieën is minder bekend. Wel komt uit de literatuur naar voren dat vluchtelingen met deze aandoeningen lang niet altijd de weg naar de geestelijke gezondheidszorg weten te vinden.

Gezien de omvang van asielinstroom en het verwachte percentage vluchtelingen met mentale aandoeningen staan hulpverleners in de GGZ, maar ook in de eerste lijn, voor een uitdaging. Hoe groot dat percentage precies zal zijn, verschilt vermoedelijk per land van herkomst. Zo zijn Syrische vluchtelingen over het algemeen hoger opgeleid dan vluchtelingen uit Eritrea. De leeftijdsamenstelling van de betreffende groepen kan eveneens verschillen. Sociaal-culturele verschillen komen daar nog eens bovenop. Die kunnen een juiste diagnose bemoeilijken.[6]

Er zal rekening moeten worden gehouden met deze heterogeniteit. Dat vraagt om investeren in de uitwisseling van informatie en ervaring en in de ontwikkeling van kennis op dit gebied. Het is verheugend te kunnen constateren dat onlangs het ‘Convenant GGZ voor asielzoekers’ tot stand gekomen is.[7] De convenantpartijen en het COA streven ernaar samenwerkingsafspraken te maken, elkaar goed te informeren en de wederzijdse posities helder te bepalen.

‘Geen tijd te verliezen’ luidt de titel van een beleidsbrief van de WRR over de integratie van asielmigranten.[8] Dat gevoel van urgentie moet volgens mij ook vooropstaan bij de geestelijke gezondheidszorg voor vluchtelingen. Hoe eerder problemen onderkend worden, des te beter: een snelle toe- en doorgeleiding naar de juiste aanbieders met sociaal-cultureel competente

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professionals is essentieel voor een optimale zorgverlening. Het convenant richt zich speciaal op asielzoekers. De fase daarna, wanneer iemand een verblijfsvergunning heeft gekregen, ergens in Nederland woont en aanspraak heeft op zorgvoorzieningen, is echter net zo belangrijk. Ook dan kunnen zich namelijk vergelijkbare gezondheidsproblemen voordoen.

Flankerend onderzoek is nodig

Recapitulerend stel ik vast dat er diverse mogelijkheden zijn om de geestelijke gezondheid van de vele vluchtelingen in ons land te bevorderen. Wel is het, onder meer vanwege de heterogeniteit van deze groep mensen, deels nog de vraag wat in de Nederlandse praktijk voor wie het best zal werken. Nader onderzoek kan daarover meer duidelijkheid bieden.

De ministeries van SZW, VenJ en BZK zijn van plan een onderzoek te laten uitvoeren naar de maatschappelijke lotgevallen van een cohort statushouders uit 2015.[9] Volgens het huidige voorstel zullen het SCP en het WODC onderzoeken hoe het leden van dit cohort de komende jaren in een aantal sociale domeinen vergaat. Genoemd worden onder andere het onderwijs, de arbeidsmarkt, de huisvesting en de criminaliteit. Ook zaken als ervaringen en opvattingen van de statushouders en hun contacten met anderen binnen de Nederlandse samenleving zouden daarbij aandacht kunnen krijgen. Het is naar mijn oordeel essentieel het thema gezondheid binnen dit onderzoek eveneens een plaats te geven. Naar ik heb begrepen zijn daar in deze fase nog alle mogelijkheden toe.

In dit verband is ook een project van ZonMw en Kenniscentrum Impact van belang. Komend voorjaar verschijnt een overzicht van het actuele aanbod van preventieve methoden, manieren van toeleiding naar de zorg en veelgebruikte behandelingen bij vluchtelingen en asielzoekers met psychotrauma's.[10] De focus ligt daarbij in het bijzonder op kinderen. Tegen deze achtergrond wordt een agenda opgesteld voor noodzakelijk geacht wetenschappelijk onderzoek. Ik deel de visie dat die onderzoeksagenda nodig is.

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Verwevenheid van gezondheid en participatie benutten

We dienen er op bedacht te zijn dat de huidige en verwachte vluchtelingenstroom gepaard gaat met extra problemen op het gebied van de geestelijke gezondheid, maar die problemen kunnen op heel wat manieren tegemoet worden getreden. Er is namelijk een hechte interactie tussen gezondheid en participatie. Wie deelneemt aan het maatschappelijk leven, of het nu gaat om een betaalde baan, vrijwilligerswerk of andere sociale bezigheden, loopt minder risico op mentale aandoeningen. Dat het kabinet sterk inzet op participatie, werpt zonder twijfel vruchten af voor de gezondheid en het welbevinden van vluchtelingen en asielzoekers. Maar het omgekeerde geldt evenzeer: iemand moet gezond genoeg zijn om te kunnen participeren. Bevordering van gezondheid is daarmee een belangrijk instrument om participatie, en uiteindelijk integratie, te stimuleren.

Met vriendelijke groet,

prof. dr. W.A. van Gool,
voorzitter

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Preserving and Improving the Mental Health of Refugees and Asylum Seekers

A Literature Review for the Health Council of the Netherlands

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Content

1 Introduction

According to the UNHCR, a record number of around 60 million people are currently displaced worldwide. In 2015, more than 1 million refugees and asylum seekers had reached Europe across the Mediterranean Sea, with more than 50% constituting Syrians.[1] Around 59.000 refugees and asylum seekers arrived in the Netherlands in 2015.[2] Given the on-going civil war in Syria and difficult conditions in the regional countries, it is not likely that the refugee influx will reduce substantially in the following years.[3,4]

The terms 'refugees' and 'asylum seekers' are often used interchangeably, but these have different meaning with distinct legal and policy implications. Based on the 1951 Refugee Convention, the UNHCR defines a refugee as an individual who "owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of this nationality, and is unable to, or owing to such fear, is unwilling to avail himself of the protection of that country".[5] In the Netherlands, refugees are first regarded as asylum seekers and go through the asylum procedure.[6] Once they are officially recognized as refugee, they are granted temporary residency status (which is changed into permanent after five years, if the situation in the country of origin is still unsafe).[6] They further receive private accommodation in a municipality and are allowed to request family reunion.[6] Officially recognized refugees have the same rights as the inhabitants of the host country.[7] An asylum seeker, as defined by the UNCHR, is an individual who "says he or she is a refugee, but whose claims have not yet been definitely evaluated".[8] Asylum seekers are in the asylum procedure, awaiting the decision on their asylum claims.[6] In the meantime, they have no private accommodation and have little opportunities to work or study (though after six months only).[6] The asylum procedure might take a few months to several years.[9]

The current refugee situation does not only pose political and moral dilemmas, but also represents a public health imperative with potentially long-term consequences. It is likely that most refugees and asylum seekers have been exposed to adverse conditions before, during and after migration, which in turn may affect their health during resettlement in the host country. This has implications for the short term but also for the long term, as previous migration waves have taught us that refugees are likely to stay in

the host country. In fact, a Dutch study indicated that two-third of the refugees who received residence status in 1998-2007 stayed in the Netherlands.[10]

Against this backdrop, the Health Council of the Netherlands has commissioned the department of Public Health of the AMC/UvA to review the available evidence on the health of refugees and asylum seekers in high-income countries. The Health Council of the Netherlands has used the evidence base to draft a policy brief for the Minister of Health. The focus of this report is limited to mental health as this is most clearly linked with refugee's experiences, hence providing opportunities for preventive interventions. In this report, we specifically address the following questions:

1 Have refugees and asylum seekers increased risk for mental disorders as compared to regular migrants and the general population in the host country? If so, for which disorders specifically?
2 What are the potential risk factors as well as the protective factors for the mental health of refugees and asylum seekers, predominately in the post-migration phase?
3 Which preventive interventions have shown effectiveness for refugees and asylum seekers?

In this report, we first describe the methods we used to find the focus of the report and to gather the available evidence. Then, we present the conceptual model for understanding refugee mental health. We subsequently review the literature on the mental health status of refugees, including the potential risk and protective factors. We also review the literature on the interventions done among refugees and asylum seekers to prevent and treat mental health problems. Based on this evidence base, we draw general conclusions and discuss the relevance for the Netherlands.

1.1 Methods

We employed a two-phase approach in the methods. First, we interviewed experts in the field of refugee mental health. These experts were all based in the Netherlands and play an important role in the refugee health debate, both nationally and internationally. Some experts were contacted through personal networks, while others were found through the Internet. We further used the snowball method to get in touch with experts. The aim of the interviews was to determine the focus of the review (i.e., what topics should we address). As mentioned, we decided to focus on the mental health of refugees, which is most clearly linked with refugee's experiences. The experts also provided important literature. We were able to contact nine experts from different professional backgrounds (e.g., academics, health practitioners, and public health professionals, see Annex 1 for more information). Based on the first-phase, we drafted our conceptual model (see next

section). Given the extensive literature and relatively short amount of time (three months), some experts recommended to write a report based on the reviews and meta-analyses published in peer-reviewed international journals.

The second-phase consisted of collecting the available evidence on refugee mental health, guided by the conceptual model. As recommended, we considered meta-analyses and reviews (both systematic and scoping). We used the following databases: Cochrane, Web of Science, CINAHL, PsycINFO, Embase (+Classic), Pubmed, Sociological Abstracts, Campbell Collaboration, and Google Scholar. The following search terms were used: refugee, asylum seeker, mental health, wellbeing, and psychological (see Annex 2 for detailed information on the database search). We were able to get 393 hits. After screening of the titles and abstract, we selected 30 articles. The other articles were excluded because these did not address the mental health of refugees. In addition, by manual search of the reference lists and through experts, we found another 14 articles. Finally, we included 44 articles: 4 were meta-analyses, 28 systematic reviews, and 12 scoping reviews. Detailed information on the included articles is provided in Annexes 3 and 4. We discuss these reviews and meta-analyses in this report to address the research questions as specified in the background section.

1.2 Conceptual model

To understand refugee mental health and to drive the literature search, we developed a conceptual model (see Annex 5). This model was based on several theories common in the stress literature (the Stress Model of Falkman and Lazarus[11] and Conservation of Resources theory by Hobfoll[12]). The multi-level, multi-modal, multi-stage public health model of de Jong was also incorporated into our conceptual model.[13] De Jong's model theorizes that mental disorders among refugees can be prevented at different levels (i.e., individual, family/community, and societal) and stages (i.e., primary, secondary and tertiary prevention).[13]

Our conceptual model indicates that the experiences of refugees can be divided into three different phases: pre-migration (in country of origin), migration (mostly in transit-countries), and post-migration (in host country). The final phase can be further divided into asylum procedure and resettlement. During asylum procedure, the asylum seeker has applied for asylum and not yet been granted the residency status. In resettlement, the refugee has received the residency status and is allowed to resettle, either temporally or permanently, in the host country.

The experts stressed the importance of including the concepts of resilience and coping in the model, since many refugees who experience traumatic events do not develop mental health problems. In the scientific literature, the concept of resilience is defined in different ways. A main distinction can be made between definitions that conceive resilience as an individual trait, and definitions that take a broader perspective by also taking the conditions people live in into account.[14] In this report, we used the latter, ecological perspective. In that perspective, resilience is conceived as a function of assets and conditions that enhance mental wellbeing and protect people who experience traumatic events against developing mental health problems. By contrast, a lack of assets and adverse conditions may compromise resilience, thereby increasing the risk of mental health problems. For example, refugees who are separated from their family will not receive family support in the host country, so they are lacking this asset. However, if family reunion is realized in the host country, this asset can be used again to improve mental health. In this report, we define the lack of assets and adverse conditions as risk factors, while the presence of assets and favourable conditions are considered protective factors.

In essence, the trade-off between risk factors and protective factors determines whether one develops mental health problems. When protective factors are insufficient to deal with the risk factors, mental health problems may arise. On the contrary, when protective factors are sufficient, one is able to overcome adversity and pursue his/her life goals, which in turn positively impacts mental health.

Given the background of this report, we mainly focus on post-migration factors. We address both the risk factors as well as the protective factors.

2 Mental health of refugees and asylum seekers

Mental health is not simply the absence of disease. More specifically, the mental health status of refugees and asylum seekers could not only be indicated by the presence or absence of mental disorders, such as PTSD, but clearly also reflects mental wellbeing and psychosocial problems. Psychosocial problems could arise as a response to abnormal conditions that refugees and asylum seekers are exposed to. Such problems could vary from grief and distress to behavioural and emotional problems. Psychosocial problems may dissolve over time, but these can also develop into mental disorders. Using an overall mental health index covering mental wellbeing, psychosocial problems and mental disorders, the meta-analysis by Porter & Haslam suggested that refugees have worse mental health than non-refugees.[15] Since an overall index was used in this meta-analysis, mental wellbeing or psychosocial problems could not be separated from mental disorders. We are not aware of any reviews that specifically address mental wellbeing and/or psychosocial problems among refugees and asylum seekers. Instead, the available reviews and meta-analyses focus on mental disorders as outcome. As a consequence, mental health, in this report, is indicated by the presence or absence of mental disorders. Hence, it is important to emphasize that our findings do not provide a complete picture of the mental health status of refugees.

Below we discuss the prevalence rates of PTSD, depression, and other disorders such as anxiety and psychosis. For the prevalence rates, it was often difficult to indicate after how many years post-displacement the mental disorders were assessed, as the reviews included studies with considerable variation in the time since displacement or with no data on this at all. In addition, most individual studies determined mental health disorders at the time of assessment (i.e., point-prevalence). There are some indications of a declining prevalence over time, but despite this the prevalence rates remained high 6-22 years since displacement. This issue will be further discussed in the next section. The findings of the prevalence studies are summarized in Table 1.

2.1 PTSD

We observe substantial variation in the prevalence rate of PTSD among refugees across studies, depending on methodological factors (e.g., sampling, sample size, measure

type), country of origin, and phase of migration. Three meta-analyses calculated the pooled prevalence rate of PTSD. Two meta-analyses from Steel et al. and Lindert et al. found that around a third of the adult refugees has PTSD (31% and 36%, respectively); however this prevalence rate was unadjusted.[16,17] When only the higher-quality studies (i.e., those with probability sampling, sample size ≥500, and diagnostic interview used as measure) were analysed, the prevalence rate of PTSD was 13-25% in the meta-analysis by Steel et al.[16] Important to note, the large meta-analysis by Steel et al. included studies across the globe, with around 24% of the meta-population being resettled in high-income countries.[16] However, the site of survey did not influence the prevalence rate.[16] Lindert et al. mostly focused on refugees resettled in high-income countries.[17] The third meta-analysis by Fazel et al. estimated a much lower prevalence rate for refugees resettled in high-income countries: 9% for adults and 11% for children.[18] However, this meta-analysis was relatively older (studies until 2002 included).[18] Also, 75% of the included refugees in this meta-analysis were from Southeast Asia resettled in the United States, thereby limiting the generalizability to other refugee populations in different settings.[18]

In addition, there were five systematic reviews specifically focusing on populations that have relevance for the current situation in Europe. For Afghan refugees resettled in high-income countries, Alemi et al. found a prevalence rate of PTSD between 25-50%.[19] Slewa-Younan et al. noted a prevalence rate of 8-37% among Iraqi refugees in high-income countries.[20] By comparison, the authors pointed out that the prevalence of PTSD in the general population is around 1% In Iraq (based on a 2007-2008 national survey).[20] Bronstein & Montgomery conducted a systematic review on refugee children (aged <25 years) resettled in high-income countries.[21] They found a prevalence rate between 19-54%, which is higher than in the general population but similar in trauma-affected populations.[21] A recent systematic review by Bogic et al. assessed the long-term mental health impact of war among adult refugees, with the majority of the studies conducted in high-income countries.[22] They found a prevalence rate of 4-61% (higher-quality studies only) around nine years after displacement.[22] The authors noted that refugees are 15 times more likely to have PTSD, compared with the general adult population in high-income countries.[22] Among Syrian refugees living in camps in Lebanon and Turkey, Quosh et al. found a prevalence rate of PTSD of 36-76%, although this was based on three studies only.[23]

The evidence has several methodological limitations. First, some studies used non-probability sampling, affecting the representativeness and generalizability of the findings. Second, sample sizes were mostly relatively small, and several meta-analyses and review found that studies with larger sample sizes tended to have lower prevalence

rates. Third, the diagnostic instruments used were often self-reported and culturally not validated. The studies with lower methodological quality tended to report higher prevalence rates. Although we emphasize the need for studies with higher methodological quality, it is equally important to recognize the practical and ethical issues in refugee health research. And despite these issues, several studies have collected higher-quality data. The evidence base also is quite extensive as it includes different refugee populations resettled in different context (e.g., high-income vs low-middle-income, different high-income countries).

In sum, we estimate that 13-25% of the refugees resettled in high-income countries suffer from PTSD. This prevalence rate is based on the meta-analysis by Steel et al.[16] As this meta-analysis explicitly took the methodological factors into account and used higher-quality data, we contend that it provides the best estimate of PTSD among resettled refugees.

2.2 Depression

Similar to PTSD, studies have shown heterogeneity in the prevalence rates of depression. Four meta-analyses pooled the prevalence rate of depression among refugees. Fazel et al. found a prevalence rate of 5% among refugees (mostly of Southeast-Asian origin residing in North America).[18] Based on four studies, Fazel et al.'s meta-analysis found a high prevalence of co-morbidity of PTSD and depression among refugees: 71% of the refugees with depression also had PTSD, while 44% of those with PTSD had additionally depression.[18] However, this was found in small studies with non-representative samples.[18] The meta-analyses by Lindert et al. and Steel et al. estimated a prevalence rate of 44% and 31%, respectively.[16,17] After taking the methodological factors into account, the prevalence rate in Steel et al.'s meta-analysis reduced to 8-25%.[16] Lindert et al. did not find that sampling method or sample size affected the prevalence rate among refugees.[17] In addition, Lindert et al. found the prevalence rate to be twice as high as in labour migrants (20%).[17]

In addition, five systematic reviews were done on specific populations. Alemi et al. found that 45-57% of Afghan refugees resettled in high-income countries have depression.[19] Iraqi refugees had a prevalence rate of 28-75% - by comparison, 4% of Iraq's general population have depression.[20] Among Syrian refugees residing in refugee camps in Lebanon and Turkey, the prevalence rate varied between 54-60% (two studies only).[23] Among refugee children resettled in high-income countries, Bronstein & Montgomery used three studies and found a prevalence rate of 3-30%, which was higher than that in the general population.[21] Using data from higher-quality studies only, Bogic et al. showed

that the prevalence rate of depression was 3-55% in war-affected adult refugees around nine years after displacement.[22] The authors noted that depression is 14 times more prevalent than in the general population.[22]

The methodological limitations and strengths of PTSD evidence also apply to the evidence on depression.

Conclusively, based on the current available evidence from higher-quality studies from Steel et al.'s meta-analysis, we conclude that 8-25% of refugees in high-income countries are affected by depression, with most of them additionally having PTSD. Depression is more common among refugees than the general population and labour migrants.

2.3 Other disorders

Besides PTSD and depression, we found evidence on anxiety disorders, psychotic illness, and other psychopathology among refugees. Two meta-analyses and three systematic reviews estimated the prevalence rate of anxiety disorders. Using data from five studies, Fazel et al. indicated that 5% of the refugees has generalized anxiety.[18] Lindert et al. estimated a prevalence rate of 40% among refugees resettled in high-income countries, while the prevalence rate among labour migrants was 21%.[17] The systematic review by Bogic et al. found a prevalence rate of around 25% of unspecified anxiety in two European-based studies conducted among war-affected refugees from the Middle East and Sub-Sahara Africa.[22] A prevalence rate of 12-39% was observed in Afghan refugees resettled in high-income countries[19], while for Syrian refugees in Turkey the prevalence rate was 53%.[23] The large between-study differences (e.g., included population, instruments, sample size, sampling) may explain this large variation in the prevalence rate of anxiety.

Psychotic illness also tended to be more common among refugees than non-refugees, as suggested by the systematic review by Parrett & Mason.[24] One of the two large Swedish cohort studies included in this systematic review suggested that among refugees psychosis rate is twice as high as in the host population, and 1.5 times higher than labour migrants.[24] Fazel et al. estimated the pooled prevalence rate of psychosis to be 2%, but this was based on two small studies only.[18]

There were two systematic reviews that considered other psychopathology. In a systematic review by Kalt et al., it was found that suicides and suicidal attempts were nearly two times more common in asylum seekers than the host population in high-

income countries.[25] The systematic review by Ezard assessed substance use in conflict-displaced populations, with only 3 out of 14 studies from Europe (Bosnia & Herzegovina and Croatia).[26] Compared with non-displaced populations, refugees had higher use of benzodiazepines (2% vs. 9%, respectively) and alcohol (72% vs. 78%).[26]

The evidence on other mental disorders is rather sparse and limited with the aforementioned methodological issues. Nonetheless, other mental disorders (e.g., psychosis and substance use) are now gaining attention. Taken together, caution is warranted in drawing any conclusions.

However, we could tentatively conclude that psychosis and suicide (attempts) among refugees and asylum seekers require attention. The results for anxiety are mixed, while the evidence base for substance use is currently weak.

3 Risk and protective factors of refugee mental health

As already indicated, we mainly focus in this review on post-migration factors, both risk and protective factors. Risk factors are factors that negatively impact the mental health of refugees, while protective factors have a positive impact. We have organised the risk and protective factors into personal characteristics, family and community networks, and social conditions in the host country. Personal characteristics refer to socio-demographic and psychological factors as well as to factors that occurred before or during migration. Personal characteristics allow identifying refugee subpopulations that have increased risk for mental disorders. Although most studies assessed the impact of the factors on PTSD and depressive symptoms, the meta-analysis by Porter et al.[15] examined the effects of numerous factors on the overall mental health measure, which includes mental disorders, psychosocial problems and mental wellbeing. Hence we assume that the findings discussed below can be applied to a broad range of mental health measures, not only restricted to mental disorders. We have summarized the findings of this section in Table 2. Where appropriate, we will make a distinction between refugees and asylum seekers, with most of the studies referring to the latter group.

3.1 Risk factors

Personal characteristics

We observed socio-demographic variations in the prevalence of mental disorders among refugees. One meta-analysis[15] and several reviews (both systematic[21,22] and scoping[27,28]) found some evidence that older refugees (including older children) have higher risk for mental disorders. However, the evidence in the meta-analysis was only based on two studies,[15] while Bogic et al. found no higher risk.[22] This increased risk was also found among refugee children. Similarly, some evidence indicated higher risk for refugee girls in two systematic reviews,[21,29] but two meta-analyses were inconclusive.[15,16] Two systematic[21,29] and one scoping review[27] found that unaccompanied child refugees have an increased risk for mental disorders. This extensive scoping review by Kirmayer et al. focused on immigrants and refugees residing in Canada and included 113 studies, including 10 systematic reviews and five meta-analyses.[27]

Traumatic events experienced in the country of origin and/or in transit-countries may have lasting impact on refugee mental health. Refugees who have experienced more potentially traumatic events (PTEs) had higher risk for mental disorders, as consistently found in one meta-analysis[16], four systematic reviews[19,21,22,29], and two scoping reviews[30,31]. The meta-analysis tended to show a dose-response relationship with both PTSD and depression, with the highest category being four times more likely to have PTSD than the lowest category.[16] Fazel et al. found 13 studies showing that pre-migration exposure to violence is a risk factor for refugee children resettled in high-income countries.[29] One meta-analysis[16] and one systematic review[25] found that torture history was associated with both PTSD and depression. Steel et al. estimated that around 21% of the refugees worldwide has experienced some form of torture.[16] Kalt et al. included adult asylum seekers residing in high-income countries only and found the prevalence rate of torture to be 30%, but the evidence had some limitations (e.g., small convenience studies).[25] Torture was also differently defined across studies, making it difficult to understand what kind of torture is exactly associated with mental disorders.[25] In addition, a meta-analysis by Vu et al. found that around 22% of the refugee women have experienced sexual violence, a risk factor for mental disorders including suicide.[32] However, this evidence was largely based on studies conducted in Africa and is likely to be affected by response bias (e.g., social stigma).[32] Despite these limitations, these reviews indicate that around one-fifth of the refugees have experienced serious human rights violations which affect their mental health.

Family and community networks

During migration and post-migration, refugees may experience loss of social networks and social support, which may negatively impact their mental health. Several systematic reviews have consistently indicated that small social networks and low social support are associated with mental disorders across different refugee populations (e.g., adults, children, Afghans, Iranians).[19,21,22,33] Alemi et al. further found that isolation and forced separation from family members were associated with distress among Afghan refugees resettled in high-income countries.[19] Interestingly, a mixed-method scoping review by Guruge et al. on immigrant women (including refugees) found that informal social networks could sometimes also be a source of conflict, leading to negative mental health outcomes.[34] However, this review only included Canadian-based immigrants.[34]

Social conditions in the host country

Loss of social status may potentially result in poor mental health. Refugees arriving in the host countries may experience dramatic negative changes in their social status (e.g.,

from successful lawyer to welfare beneficiary). Qualitative evidence from Afghan refugees suggested that no diploma recognition and being dependent on public assistance undermine self-esteem and dignity, leading to distress.[19] Also the changing gender roles affect the perceived social status of men and subsequently their mental health.[19] The scoping review by Kirmayer et al. also found that loss of social status was a risk factor.[27] The meta-analysis by Porter et al. found that refugees with high pre-migration socioeconomic status (SES) were more likely to have mental disorders than those with lower pre-migration SES.[15] The authors suggested that loss of social status could explain this finding.[15]

Low SES is associated with poor mental health.[35] Resettled refugees tend to have much lower SES than the general population in high-income countries,[36,37] hence the low current SES of refugees could be associated with poor mental health. This was found in four systematic reviews[19,22,29,33] and two scoping reviews[27,30]. The specific SES indicators were low education, financial concerns, unemployment, and low income.

Resettled refugees might experience difficulties while integrating into host societies, which may subsequently affect their mental health. Various systematic[19,33] and scoping reviews[27,30,31] have addressed this topic in relation to refugee mental health. Specifically, two systematic reviews[19,33] and one scoping review[31] found that difficulties experienced due to cultural adjustments pose a risk for mental health. These difficulties include changed gender roles, cultural discordance between parent (traditional, familial values) and children (Western values), and loss of culture and values.[19,33] Poor language skills were also associated with mental health problems, as found in two systematic reviews[19,33] and one scoping review[30]. Discrimination was also mentioned as potential risk factor for child and adult refugees in two systematic reviews[29,33] and one scoping review[27].

In addition, certain conditions during asylum procedure could negatively impact mental health of asylum seekers. Some reviews pointed towards the uncertainty about legal status and asylum procedure.[19,21,30] The systematic review by Fazel et al. noted that frequent changes in accommodation in the host country are a risk factor for the mental health of asylum seeking children.[29] Although the meta-analysis by Steel et al. had a global scope, it found that asylum seekers living in refugee camps or those who were displaced were twice as likely of having depression than resettled refugees.[16] Further, a recent Campbell systematic review analysed the health impact of detention among asylum seekers.[38] Detention was defined as depriving asylum seekers of their liberty by holding them in a facility (e.g., immigration holding centres, remote camps, jails).[38] Using data from three studies with relatively small convenience samples, Filges et al.

found that detained asylum seekers had higher risk for PTSD, depression, and anxiety compared to their non-detained counterparts.[38] And these effects persisted for one year after release (based one study only).[38]

Limited access to mental health services might potentially worsen the mental health problems of refugees. Several reviews (mainly scoping reviews) noted that in high-income countries adult and refugee children underutilize mental health services and that their mental health needs are unmet.[27,34,39,40] Three systematic reviews[19,33,39] and one scoping review[41] addressed the potential barriers refugees face in accessing mental health services, with the most comprehensive one by Colucci et al[39]. Based on 11 studies on refugee children and 37 studies adult refugees, Colucci et al. found the following barriers to be relevant: low priority placed on mental health, poor mental health and service knowledge, distrust of services, stigma associated with psychosocial problems and help seeking, and services have low cross-cultural awareness and competency.[39]

3.2 Protective factors

Personal characteristics

Positive psychological coping styles might help refugees in dealing with stress and adversity. Two scoping reviews have suggested that psychological coping may benefit the mental health of refugees.[31,42] Hsu et al. found that focusing on the present and future, and not the past, might be a protective factor for the mental health of Southeast-Asian refugees resettled in the US.[42] Tempany assessed the mental health of Sudanese refugees.[31] Based on two qualitative studies from Australia, it was suggested that normalization and acceptance of difficulties as well as suppression, silence and distraction were protective factors.[31] However, the evidence of scoping reviews is not exhaustive and its quality has not been systematically assessed, so caution is warranted.

Family and community networks

The presence of social support might protect refugees against mental health problems. Three systematic reviews[23,29,39] and several scoping reviews[28,31,34,40,42] found that social support, particularly from the informal network, has a positive impact on the mental health of refugees. Fazel et al. indicated that support from parents and friends and family cohesion are protective factors for refugee children.[29] Based on 11 studies of refugee children, Colucci et al. found that refugees with mental health problems are likely to access help from friends, religious/school personnel.[39] The systematic review on Syrian refugees indicated that socialising with family and friends is used as a coping style.[23]

However this review has some important limitations (e.g., partly based on grey literature, poorly described methodology).[23] In addition, the scoping review on immigrant and refugee women in Canada suggested that social support facilitates social inclusion and health services use, but its generalizability to other refugees in different settings is unknown.[34]

Family reunion may positively impact refugee mental health, as it recovers the family structure and thereby provides a source of social support and a sense of purpose of starting a new life in the host society. This in turn may positively impact the mental health of refugees. The evidence base was rather weak, as only two scoping reviews suggested that family reunion was a protective factor for Southeast-Asian refugees[42] and war- and trauma-affected populations[28]. The finding of the Johnson et al. review was only based on one study.[28]

Parental disclosure can improve the mental health of (traumatized) refugee children. We found one recent systematic review relevant to this.[43] Dalgaard et al. assessed the effects of parental disclosure of past traumatic experiences on the psychological wellbeing of children in refugee families, using data from 25 studies (both quantitative and qualitative).[43] They found that parental disclosure (and not silencing) promotes psychological wellbeing of children, particularly when this is modulated such that it is developmentally timed (older aged) and done in a sensitive manner (affective communication).[43] However, there was considerable cultural diversity in the included refugees, and since parental disclosure is culturally embedded this could possibly have differential impact in different refugee population.[43]

Practicing religion might be a coping resource for refugees, to deal with adversity and to promote their mental wellbeing. Two systematic[23,39] and two scoping reviews[28,31] lend support to this hypothesis. The two systematic reviews indicated that prayer is an important coping resource for refugee children[39] and Syrian refugees[23]. Tempany suggested that religious beliefs are protective against mental disorders in Sudanese refugees,[31] while Johnson et al. indicated that religion provides emotional support to war- and trauma-affected populations (including refugees).[28]

Social conditions in the host country

The longer the time since displacement, the more time refugees have to resettle in the host society and to accept and restart their changed lives. Hence the mental health of refugees might possibly improve over time, but it should be noted that new mental health problems might also develop during resettlement (e.g., late-onset PTSD). One

meta-analysis[16] and one systematic review[22] addressed this topic. The meta-analysis by Steel et al. found that more years since conflict were negatively associated with both PTSD and depression.[16] For example, compared to refugees with 0-1 years since conflict, those with ≥6 years since conflict were 60% less likely to have depression or PTSD.[16] Bogic et al. found that the prevalence rates of either PTSD or depression tended to be somewhat lower among longer-displaced war refugees (≥10 years) than those with shorter displacement duration (<10 years).[22] Nonetheless, the prevalence rates remains higher than the general population.[22]

However, the actual mental health status of refugees and its improvement over time partly depends on the social conditions in the host country. The literature provides indications to suggest the relevance of various social conditions.

Proficiency of host country's language may improve integration and the likelihood of finding a job and place in the host society, positively affecting refugee mental health. The evidence base is weak, since only one scoping review found English language proficiency to be protective for the mental health of Southeast Asian refugees in the US.[42]

Availability of economic opportunities (e.g., job, business) for refugees could be a protective factor for their mental health. One comprehensive meta-analysis by Porter & Haslam found that economic opportunity (i.e., right to work, access to employment, maintenance of socioeconomic status) had positive, linear relationship with refugee mental health.[15] Specifically, refugees with unrestricted access/no status loss had much better mental health than those with highly restricted economic opportunity.[15]

Availability and access to culturally-sensitive and -competent mental health services might have a positive mental health impact among refugees. Two systematic reviews[39,44] and one scoping review on Canadian-based immigrants (including refugees)[27] addressed different aspects of mental health services. Based on one study only, Colluci et al. suggested that torture-affected patients were more willing to accept psychological counselling by tertiary centres if services were culturally sensitive and provided strong supportive role.[39] Kirmayer et al. suggested the beneficial effect of professional interpreters.[27] The Campbell systematic review by Wollscheid et al. also indicated that in health services (using three studies), interpretation services have a positive impact on communication quality, regardless of type of interpretation services (i.e., bilingual personnel, in-person/telephone/ad hoc interpreter).[44] However, all the studies in the Campbell review were done in the US and the authors concluded that the evidence was of low quality.[44]

Having private accommodation upon arrival may affect refugee mental health. One meta-analysis by Porter & Haslam addressed post-displacement accommodation.[15] They found that refugees with private, permanent accommodation had much better mental health than those with private, temporary accommodation, and especially compared to those in institutional accommodation.[15]

3.3 Reflection

The evidence on the risk and protective factors has some limitations. Most of the included studies used cross-sectional data, so causal inferences regarding the risk and protective factors cannot readily be made. Further, most studies were limited because they had small sample size and used non-random sampling, introducing the potential risk of selection bias. However, some reviews used qualitative data as well, in which the lack of representativeness is not necessarily an issue, and such data provides in-depth knowledge on how refugee mental health is shaped by either risk or protective factors. We referred to several reviews that were done on specific populations (e.g., Afghans, refugee children, war-affected populations), so their findings might not be readily applied to other refugee populations. Further, we referred to the meta-analyses by Steel et al. and Porter & Haslam, which used data from studies conducted in different settings (both low-income and high-income),[16] so their findings might not be fully applicable to the high-income context. Finally, since this report included reviews and meta-analyses only, individual studies assessing other factors might have been missed.

In conclusion, given these limitations caution is needed when drawing conclusions. It is, however, important to note that refugee health research is difficult to conduct because of the many practical and ethical issues. Despite this, the strengths of this research field are that many different factors at various domains have assessed in relation the mental health of refugees and asylum seekers. These factors have been assessed in different refugee populations, in multiple settings and with different methodology (qualitative, quantitative), which allows drawing more robust conclusions regarding their impact on mental health.

We have presented the available evidence on the risk and protective factors. We assume that this evidence base has relevance for a broad range of mental health indicators. There is evidence to conclude that low social support, lack of and distress due to social-cultural integration, low current SES (including loss of social status), certain conditions during asylum procedure and limited access to mental health services after resettlement are risk factors. On the contrary, high social support (including family reunion), practicing religion, parental disclosure, host language proficiency, available of economic

opportunities and private accommodation, and access to culturally competent mental health services act as protective factors. Those who experienced traumatic events during pre-migration phase, as well as elderly and women have an increased risk for developing mental health problems.

4 Interventions

In this section, we discuss the interventions which aimed to improve the mental health of refugees and asylum seekers. We categorize the interventions into primary prevention, secondary prevention, and treatment. Primary prevention is generally aimed at the whole refugee population, with the goal to promote the mental health of all refugees through promoting protective factors and reducing risk factors. For primary prevention, the focus in the literature is on the social conditions underlying mental health problems. Secondary prevention is intended to improve the mental health of those at risk for developing a disorder. In the literature, secondary prevention was done among traumatized refugee children, with the aim to prevent the development of mental disorders. Treatment is specifically aimed at those with disorders. The mental health field further distinguishes the interventions into universal, selective, and indicated, but we did not use this additional categorization, as it would have made the overview more complicated. To adequately categorize the intervention (i.e., at which prevention level, what type of intervention), we assessed the individual studies included in the reviews. This helped to determine the specific intervention studied and the study population among which the intervention was conducted.

It should be emphasized that this report includes reviews that focus on refugees and asylum seekers only, so the various interventions discussed below are the ones that have been specifically conducted among these populations. Interventions that have been studied in the general population (for example, to prevent depression), and which might have relevance for the refugees and asylum seekers as well, will not be discussed in this report. In addition, it should be noted that most studies included in this report have PTSD and depression as outcome measure. However, since we also found individual studies with effects on psychosocial problems and mental wellbeing, it can be assumed that the preventive interventions may have impact on a range of mental health indices. In Table 3, we have summarized the evidence on the various interventions conducted among refugees.

4.1 Primary prevention

We did not find any review that assessed the effectiveness of improving social conditions on health outcomes at primary prevention level. However, we did find a recent Campbell systematic review by Ott et al., which studied the effectiveness of

interventions aimed at improving economic self-sufficiency (e.g., employment rate, income) of resettled refugees.[45] No study met the inclusion criteria, so quality evidence is lacking.[45] However, we individually reviewed the excluded studies (n=25), mostly derived from policy documents, to find potential relevant information. We discuss four interesting quasi-experimental studies among refugees resettled in Scandinavian countries.[46-49] These studies assessed the effects of spatial dispersal policies on several socio-economic factors with known effects on refugee mental health (as discussed in the section 'Determinants of refugee mental health'). Aslund and his group conducted two studies in Sweden: one study found that being placed in a location with poor job access negatively impacted employment around 8-9 years later,[46] and the other suggested that being placed in welfare dependent community increased their risk of being long-term welfare dependent.[47] Both these outcomes are associated with poor mental health among refugees (see previous section). Damm conducted two studies in Denmark. In one study she found that being placed in a neighbourhood with larger proportion of non-Western immigrants was positively associated with higher annual earnings, independent of skill-level.[49] In the other study, Damm found that among refugee men an increase in the average skill level of non-Western immigrants in the neighbourhood was associated with higher likelihood of employment, and that employment rate of co-national men was positively associated with annual earnings.[48] The author suggests that this underlines the importance of ethnic social networks in sharing job information and finding employment.[48,49] Social networks and better social-economic indicators have a positive impact on refugee mental health (see previous section). Taken together, although these four studies have important limitations, it can carefully be suggested that spatial dispersal policies might play a role in shaping refugees' social-economic status and social network, which in turn might impact their mental health, although this has not explicitly been studied in the studies included in the abovementioned review.

4.2 Secondary prevention

School-based interventions

Different school-based interventions have been used for traumatized refugee children as secondary prevention. It is suggested that since schools provide a save and informal environment, parents are more willing to accept interventions within the school-setting, hence reducing the barriers to use mental health services.[50] Based on the reviews included in this report, we identified two types of school-based intervention.

School-based cognitive behavioural therapy (CBT) is the most widely studied and relatively most effective. In three systematic reviews,[50-52] we found seven unique

studies (of which four were experimental) that assessed the effectiveness of school-based CBT. These studies quite consistently found that CBT provided in a school-based context reduced PTSD and depressive symptoms among traumatized immigrant children (mostly refugees).

School-based creative art interventions for traumatized refugee children as secondary prevention have mixed results.[51] The creative art interventions may employ different therapies including creative play, drama, drawing, and music therapy. Using one systematic review, we found five experimental studies and one observational study that assessed these interventions. These studies found that the effects on depressive and PTSD symptoms were mixed among mostly traumatized refugee children. It should be noted that three of these studies were done by a singly research group from Canada, affecting the generalizability of these findings.

Multimodal interventions

Multimodal interventions include different treatment modalities (e.g., CBT, social counselling) and are largely individualised based on the client's needs.[51,53] This makes it difficult to make comparisons across studies. Multimodal interventions can be either community- or individual-based.

For community-based multimodal interventions, the evidence was weak for PTSD and depressive symptoms among traumatized refugee children. Based on two systematic reviews,[51,54] we found five unique studies (four observational and one experimental) assessing the effectiveness of multimodal interventions. These studies suggested that these interventions have mixed effects on depressive symptoms among traumatized refugee children. Only one study suggested positive effect on PTSD symptoms. It should however be noted that community-based interventions are more focussed on raising awareness, psycho-education and sensitisation, but these aspects were not empirically assessed.

For individual-based multimodal interventions, there is some evidence to suggest that these reduce PTSD and depressive symptoms among traumatized refugees. However, this was based on three unique observational studies (from two systematic reviews[53,55]), with important methodological limitations (e.g., unmeasured confounding, no controls).

4.3 Treatment

Cognitive Behavioural Therapy

There is relatively strong evidence suggesting that CBT is an effective intervention for treating PTSD and depression among refugees and asylum seekers with PTSD. In one systematic review,[55] we found eight experimental studies (one was recently published and not included in the review[56]) that assessed the efficacy of CBT among these specific populations, and these consistently found that CBT has positive effect on PTSD and depression. Of these studies, four assessed the efficacy of culturally-adapted CBT, with three being conducted among Southeast-Asian refugees in the US. Although culturally-adapted CBT might seem to have additional benefits, no study has yet compared culturally-adapted CBT with unadapted CBT.

Narrative Exposure Therapy

Narrative Exposure Therapy (NET) has some similarities with CBT. It also employs emotional exposure to traumatic memories, but it primarily aims at reorganizing these memories into a chronological narrative. In four systematic reviews[55,57-59] and one scoping review[60], we found ten unique experimental studies that assessed the efficacy of NET for refugees and asylum seekers with PTSD. These studies consistently indicate that NET is an efficacious therapy in reducing PTSD symptomatology. There was no effect on depression.

Eye Movement Desensitisation and Reprocessing

EMDR is an acronym for Eye Movement Desensitisation and Reprocessing. This therapy includes exposure to traumatic events with a focus on cognition and emotion, and it is sometimes complemented with horizontal eye movements. In two scoping reviews,[60,61] two experimental studies (one was recently published and not included in the reviews[62]) and one observational study suggested mixed effects of EMDR among refugees and asylum seekers with PTSD and depression symptomatology.

Multifamily intervention

Multifamily intervention represents psychotherapy and family therapy for refugees with PTSD. Based on two systematic reviews,[52,55] we found two experimental studies and one cohort study assessing the effectiveness of this intervention. However, the evidence

base was very weak, as only one experimental study considered a health outcome and found that multifamily intervention had positive effect on depression symptomatology.

Multimodal interventions

Individual-based multimodal interventions can also be used as treatment for refugees and asylum seekers with PTSD. In three systematic reviews,[53-55] we found eight unique observational studies. There is some evidence to suggest that these interventions might have a positive effect on PTSD, while the evidence for depression was mixed. It should be noted, however, that the available evidence was observational.

Pharmacotherapy

There is a dearth of studies on pharmacotherapy specifically targeting refugees with PTSD or depression. We found one recent experimental[56] and one observational study (included in a systematic review[59]), showing mixed effects on PTSD and depression. Since both studies used different pharmacological interventions, it is impossible to make any general statements. Note that according to the WHO guidelines the first line of treatment for PTSD is cognitive-based therapy and not pharmacotherapy.[63]

4.4 Reflection

The intervention studies included in this report had some important limitations. For some interventions only observational data were available, with the effectiveness being tested with pre- and post-intervention assessment. Hence caution is needed in drawing conclusion. Further, most interventions were lacking proper controls (e.g., patients on waiting lists). In some studies the interventions were not clearly defined or specified, making it difficult to comprehend what constituted the intervention (especially relevant for multimodal interventions). Providing such information would allow making better comparisons across studies. In a couple of studies the study populations were either poorly described or heterogeneous such that the study population consisted of both traumatized refugees with and without PTSD. This makes it difficult to assess whether an intervention should be considered secondary prevention or treatment. In addition, most interventions were done among refugees and asylum seekers with PTSD, and it is unknown whether the effects would be different for those with depression. Other important limitations were the high attrition rate, poor treatment compliance, and lack of follow-up assessment in some studies.

In addition, because of the selection of reviews, we discussed the interventions conducted among refugees and asylum seekers only. We do recognize that this does not cover the whole range of evidence-based interventions that are available for people with PTSD and depression. For example, a meta-analysis of 37 experimental studies indicated that either venlafaxine or fluoxetine is superior to placebo in treating major depression in the general population.[64] A Cochrane review of three experimental studies found that stress management is efficacious for PTSD (compared to usual care or waiting-list control) in the general population.[65] As these interventions have not been tested among refugees and asylum seekers specifically, the methodology we used does not allow for a conclusion on the efficacy of these kinds of therapies in refugee and asylum seeking populations.

In conclusion, interventions at different levels seem to positively impact the mental health of refugees and asylum seekers. Although the mental health effects of primary prevention interventions have not been assessed, we could reasonably assume that spatial dispersal policies may indirectly affect refugee mental health, through social-economic status and social network. For secondary prevention, school-based CBT seems to be an effective intervention in reducing mental health problems among traumatized refugees. The findings for creative art interventions were mixed, while the evidence base of multimodal interventions is currently weak. Hence more research is needed with preferably experimental data. For treatment, we observed that cognitive-based interventions, such as CBT and NET, were the most-widely studied, often using experimental data. Hence the evidence is relatively strong to conclude that for PTSD treatment CBT and NET seem to be efficacious, whereas for depression treatment only CBT is efficacious. Currently, the evidence base is too weak to indicate whether other interventions (e.g., pharmacotherapy) are effective as treatment. However, there is some preliminary evidence suggesting that multimodal interventions as treatment might also have a beneficial impact on PTSD.

It should be noted that the relative extensive evidence on CBT might reflect the convenience to study this intervention among refugees and asylum seekers, while interventions at primary prevention level are difficult to conduct. Also, the popularity of CBT (and NET) within the field might help explain why CBT has been more rigorously studied than other treatment modalities. More studies on primary prevention interventions are strongly needed, as these interventions reach much more refugees (both those with and without symptoms) and might have a larger population impact. In addition, other interventions at secondary prevention and other treatment modalities should be studied further, thereby diversifying the evidence base. It is possible that interventions shown to be efficacious in the general population might not have similar

effects among refugees and asylum seekers, given the high co-occurrence of PTSD and depression and continued high stress levels in the host country (e.g., due to discrimination, uncertainty). More research specifically targeting refugees and asylum seekers would provide mental health practitioners more evidence-based options for these groups.

5 Conclusions

The aim of this report was to review the available evidence on the mental health of refugees and asylum seekers in high-income countries. We formulated three research questions. First, have refugee and asylum seeking populations increased risk for mental disorders as compared to host population and regular migrants in high-income countries? If so, for which disorders specifically? Second, what are the potential risk factors as well as the protective factors for the mental health of refugee and asylum seeking populations, predominately in resettlement phase? Third, which interventions have shown effectiveness for refugee and asylum seeking populations? Based on the available evidence derived from the meta-analyses and reviews, we have drawn five conclusions in this report.

1 Between 13-25% of refugees and asylum seekers have either PTSD and/or depression

Based on the evidence from higher-quality studies (i.e., those with probability sampling, sample size ≥500, and diagnostic interview used as measure), we conclude that 13-25% of the refugees and asylum seekers suffer from either PTSD and/or depression. There seems to be high co-occurrence of PTSD and depression. The lower-quality studies indicate higher prevalence rates. There is some evidence to suggest that the prevalence rate of either PTSD and/or depression tend to decrease over time. However, the prevalence rate among refugees and asylum seekers remains higher relative to the general population and some regular migrants in the host countries, even 6-22 years since displacement.

With this conclusion we do not want to suggest that the remaining 75-87% of the refugees and asylum seekers do not suffer from mental health problems at all. As the meta-analyses and reviews relied upon in this report define mental health according to the presence or absence of mental disorders, we could only draw a conclusion regarding the prevalence of PTSD or depression. We are fully aware, however, of the fact that mental health is more than the presence of absence of a mental disorder. This implies that although the majority of the refugees and asylum seekers will not suffer from either PTSD or depression, they might experience psychosocial problems (e.g., distress).

2 *There is important variation in the prevalence of mental health problems within the refugee and asylum seeking populations*

Evidence indicates a large variation in the prevalence of PTSD or depression within the larger refugee and asylum seeking population, with some specific groups having higher rates. This variation is likely to be observed for other (less severe) mental health problems as well. Women and older refugees (also relevant to children) have a higher risk of mental health problems. It is suggested that older refugees and asylum seekers are less able to cope with changing situations and might have less coping resources to deal with adversity or stress.[66] Higher risk of mental health problems among women is also observed in the general populations in high-income countries.[67,68] The higher risk among women might therefore probably reflect a biological predisposition along with sociological explanations. In addition, evidence suggests that unaccompanied refugee children have higher risk of developing mental disorders. Several studies indicate that the more traumatic events the refugees experienced before resettlement, the more likely they are of having mental disorders. This also applies to those who have experienced torture or sexual violence – constituting around 20-30% of the refugees –, suggesting that the severity of trauma plays a role as well.

3 *The actual mental health of refugees and asylum seekers depends on the social conditions in the host country*

The large variation in the prevalence rate of mental disorders, as discussed in the second conclusion, is not only related to the personal characteristics of refugees and asylum seekers (e.g., age, sex), but also to the social conditions in the host country. In other words, among these groups the exposure to potentially traumatic events does not necessarily translate into mental disorders. Instead the risk of mental disorders is dependent on social conditions in the host country. This evidence base clearly has some limitations (e.g., cross-sectional data, non-random sampling, specific refugee population). Despite this, we observed that the presence of (informal) social support has positive effect on refugee mental health, whereas the lack thereof is associated with poor mental health. Evidence also pointed out that practicing religion might serve as a protective factor for refugee mental health. This positive effect might work through spirituality, identity and purpose formation, and support from religious community.[69,70]

Our findings indicate that lack of integration as well as distress due to social-cultural integration negatively impact the mental health of refugees and asylum seekers. These difficulties constitute poor host language skills, discrimination, and problems due to cultural adjustment. On the contrary, evidence base for the positive aspects of social-

cultural integration is currently underdeveloped. However, social-cultural integration such as acquiring host language proficiency seems to improve refugee mental health.

The available evidence also suggests that low current SES in the host country is detrimental for the mental health of refugees and asylum seekers. Relatedly, we observe that loss of social status among refugees worsens the risk of mental disorders. Indeed, those with high pre-migration SES might feel frustrated and distressed, if their qualifications or skills are not being recognized and if they become welfare-dependent. By contrast, it is suggested that refugees with access to employment and no status loss have better mental health than those without. Conversely, it is important to note that good mental health is a prerequisite for successful social-cultural and -economic integration of refugees and asylum seekers.

Finally, there is some evidence indicating that certain conditions during asylum procedure affect refugee mental health. The specific conditions are: uncertainty regarding legal status and procedure, detention (i.e., liberty deprivation), and frequent changes in accommodation. Conversely, better accommodation conditions (e.g., private, permanent) tend to be associated with better mental health of asylum seekers.

4 *Interventions to improve these social conditions might have mental health benefits, but limited research has been done to show their effect*

Based on the observational evidence as described above, it is reasonable to suggest that improving these social conditions may positively impact the mental health of refugees and asylum seekers. It should be noted, however, that experimental evidence is generally limited regarding the primary and secondary prevention interventions that work on these conditions. As for primary prevention, there is some evidence indicating that spatial dispersal policies might shape job opportunities and social networks, which are likely to positively impact refugee mental health. As for secondary prevention, school-based interventions are studied among traumatized refugee children, but the effects on mental health problems are mixed. Multimodal interventions (e.g., psychotherapy, social counselling) have a weak evidence base.

5 *Cognitive-based therapies are efficacious for refugees and asylum seekers with PTSD or depression, but access to mental health services should be improved*

Experimental evidence suggests that as treatment for refugees and asylum seekers with PTSD or depression, cognitive-based therapies (e.g., CBT and NET) are efficacious. Specifically, evidence indicates that CBT is efficacious for depression and PTSD,

whereas NET works for PTSD only. It should be noted that cognitive-based therapies are most widely studied. In addition, observational evidence suggests that multimodal interventions are effective for refugees with PTSD, while the effects are mixed for depression. For the other treatment modalities (e.g., EMDR, pharmacology), the evidence base is weak.

Despite this, the available evidence suggests that refugees and asylum seekers experience barriers in accessing mental health services. These barriers are due internal factors (e.g., low priority on mental health, stigma) but also because of external factors such as lack of information on services, distrust, and lack of cultural-sensitive and -competent services. Consequently, mental health services are underutilized, leading to unmet needs among some refugees and asylum seekers who are in need of help. So even though evidence-based treatment modalities exist, access to mental health services remains problematic and hence requires attention.

6 Relevance for the Netherlands

In the Netherlands, around 59.000 refugees and asylum seekers arrived in 2015, with the projections for 2016 and 2017 suggesting higher levels.[4] The majority of the refugees are likely to stay, as recently indicated in a Dutch report.[37] Here, we discuss the relevance of the conclusions as drawn in the previous section for the Dutch context, thereby considering the significant Dutch studies and local and national policy developments. Important to note, we do not provide an exhaustive overview of the published Dutch studies.

Prevalence of mental disorders

We concluded that 13-25% of the refugees and asylum seekers have either PTSD or depression or both. The studies available for refugees and asylum seekers in the Netherlands show prevalence rates which fall between the range 16-37%. For example, a recent Dutch study suggested that the point-prevalence rate of PTSD is 16.3% among refugees from Afghanistan, Somalia, and Iran.[71] Interestingly, 50% of the cases developed several years upon arrival, referred to as late-onset PTSD.[71] Other Dutch studies found higher prevalence rates. For example, a study among Iraqi asylum seekers found that the lifetime prevalence rate for depression and PTSD are 34.7% and 36.7%, respectively (no data available on point-prevalence).[72] Relatively high prevalence rates of PTSD and depression were also observed among refugees and asylum seekers in the studies by Gerritsen et al.[73] and Gernaat et al.[74], with high risker for those from Afghanistan and Iran[73]. It should be mentioned, however, that these prevalence rates result from individual studies which could be subject to important limitations (e.g., small sample size), resulting in higher prevalence rates than the adjusted prevalence as indicated in the meta-analyses.

Compared to the general population and regular migrants living in the Netherlands, the pattern regarding the prevalence rates of PTSD and depression among refugees is rather diverse. The rates among refugees are higher than those of the general Dutch population, which has a prevalence for depression of 6%[75] and PTSD of 2.6%[76]. Compared to the regular migrant populations, the pattern for depression is heterogeneous: some populations have lower prevalence rates (e.g., Surinamese, Ghanaians) while others have higher (e.g., Turkish, Moroccans).[77] To our knowledge, there are no population-based studies on PTSD among different migrant populations in the Netherlands.

Variation in refugee mental health

There is considerable variation in the prevalence rate of mental disorders, such that older and female refugees as well as unaccompanied children and trauma-affected refugees (including torture) have higher prevalence rates. The was also found for female refugees in a Dutch study.[72] These high-risk groups might require additional attention by both policymakers and practitioners, so that proper and quality mental health support can be provided. It is encouraging to see that municipalities in the Netherlands agreed to develop specific policies for unaccompanied asylum seeking children, with the aim to provide stable and safe conditions.[78]

Social conditions in the Netherlands

The literature review indicated several social conditions in the host country that impact the mental health of refugees and asylum seekers. Most of these conditions seem to have relevance for the Dutch context as well. For example, practicing religion and receiving social support, particularly from family, have been shown to improve refugee mental health. The positive effect of religion is relevant for the current situation, as the majority of refugees resettling in the Netherlands have a religious background.[79] Dutch studies among refugees and asylum seekers indicated that social support from family is associated with better mental health.[80,81] The findings on informal social support and religion suggest that self-help groups might potentially be effective in improving refugee mental health. Furthermore, conditions that facilitate religious practicing (e.g., providing prayer room in temporary accommodation) and family reunion might prove beneficial.

We found that lack of integration as well as distress due to social-cultural integration negatively impact refugee mental health. Consistent with our findings, a Dutch study found that more problems in acquiring the new culture (e.g., language difficulties, unfamiliarity with customs) were longitudinally associated with higher scores on PTSD and depression among resettled refugees.[80] Policymakers and several public institutions rightly emphasize the importance of social-cultural integration of refugees, but awareness is also needed of the distress that social-cultural integration may generate. We suggest that integration efforts along with the necessary support, either from self-help groups, school or public institutions, might prove beneficial in promoting social-cultural integration and in buffering its negative aspects. A recent report of the Netherlands Institute of Human Rights recommended that the Dutch government should play an active role in integrating refugees, by financing integration programs as well as by intensifying support.[82] Promisingly, the recent agreement by the Dutch municipalities

indicated that more financial resources will be made available to provide practical help and support for improving integration and participation of refugees.[78] The findings in this report indicate that these efforts might have mental health benefits as well.

We also suggested that the low current SES of refugees determines poor mental health. This is relevant for the Netherlands, as several reports have found relatively low employment, high welfare dependence, and low household SES among refugees resettled in the Netherlands.[37,79,83] Indeed, a recent prospective Dutch study suggested that even though refugees' labour participation increased over 15 years, it remains much lower than that of regular migrants and the general population.[37] Similar to our findings, two Dutch studies found that unemployment and financial difficulties are associated with poor mental health among refugees[80] and asylum seekers[84]. Previous policies might have worked insufficiently, so the current situation should be seen as an opportunity to develop better policies and programs to enhance refugees' social-economic integration and their mental health. This resonates with the recent calls of WRR[37] and the Netherlands Institute of Human Rights[82]. Specifically, the WRR recommended that asylum seekers should be allowed to work and study during asylum procedure.[37] Interestingly, the municipality of Amsterdam has initiated a pilot to provide work and education opportunities to refugees upon arrival in the municipality.[85] In addition, municipalities have agreed to actively work on bringing refugees in contact with relevant services and different organisations (including potential employers), with the aim to enhance their social-economic integration.[78] Furthermore, the lobby organisation of the Dutch employers VNO-NCW has stated that it is intended to play its part in creating job opportunities for refugees and asylum seekers, indicating that the private sector can play an important role as well.[86] The WRR also recommended that spatial dispersal policies should explicitly consider the local job opportunities, so that refugees are preferably placed in municipalities with sufficient job opportunities.[37] This is supported by our findings, as studies from Scandinavian countries also show that spatial dispersal policies are effective in promoting job access and employment.[46-49] The positive impact of social-economic integration on the mental health of refugees and asylum seekers provides an additional argument to strive for job opportunities for these groups.

In addition, we concluded that certain conditions during asylum procedure have a negative mental health impact. Several Dutch studies have addressed this issue. Goosen et al. found that asylum procedure is considered the most important stressor for hospital-treated suicidal behaviour among asylum seekers.[87] Laban et al. showed that compared to Iraqi asylum seekers with short asylum procedure (<6 months), those with long asylum procedure (2+ years) were twice as likely to have psychopathology.[72] This was

also found in another more recent Dutch study, which additionally showed that long stay in the asylum centre (>5 years) and temporary residence status negatively affect the social-economic integration of refugee populations.[88] A well-conducted study suggested that frequent relocations (>1 per year) was associated with increased incidence of mental distress in asylum seeking children.[89] This impact tended to be stronger among those who experienced trauma and among those whose mothers were diagnosed with PTSD or depression.[89] This suggests that certain conditions during asylum procedure need to be improved. In the Netherlands, several public institutions have similar calls, including a coalition of 158 social organisations.[37,82,90] Encouragingly, the Dutch municipalities have agreed to build more reception centres to accommodate asylum seekers to reduce the number of relocations.[78] They also agreed to take necessary measures to ensure quicker transition to permanent accommodation.[78] These are positive developments which are imperative if the mental health status of asylum seekers is to be improved.

Primary and secondary prevention

There is a dearth of primary and secondary prevention interventions in the literature. It seems that spatial dispersal policies play an important role in shaping the SES and social networks of refugees. As these conditions in turn impact refugee mental health, such policies could be used as an instrument to improve outcomes for refugees (see the WRR's recommendation above[37]). For secondary prevention school-based CBT is effective for traumatized refugee children. In school-based interventions the role of teachers and school is crucial. But a recent survey among 235 school executives in the Netherlands suggested that schools experience difficulties in dealing with traumatized refugee children, due to lack of proper training and expertise, and language and cultural barriers.[91] A Dutch report on unaccompanied refugee children found that teachers generally fail to report if an unaccompanied refugee child exhibits severe psychosocial problems during classes.[92] As such, it is important to provide the necessary training and support to teachers and school before implementing school-based interventions for traumatized refugees. In addition, more research is needed, particularly evaluation or natural experiment studies that assess the effectiveness of primary prevention interventions related to accommodation, work, or other domains.

Access to mental health services

We found that for refugees and asylum seekers with PTSD or depression effective cognitive-based therapies (e.g., CBT and NET) are available, but that they experience barriers in accessing mental health services. This is a relevant issue for the Netherlands,

as a recent Dutch study showed that only 20% of the refugees with PTSD use mental health services.[71] This figure increased to 54% over the 7-year follow-up period, but still remains relatively low.[71] Another study by Laban et al. found that only 9% of the asylum seekers with mental disorder visited a mental health worker.[84] Similar finding were observed in other Dutch studies.[74,92,93] The recent covenant between mental healthcare providers and health insurer might possibly improve this situation.[94] It was agreed to take necessary measures to improve the quality of mental health services (including prevention) along the whole chain for asylum seekers.[94] However, this covenant applies to those in asylum procedure only, while no specific plans have been made for refugees resettled in the municipalities. It is quite likely that resettled refugees with PTSD or depression will experience significant barriers in accessing proper and quality mental health services, as local healthcare providers might lack the necessary skills for providing cultural-competent mental health services. Hence, policies should be developed to improve the access of mental health services in the municipalities where refugees will resettle and use healthcare.

7 Overall conclusion

This report reviewed the available evidence on the mental health of refugees and asylum seekers. We conclude that 13-25% of these populations are suffering from either PTSD and/or depression, a prevalence that is higher than that of the general population and most regular migrants in high-income countries. Important to mention, this figure does not provide a complete picture of the mental health status of refugees and asylum seekers, as we did not specifically assess mental wellbeing and psychosocial problems. To improve the mental health of refugees and asylum seekers, a public health approach is needed that specifically aims to improve the social conditions in the host country. In fact, several public institutions have recently made similar calls for other purposes, such as economic reasons or integration. In that sense, the recommendations made from a public health perspective reinforce the urgency of measures that have been argued for by other policy sectors. It is important to note that mental health conversely might impact social outcomes including social-cultural and -economic integration. Additionally to the measures promoting healthy social conditions, measures need to be taken in healthcare. Specifically, access to mental health services, particularly in the municipalities, should be improved for refugees and asylum seekers with PTSD or depression.

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Tables

Table 1 Overview of reviews with prevalence rates for PTSD, depression and other mental disorders among refugees and asylum seekers.

Mental disorder	Authors	Study population	Host country	# Included studies	Prevalence	Comments
PTSD	Steel et al. (2009)[16,a]	Adult refugees	Global	145	13-25%	Prevalence rate after taking methodological factors into account. Unadjusted prevalence rate was 31%
	Lindert et al. (2009)[17,a]	Adult refugees	Mostly high-income countries	18	36%	Unadjusted prevalence rate
	Fazel et al. (2005)[18,a]	Adult refugees	High-income countries	9	9%	Only large studies selected, 75% of refugees from Southeast Asia resettled in the US
	Fazel et al. (2005)[18,a]	Refugee children	High-income countries	5	11%	Small studies (n=260)
	Alemi et al. (2014)[19,b]	Afghan refugees	High-income countries	5	25-50%	
	Slewa-Younan et al. (2015)[20,b]	Adult Iraqi refugees	High-income countries	6	8-37%	
	Bronstein & Montgomery (2011)[21,b]	Refugee children (<25 yrs)	High-income countries	7	19-54%	
	Bogic et al. (2015)[22,b]	Adult war-affected refugees ≥5 yrs after displacement	High-income countries	8	4-61%	Median 9 yrs after displacement
	Quosh et al. (2013)[23,b]	Syrian refugees	Lebanon, Turkey	3	36-76%	

Mental disorder	Authors	Study population	Host country	# Included studies	Prevalence	Comments
Depression	Fazel et al. (2005)[18,a]	Adult refugees	High-income countries	6	5%	Major depression, see also above
	Steel et al. (2009)[16,a]	Adult refugees	Global	117	8-25%	Prevalence rate after taking methodological factors into account. Unadjusted prevalence rate was 31%
	Lindert et al. (2009)[17,a]	Adult refugees	Mostly high-income countries	16	44%	Unadjusted prevalence rate; rate: no effects of sampling methods and sample size were observed. Labour migrants: 20%
	Alemi et al. (2014)[19,b]	Afghan refugees	High-income countries	5	45-57%	
	Slewa-Younan et al. (2015)[20,b]	Iraqi refugees	High-income countries	7	28-75%	
	Quosh et al. (2013)[23,b]	Syrian refugees	High-income countries	2	54-60%	
	Bronstein & Montgomery (2011)[21,b]	Refugee children (<25 yrs)	High-income countries	3	3-30%	
	Bogic et al. (2015)[22,b]	Adult war-affected refugees ≥5 yrs after displacement	Mostly high-income countries	9	3-55%	Median 9 yrs after displacement

Mental disorder	Authors	Study population	Host country	# Included studies	Prevalence	Comments
Anxiety	Fazel et al. (2005)[18,a]	Refugees	High-income countries	5	5%	
	Lindert et al. (2009)[17,a]	Adult refugees	Mostly high-income countries	10	40%	Labour migrants: 21%
	Bogic et al. (2015)[22,b]	Adult war-affected refugees ≥5 yrs after displacement	Mostly high-income countries	2	25%	Refugees from the Middle East and Sub-Saharan Africa. Median 9 yrs after displacement
	Alemi et al. (2014)[19,b]	Afghan refugees	High-income countries	2	12-39%	
	Quosh et al. (2013)[23,b]	Adult Syrian refugees	Turkey	1	53%	One study
Psychotic illness	Fazel et al. (2005)[18,a]	Adult refugees	High-income countries	2	2%	Small studies (n=226)
	Parrett & Mason (2010)[24,b]	Refugees	Sweden	2	NS	Higher risk; 1 study found: RR=2.0 vs host population, RR=1.5 vs labour migrants

NS=not specified. Only disorders with at least two reviews/meta-analyses were included in this table.

[a] meta-analysis.
[b] systematic review.

Table 2 Overview of reviews with risk and protective factors for mental health problems in refugees and asylum seekers.

Domain	Factor	Sub-factor	Literature	Evidence	Comment
Personal characteristics	Socio-demographics	Older age	1 meta-analysis[15]	-	Based on 2 studies
			2 systematic reviews[21,22]	0[22], -[21]	
			2 scoping reviews[27,28]	-	
		Female sex	2 meta-analysis[15,16]	0[16], -[15]	
			2 systematic reviews[21,29]	-	Only children, 3 out of 15 studies overlapped in both reviews
		Unaccompanied children	2 systematic reviews[21,29]	-	2/6 studies overlapped
			1 scoping review[27]	-	
	Pre-migration	Potentially traumatic events experienced	1 meta-analysis[16]	-	
			4 systematic reviews[19,21,22,29]	-	2 reviews on children
			2 scoping reviews[30,31]	-	
		Torture experienced	1 meta-analysis[16]	-	
			1 systematic review[25]	-	
		Sexual violence	1 meta-analysis[32]	-	Mostly based on studies conducted in Africa
	Psychological coping	Focusing on present and future (not the past)	1 scoping review[42]	+	Only Southeast-Asian refugees in the US
		Normalization/ acceptance of difficulties; silence, and distraction	1 scoping review[31]	+	Sudanese refugees, based on 2 Australian studies only

Domain	Factor	Sub-factor	Literature	Evidence	Comment
Family and community networks	Social support	Small networks and low social support	4 systematic reviews[19,21,22,33]	-	1/11 studies overlapped
		Isolation and forced separation	1 systematic review[19]	-	Only Afghan refugees
		Informal network as source of conflict	1 scoping review[34]	-	Only immigrants in Canada
		Social support from informal network	3 systematic review[29] 23,39	+	
			5 scoping reviews[28,31,34,40,42]	+	
		Family reunion	2 scoping reviews[28,42]	+	1 review included 1 study only.[28] The other included only Southeast-Asian refugees[42]
	Parental role	Parental disclosure of past traumatic experiences	1 systematic review[43]	+	
	Practicing religion	Praying	2 systematic reviews[23,39]	+	
		Religious beliefs	2 scoping reviews[28,31]	+	
Social conditions in the host country	Social-cultural integration	Poor host language skills	2 systematic review[19,33]	-	Only Iranian and Afghan refugees
			1 scoping review[30]	-	Only refugee children
		Host language proficiency	1 scoping review[42]	+	Only Southeast-Asian refugees in the US
		Discrimination	2 systematic reviews[29,33]	-	
			1 scoping review[27]	-	Only immigrants in Canada

Domain	Factor	Sub-factor	Literature	Evidence	Comment
		Difficulties in adjusting to cultural differences	2 systematic reviews[19,33]	-	Only Iranian and Afghan refugees
			1 scoping review[31]	-	Only Sudanese refugees
	Loss of social status	→	1 meta-analysis[15]	-	
			1 systematic review[19]	-	Only Afghan refugees
			1 scoping review[27]	-	Only immigrants in Canada
	Low current SES	à	4 systematic reviews[19,22,29,33]	-	
			2 scoping reviews[27,30]	-	
	Economic opportunities	à	1 meta-analysis[15]	+	
	Conditions during asylum procedure	Uncertainty regarding legal status and procedure	2 systematic reviews[19,21]	-	
			1 scoping review[30]	-	Only children
		Changes in residence	1 meta-analysis[16]	-	
			1 systematic review[29]	-	Only children
		Private, permanent accommodation	1 meta-analysis[15]	+	
		Detention	1 systematic review[38]	-	Based on 3 small studies
	Mental health services	Underutilization and unmet needs	1 systematic review[39]	-	
			3 scoping reviews[27,34,40]	-	

Domain	Factor	Sub-factor	Literature	Evidence	Comment
		Different barriers in access	3 systematic reviews[19,33,39]	-	Inter alia: lack of information on services, lack of culturally competent services
			1 scoping review[41]	-	
		Interpretation services	1 systematic review[44]	+	Assessed communication quality only
			1 scoping review[27]	+	
		Culturally-sensitive services	1 systematic review[39]	+	Based on 1 study
	Longer time since displacement	à	1 meta-analysis[16]	+	
			1 systematic review[22]	+	Based on two studies among Southeast-Asian refugees in North America

+ positive effect on mental health.
- negative effect.
0 no effect.
SES=socio-economic status.

Table 3 Overview of reviews that assessed the effectiveness of interventions for the mental health of refugees and asylum seekers.

Stage	Intervention	Literature	Experimental vs observational	Study population	Evidence		Comment
					PTSD	Depression	
Primary prevention	Interventions to improve economic self-sufficiency	1 systematic review[45]	No studies found	Resettled refugees	NA	NA	
Secondary prevention	School-based CBT	3 systematic reviews[50-52]	7 studies: 4 experimental, 3 observational	Traumatized immigrant children, mostly refugees	+	+	
	School-based creative art interventions (music, creative play, drama, drawing)	1 systematic review[51]	6 studies: 5 experimental, 1 observational	Traumatized refugee and immigrants seeking children	Mixed	Mixed	3 studies from the same first-author (Rousseau) conducted in Canada. For depression, one observational study showed positive effect, while the other experimental study (with music therapy) showed negative effect on internalizing symptoms
	Community-based multimodal interventions (different treatment modalities)	2 systematic reviews[51,54]	5 studies: 1 experimental, 4 observational	Traumatized refugee children	+	Mixed	For PTSD, 1 study only
	Individual-based multimodal interventions	2 systematic reviews[53,55]	3 observational studies	Traumatized refugees (including torture)	+	+	

Stage	Intervention	Literature	Experimental vs observational	Study population	Evidence		Comment
					PTSD	Depression	
	NET	4 systematic reviews[55,57-59], 1 scoping review[60]	10 experimental studies[a]	Refugees and asylum seekers with PTSD	+	0	
	EMDR	2 scoping reviews[60,61]	3 studies: 2 experimental[b], 1 observational	Refugees and asylum seeker with PTSD	Mixed	Mixed	The recent RCT by Acarturk et al. 2015 was conducted among Syrian refugees in camps in Turkey
	Multifamily intervention (e.g., psycho-therapy and family therapy)	2 systematic reviews[52,55]	3 studies: 2 experimental, 1 observational	Refugees with PTSD	NA	+	For depression, 1 experimental study only. The other 2 studies assessed other outcomes besides health (e.g., mental health visits, social support, trauma knowledge). 2 studies were from the same author (Weine)
	Multimodal interventions	3 systematic reviews[53-55]	8 observational studies	Refugees and asylum seekers with PTSD and/or depression	+	Mixed	For PTSD, 4 out of 6 studies found positive effect (2 with no effect). For depression, 4 out of 7 studies showed positive effect (3 with no effect)

\+ positive effect on mental health.
\- negative effect on mental health.
0 no effect on mental health.
NA=not applicable.

[a] Given the sufficient number of experimental studies, observational studies were not considered.
[b] One recent RCT (Acarturk et al. 2015) was not included in the scoping reviews.

Annexes

1 Experts who were interviewed for this report

2 Database search as used for this report

3 Overview of meta-analyses and systematic reviews (n=32) on the mental health of refugees and asylum seekers

4 Overview of scoping and narrative reviews (n=12) on the mental health of refugees and asylum seekers

5 Conceptual model of refugee mental health

Annex 1 Experts who were interviewed for this report

Name	Position	Institution
Dr. Simone Goosen	Senior policy advisor	GGD GHOR
Prof. dr. Joop de Jong	Emeritus professor of cultural and international psychiatry	University of Amsterdam, founder of Healthnet TPO
Prof. dr. Anton Kunst	Professor of Social Epidemiology	University of Amsterdam
Prof. dr. David Ingleby	Emeritus professor of intercultural psychiatry	Utrecht University
Dr. Peter Ventevogel	Senior mental health officer	UNHCR, Geneva
Prof. dr. Annemiek Richters	Professor of anthropology of health, care and body	University of Amsterdam
Dr. Evert Bloemen	Primary care physician, researcher	Pharos
Dr. Ruud Jongedijk	Psychiatrist, director	Stichting Centrum ’45 and Equator Foundation
Dr. Sander Kramer	Psychologist, researcher	Utrecht University

Annex 2 Database search as used for this report

Database	Search terms	Hits	Selected
Cochrane (24-11-2015)	refugee OR asylum	4	1
Web of Science (11-12-2015)	TS=(refugee* OR "asylum seeker*") AND TS=("mental health" OR wellbeing OR depressi*) AND TI=(review OR "meta-analysis")	78	12
EBSCOhost (CINAHL) (25-11-2015)	refugee OR asylum	13	2
PsycINFO (9-12-2015)	(refugee OR asylum [tiab]) AND ("mental health" OR psychological OR wellbeing [tiab]) AND ("systematic review" OR "meta-analysis" OR review [title])	124	6
Embase + Embase Classic (MEDLINE) (13-12-2015)	(refugee* OR asylum OR asylum seeker*).ab. AND (mental health OR mental disease* OR psychological OR wellbeing).ab. AND (systematic review OR review OR meta-analysis).ti	53	1
Pubmed (13-12-2015)	(refugee* OR asylum seeker* OR asylum [tiab]) AND ("mental health" OR "mental disease* OR psychologic* OR wellbeing [tiab]) AND ("systematic review" OR review OR "meta-analysis" [title])	51	2
Sociological Abstract (24-11-2015)	ab(refugee OR asylum) AND ab("mental health" OR wellbeing), title(review)	5	0
Campbell Collaboration (24-11-2015)	refugee OR asylum	9+	3
Google Scholar (28-12-2015)	allintitle: refugees OR refugee AND "systematic review" OR "meta-analysis"	53	3
Manual searching through reference lists and received from experts	-	-	15

Annex 3 Overview of meta-analyses and systematic reviews (n=32) on the mental health of refugees and asylum seekers

Authors	Aim	Study population	Search period	# Included studies	Mental health outcomes	Limitations
Alemi et al. 2014 (Mixed-method systematic review)	Assessed mental health and its associated risk factors	Afghan refugees residing in high-income countries	1979-2013	17: 1 mixed-method, 7 qualitative, 9 quantitative	Multiple outcomes	Quantitative: small samples, non-probability sampling, no proper statistical adjustment
Findings	Qualitative part >> Most post-migration stressors are related to cultural adjustment difficulties: • Discordance between parent (traditional, familial values) and their children (adopting Western values). • Changing gender roles, leading to perceived loss of social status among men (also dependency on public assistance affects the social status of men [undermines self-esteem and dignity], as well as no recognition given to professions earned in Afghanistan). • English language problems – associated with unemployment and financial hardship, also with access to mental health care and isolation. • 'Thinking too much' due to joblessness, loneliness, separation from family. • Lack of language-appropriate care and culturally congruent mental health care services being regarded as a barrier to obtaining help. • Coping: self-care, 'keeping oneself busy', praying, engaged in religious activities esp for women, talking with friends (physicians are perceived to only address physical health problems). - For dealing with psychosocial problems Afghans employ their friends/informal networks, mainly due to the lack of knowledge and distrust in mental health services (also stigma associated with help-seeking). • Quantitative part >> relatively high prevalence of PTSD (25-50%), depression (45-57%), anxiety (12-39%). Risk factors: English language proficiency (important), forced separation from family members, lower social support, legal status (only in the Netherlands, being asylum seeker), loss of culture and values, education, financial concerns. Traumatic war experiences are re-experienced due to rumination that is linked with isolation and loneliness in post-migration phase. • Psychological distress is more associated with the long-term effects of 'being uprooted' (=cultural shock, ie, a stress response to a new situation in which former patterns of behavior are ineffective), particularly for elderly. "Cultural shock may lead to a sense of cultural confusion, feelings of alienation, isolation and depression" (pp. 1256).					
Bogic et al. 2015 (Systematic review)	Assessed long term impact of war on mental health and its correlates	Adult war-affected refugees ≥5 yrs after displacement, mostly in high-income countries	Inception-2014	29 (13 high-quality)	• PTSD • Depression • Unspecified anxiety	• Some risk of publication bias • Heterogeneity in studies • Mostly cross-sectional studies • Lack of reliable and valid instruments for refugees • See other limitations in paper

Findings	• Large heterogeneity among studies. • Variation in prevalence of mental disorders, with studies with higher methodological quality reporting lower prevalence rates. • Depression (median time displacement 9yrs): 2.5-55% in higher quality (n=9) vs 2.3-80% in lower quality. • Two longitudinal studies among SA refugees indicated that the prevalence rate of depression decreased substantially over time during their 10-year resettlement period in North America. • Unspecified anxiety (median time 9yrs): 23.9-54.4% in higher methodological quality studies (N=3), two from Europe among refugees from Middle East or SSA with rates of 23.9 and 27.3%. • PTSD (median time 9yrs): 4.4-61.4% in higher methodological quality studies (n=8). • Other anxiety disorder: also lower rates with higher methodological quality studies. • Compared with the general host adult population: refugees are 14 times more likely to have depression, and 15 times more likely to have PTSD (only when one considers high quality studies). Risk factors (narratively reviewed): • No evidence for age, gender, education, marital status, duration in exile. • Higher number of traumatic experiences. • Post-migration stress: poor socioeconomic factors (unemployment, low income, poor host language proficiency) and lack of social support associated with depression (for PTSD and anxiety not necessarily).					
Bronstein & Montgomery, 2011 (Systematic review)	Assessed mental health disorders	Refugee children (<25yrs) in high-income countries	2003-2008	22	• PTSD • Depression	• Cross-sectional studies • Western measures might not be applicable
Findings	• PTSD (n=7): 19-54% (higher than general population but similar with populations with trauma). • Depression (n=3): 3-30% (higher than in general and traumatized pop.). • Risk factors: older age, female, cumulative adverse pre-migration experiences, unaccompanied minors, uncertainty and process regarding asylum, lack of support.					
Colucci et al. 2014 (Systematic review)	Examined mental health service utilization	• Child and youth refugee • Adult refugee	2000-2011	Child: 11 (1 qualitative) Adult: 37	Mental health service utilization	Relatively few studies
Findings	Child: • Underutilization mental health services, and the need for mental healthcare is unmet. • Young refugees are likely to access other sources of help (eg, friends, religious and school personnel). • Prayer important buffer. • Cooperation between agencies (esp mental health and social services) needed to meet the needs of young refugees. • Barriers: see report. Adult: • Also unmet needs and underutilization. • (1 study) People were more willing to accept psychological counselling because of: strong-supportive role, cultural-sensitivity, GP joining patient in first session. • Barriers: see report.					
Crumlish & O'Rourke, 2010 (Systematic review)	Reviewed RCTs of PTSD treatment	Refugees and asylum seekers	Not specified	10 RCTs (8 in high-income)	PTSD	Small sample sizes, blinding and allocation concealment were inadequate
Findings	• No strong evidence base for PTSD treatments for refugees. • NET is relatively best-supported treatment (3 high-quality RCTs with moderate support). • Some support for CBT (but less strong evidence base than NET).					

Dalgaard et al. 2015 (Systematic review)	Assessed the effects of parental disclosure of traumatic material from the past on the psychological well-being of children	Refugee families	Inception-2015	25 (10 quantitative, 4 mixed-method, 11 qualitative)	Psychological well-being	• Diversity of cultural backgrounds, making generalizations difficult (different communication styles may have disparate effects in different cultural groups) • Small samples, diverse designs
Findings	• Disclosure of traumatic experience promotes psychological well-being in children. • Particularly when disclosure modulated such that it is developmentally timed (age child) and carried out in sensitive manner (affective communication). • However, for children born in home country or with direct trauma exposure, disclosing might have negative effects (only two studies). • Modulated disclosure may enhance secure attachment and is culturally embedded.					
Ezard, 2011 (Systematic review)	• Determined substance use and related harm • Assessed the risk factors for substance use	Conflict-displaced populations (including IDP)	1950-2010	3 from Bosnia & Herzegovina and Croatia (the remaining 14 studies from LMIC)	Substance use	• No consistent conceptualization of displacement or substance use • Lack of matching controls • Heterogeneity in methodological approaches
Findings	• Weak evidence that substance use is excessive or increased compared with undisplaced populations. • Very high prevalence of problem alcohol use (particularly among men). • Higher use of benzodiazepine (9% vs 2%) and alcohol (78% vs 72%), compared to undisplaced population. • Risk factors: gender (men), pre-displacement use.					
Fazel et al. 2012 (Systematic review)	Assessed the risk and protective factors of mental health	Displaced and refugee children in high-income countries	1980-2010	44	Multiple outcomes	Relatively few variables assessed; heterogeneity in designs; small sample sizes
Findings	• See Table 4 for key individual, family community, societal risk/protective factors.					
Fazel et al. 2005 (Meta-analysis)	Determine prevalence rates of PTSD, depression and psychotic illness (through surveys)	Adults refugees in high-income countries	1966-2002	20 (9 on PTSD, 6 on depression, 5 on anxiety)	• PTSD. • Major depression • Psychotic illness	• Large heterogeneity in studies (sample size, sampling, diagnostic instruments, study populations) • Cross-cultural validity of psychiatric measures • Comorbidity rates: small studies, unrepresentative samples, and diagnostic inaccuracies

						• 75% of the refugees included in this meta-analysis are from Southeast Asia
Findings	• Large variations in assessment and sampling. • Larger 9 studies (n=200+): 9% (95% CI 8-10%) PTSD, 5% (95% CI 4-6%) major depression. • Higher prevalence in smaller studies. • Only 2 studies: 2% (1-6%) psychotic illness. • Only 5 studies: 4% (3-6%) generalised anxiety disorder. • Comorbidity: 71% of those diagnosed with depression also had PTSD, 44% of those diagnosed with PTSD also had depression. • Children: 11% (7-17%) PTSD, no relevant studies for depression.					
Filges et al. 2015 (Campbell systematic review)	Reviewed the health impact of detention	Asylum seekers	Inception-2013	3 (UK, Japan, Canada), 6 other studies were excluded because of high risk of bias	• PTSD • Depression • Anxiety	• Small sample size • No random sample • Short duration of detention (2x 1 month, 1x 7 months) • Only 3 studies
Findings	• Higher risk for PTSD, depression, and anxiety for detainees compared to non-detained asylum seekers. • Effects persisted post 1yr release (Canada). • Effects are of clinical relevance.					
Gwozdziewycv & Medl-Madrona, 2013 (Meta-analysis)	Assessed the efficacy of NET in traumatized refugees	Traumatized refugees	Not specified	7 (2 in Germany)	PTSD	Not specified
Findings	• NET (and KIDNET) were efficacious for reducing PTSD symptoms (medium effect size). • Effect was larger with refugee as lay counsellor					
Kalt et al. 2013 (Systematic review)	• Determined violence exposure and its associations with health	Asylum seekers (15+yrs) in high-income countries	2000-2011	23	• PTSD • Depression	• Torture differently defined across studies • Most studies with small convenience samples + non-representative clinic samples + lack of comparison groups
Findings	• Limited evidence: around 30% of asylum seekers have experienced torture across different settings and studies (higher in men). • Torture history was associated with PTSD, but also with other psycho-symptomatology (see limitations). • 1 study found longer detention period exaggerated the impact of interpersonal violence on depression scores. • Limited findings on health correlates of sexual violence. Female asylum seekers are particularly vulnerable of experiencing sexual violence. • Higher suicide and suicide attempts in male asylum seekers than female asylum seekers and native pop.					

Lindert et al. 2009 (Systematic review + meta-analysis)	• Reviewed prevalence rates of mental health problems • Assessed Gross National Product of the host country as moderator (as proxy economic conditions)	Refugees and labour migrants (16-65yrs), mostly residing in Western countries	1990-2007	35 (23 on refugees)	• Depression • Anxiety	• Time of assessment after migration varied across studies (with some studies not specifying) • Some studies used probability sampling, others non-probability, (but no differences in depression rates in refugees)
Findings	• Depression: 20% among labour migrants vs. 44% among refugees. • Anxiety: 21% vs. 40%, resp. • PTSD: 36% in refugees. • Higher GNP was a protective factor for depression and anxiety in labour migrants (14% vs. 31% in low GNP) but not in refugees (around 40%).					
Martinez et al. 2015 (Systematic review)	Investigate how immigration policies affect access to health services and health outcomes	Undocumented migrants	1990-2012	40: 30 related to health services access; 10 related to health outcomes	• Health services access • Multiple health outcomes	Not specified
Findings	Access: • 3 categories of laws/policies observed: 1) restricting access, 2) granting minimum rights, 3) granting more than minimum rights. • Perceived fear of deportation and harassment from authorities were associated with lack of access. This was also the case in countries where the services were available to undocumented migrants. • Discrimination by authorities and health institutions in countries with restrictive policies. • Anti-immigration rhetoric impacted health providers' attitudes and behaviours. Health outcomes: • Within a country, in localities with anti-immigration policies mental disorders are common than in localities with neutral or welcoming policies towards migrants. • Association between conditions in detention centres and increased anxiety, depression, overall stress.					
McFarlane & Kaplan, 2012 (Systematic review)	Investigated efficacy of psychosocial interventions	Adult resettled refugees and asylum seekers who experienced torture/trauma	1980-2010	24 (6 RCTs, 5 non-random trials, 13 cohort)	• PTSD • Depression • Anxiety	• Heterogeneity in interventions, participants, and settings • Small sample sizes
Findings	• RCT: significant improvement for PTSD, but not for depression or anxiety. • Non-random experiments: individual psychotherapy, multidisciplinary interventions, group therapy better than no treatment for PTSD and depression. • Cohort: all studies found significant improvements. • Treatment effects remained for 3-18 months (but may vanish over long-term). • Important variations across studies in clinical improvement.					

Nickerson et al. 2011 (Systematic review)	Assessed the efficacy of trauma-focussed therapy and multimodal interventions	Refugees with PTSD	Inception-2010	19: 15 trauma-focused, 4 multimodal	PTSD	Important methodological issues: no proper control group, variations in trauma-focused interventions (content and extent), treatment fidelity (difficult to assess the specific components of treatment that are effective). Multimodal interventions: no control groups, interventions done in specialized centres that have patients with high levels of psycho-pathology
Findings	• Trauma-focused therapy was superior to the control treatment in PTSD symptom reduction. Some studies also showed greater decrease in depression and anxiety. • Multimodal: no improvement in medium-term.					
Ott et al. 2015 (Campbell systematic review)	Assessed the efficacy of interventions that affect economic self-sufficiency and well-being	Resettled refugees	Inception-2013	No studies found	• Labour force partici-pation rate • Employ-ment rate. • Use of cash assistance • Income • Job retention • Quality of life	Not needed
Findings	• No conclusion. • Authors: lack of knowledge on the effects of interventions is surprising given the long-term investments in such programmes, number of refugees resettled, and political importance of this topic.					
Palic et al. 2011 (Systematic review)	Assessed the efficacy of psychosocial treatments of PTSD	Refugees with PTSD	Inception-2010	25	• PTSD • Anxiety and depression	• Heterogeneity of studies (designs, samples) and included populations • Lack of data on long-term effects
Findings	• CBT is efficacious as PTSD treatment (most widely studied treatment modality). • Particularly NET efficacious (treatment effects assessed 6-12 months post-treatment). • NET is not better than treatment as usual for anxiety and depression. • Preliminary evidence for culturally-adapted CBT on PTSD, anxiety, depression (assessed in Southeast Asians), lack of long-term data. • No evidence for group vs individual CBT. • Lack of evidence for multidisciplinary treatments (i.e., psychotherapy, social counselling, psychoactive medication) and for other treatment modalities.					

Parrett & Mason, 2010 (Systematic review)	Examined prevalence rates of psychosis	Refugees	1959-2009	14 (including 5 cohort studies)	Psychosis	• Used Western measures and criteria (DSM), through clinical notes (post-hoc), to determine psychosis. This might not be applicable to refugees • Majority of studies have small sample size
Findings	• Refugees have higher rates of psychosis than non-refugee populations. • Large Swedish cohort study showed psychosis rate to be twice as high as native population, and 1.5x higher than labour migrants.					
Patel et al. 2014 (Cochrane systematic review)	Assessed efficacy of psychological, social and welfare interventions	Torture survivors (mostly refugees)	Inception-2014	9 RCTs (6 in high-income)	• Psychological distress. • PTSD.	• Very low quality evidence • Medium t0 high risk of bias due to: non-standardized assessment methods, non-blinding, small sample sizes • Studies failed to report on the adverse effects of the psychological interventions
Findings	Psychological interventions: • No short-term but medium-term (6 months) reduction of psychological distress and PTSD symptoms (due to NET, CBT). • But follow-up scores remained high both treatment and control group. Social and welfare: • No studies found.					
Porter & Haslam, 2005 (Meta-analysis)	Assessed mental health and its risk factors	Refugees	1959-2002	59	Multiple outcomes	• No significant publication bias • Large heterogeneity between studies regarding mental health rates
Findings	• Meta-analytically, refugees scored 0.41 SD lower on mental health indices compared non-refugees. • Risk factors: institutional/temporary private accommodation (vs private accommodation), restricted economic opportunities (dose-response relationship), those who were internally displaced, and repatriated (likely due to unstable situation in country of origin), on-going conflict (vs no conflict), older age (>65yrs, likely due to less resilience than younger refugees), female gender, those from rural areas, and those with higher education and pre-displacement SES (likely due to loss of status). • See specific figures in paper.					
Quosh et al. 2013 (Systematic review)	Examined the mental health of displaced Syrians	IDP Syrians but also those living in regional countries	Not specified	• 7 studies • Grey literature: 5 documents in Syria, 8 documents from region		Convenience sampling, small sample sizes, methodology not adequately described, grey literature used (have important limitations), lack of cross-cultural validity of some concepts

Findings	Regional setting – Jordan, Lebanon, Turkey: • PTSD, anxiety and depressed mood highly prevalent, both in children and adults. Most of them exposed to PTEs. • High frustration and anger levels due to lack of perspective. • Coping styles: praying, socialising with friends/family, smoking.					
Shishehgar et al. 2015 (Systematic review)	Assessed impact of migration on the health status	Iranian adult refugees in high-income countries	1980-2013	26: 16 quantitative, 9 qualitative, 2 mixed-methods	• Depression. • Mental healthcare use. • Mental distress.	• Some studies were relatively small • No mention on how participants were sampled
Findings	Various factors identified. • Low host language proficiency associated with increased mental distress. • Un- and underemployment. • Lack of information on healthcare services may delay and inhibit healthcare-seeking activities, and likely exacerbate existing conditions. • Poor social networks and support. • Discrimination experienced in healthcare and public places. • Inability to adjust to cultural differences is associated with depression and influenced healthcare-seeking behaviour. • Heterogeneous findings for the link violence behaviours (e.g., family) and mental health problems.					
Slewa-Younan et al. 2015 (Systematic review)	Assessed the prevalence of PTSD and depression of Iraqi refugees in high-income countries	Adult Iraqi refugees in high-income countries	1950-2013	6 for PTSD, 7 for depression	• PTSD • Depression	• Different measures used, sample sizes, sampling • Lack of reporting demographic and trauma data
Findings	• PTSD: 8-37.2%. • Depression: 28.3-75%. (• By comparison: prevalence in Iraq in 2009, PTSD 1.1%, depression 3.9%). • Risk factors: immigration policies, life experiences.					
Slobodin & de Jong, 2015(a) (Systematic review)	Investigated the effectiveness of family-based trauma interventions	Traumatized refugee and immigrant families	Inception-2013	6: 4 school-based, 2 multi-family support groups	Multiple outcomes	• Very few studies • Important methodological issues, e.g., no proper control (waiting list, pre-post), all types of prospective trails (most non-RCT), etc
Findings	• Family-based interventions resulted in decrease in PTSD and depressive symptoms; increase in accessing mental health services; and improvement in social functioning particularly within family. • School-based: to complement children's individual session with group session (mostly CBT). • No data on whether family interventions are better than individual or group interventions. • Multifamily support = supportive therapy, psycho-education, coping strategies for individual with PTSD and family. • Authors suggest that CBT could be efficient when combined with family interventions.					
Steel et al. 2009 (Meta-analysis)	Assessed the prevalence rates and risk factors of PTSD and depression	Adult refugee and conflict-affected populations	1980-2009	161 (145 PTSD, 117 depression) for 181 surveys: 59 surveys from high-income countries	• PTSD. • Depression.	• Methodological factors (e.g., non-random sampling, small samples, self-reports) were taken into account • Cross-cultural validity of PTSD, depression

Findings	• Prevalence of torture 21% (95% CI: 17-26%). PTSD: • Unadjusted prevalence: 30.6% (26.3-35.2%) • Risk factors: reported torture (most important factor, R2 23.6%: OR 2.01; 1.52-2.65), cumulative exposure to PTEs (1.52; 1.21-1.91), time since conflict (0.77; 0.66-0.91), assessed level of political terror (1.60; 1.03-2.50). • Sex, site of survey, residency status were not associated with PTSD. • Methodological factors: R2 12.9%. Depression: • Unadjusted prevalence: 30.8% (26.3-35.6%). • Risk factors: cumulative exposure to PTEs (most important factor, R2 22%: 1.64; 1.39-1.93), time since conflict (0.80; 0.69-0.93), reported torture (1.48; 1.07-2.04), residency status (1.30; 1.07-1.57). • Sex, site/year of survey, political terror not associated with depression. • Methodological factors: 27.7%. • Tendency that the adverse mental health impact of cumulative PTEs exposure reduces over time since conflict / resettlement increases.					
Sullivan & Simonson, 2015 (Systematic review)	Evaluated school-based interventions to improve mental health and social-emotional well-being	Refugee, asylum seeking, war-affected students	Inception-2015	13 (4 from UK; 3 each US and Canada; 1 each Australia, Iran, and India)	Multiple mental health outcomes	Similar to other intervention studies
Findings	• Creative Expression Therapy: writing and drawing resulted in positive outcomes; drama interventions did not have any effect; music intervention had negative impact on some measures. • CBT (including TF and culturally adapted): had positive outcomes. • Multimodal: mixed results.					
Tyrer & Fazel, 2014 (Systematic review)	Assessed the effectiveness of school-/ community-based mental health interventions	Asylum-seeking and refugee children (2-17yrs)	1987-2012	21 (14 in high-income: 11 school-, 3 community-based)	Psychological disorders	Important limitations: few with treatment fidelity and follow-up assessment, small samples, inactive or no controls
Findings	• Verbal processing-based of past experiences (e.g., CBT, NET) and creative art-based (CAB) interventions, either individual- or group-based or short- or long-term, led to significant reductions in symptoms of depression, anxiety, PTSD, functional impairment, and peer problems. • VPB was also effective in treating anger, traumatic grief, resource hardship, and behavioural and emotional problems. • CAB was effective in treating well-being, and emotional and relational problems. • Strongest evidence for VPB (CBT has largest effect size); evidence for CAB not as robust.					
Williams & Thompson, 2011 (Systematic review)	Assessed community-based interventions in reducing morbidity from psycho-pathology related to conflict-trauma	Refugees with psychopatho-logy	1994-2009	14 (only 3 in resettlement countries)	Multiple outcomes	Very few in post-conflict settings, only three but with important limitations (no controls, exploratory, no proper evaluation of intervention)

Findings	• Community-based mental health services (school, home-based individual, multifaceted case management) led to some improvements (but see limitations).					
Wollscheid et al. 2015 (Campbell systematic review)	Assessed the effect of interventions that facilitate communication between family with minority language background and public services (e.g., child welfare services)	Immigrants with minority language background	Inception-2013	4 (3 on health services)	• Change in communi-cation • User satisfaction. • Reported trust • Use of services • Similar indirect outcomes	• Quality of the included studies is low (no proper controls) • All studies conducted in the US
Findings	Health services: • Use of interpretation services had a positive effect on communication quality. • No differences between different interpretation services (i.e., bilingual personnel, in-person interpreter, telephone interpreter, ad hoc interpreter).					
van Wyk et al. 2013 (Systematic review)	Assessed efficacy of naturalistic interventions (therapy in uncontrolled treatment setting)	Adult asylum seeker and refugees	No date limitations applied	7	Multiple outcomes	• Limited information on the interventions provided • No controls • Very few data
Findings	• Some evidence showing reduction in symptoms of PTSD, depression and anxiety (also studies with no effect). • But important methodological issues.					
Vu et al. 2014 (Systematic review & meta-analysis)	Determined the prevalence of sexual violence among refugee and displaced women	Refugee and internally displaced women	Inception-2013	19 (most studies conducted in Africa)	Sexual violence	• Limited generalizability • Self-reports.
Findings	• 21.7% (95% CI: 14.9-28.7%) experienced sexual violence. • Sexual violence is underreported because of social stigma. • Sexual violence is risk factor psychological health problems, including suicide.					

Annex 4 Overview of scoping and narrative reviews (n=12) on the mental health of refugees and asylum seekers

Authors	Aim	Study population	Search period	# Included studies	Mental health outcomes	Limitations
de Anstiss et al. 2009 (Narrative review)	Determine the utilization of mental health services in Australia	Refugee children	Not specified	Not specified	Mental health services utilization	Not specified
Findings	• Service underutilization observed (compared to native populations: higher mental health problems, but lower use). • Refugee families may seek help from informal networks, particularly their own peer group. • Refugee children more likely to be referred to specialist mental health services by teachers, social workers, and other refugee workers in the UK and Norway >> need for collaboration between mental health, education and social services. • Barriers might be ethnic community, service system, and societal factors. These factors have not been formally and systematically researched.					
Crowley et al. 2009 (Scoping review)	Reviewed the literature on the mental health	Refugee children	Not specified	Not specified	Multiple mental health outcomes	• Western-based mental health constructs • Heterogeneity in instruments used, sampling, different outcomes, study populations, and host countries
Findings	Risk factors: • Pre-migration/migration: separation from caregivers, direct exposure to violence/murder, death of parent/family member, witnessing parents' fear, panic and/or helplessness, internment in a refugee camp. • Post-migration: uncertain residency status, language difficulties, physical health problems incurred during migration, low SES.					
Guruge et al. 2015 (Scoping review)	Determine social support, social conflict and mental health among immigrant women in Canada	Immigrant women (including refugees), Canada	1990-2014	34: 22 qualitative, 10 quantitative, 2 mixed-methods	Multiple mental health outcomes	Quality appraisal was not performed
Findings	• Social support (from family, friends) can have a positive impact on immigrant women's mental health and wellbeing. • Social support can facilitate social inclusion and health services use. • Lack of social support and social networks as a source of conflict (particularly from informal network) can have negative mental health impact. • Immigrants are more likely to underutilize formal social support, due to: being unaware, unable to access them, transportation problems, lack of culturally-safe and linguistically appropriate services, stigma associated with health-seeking (particularly mental health).					
Hsu et al. 2004 (Scoping review)	Reviewed the literature on the mental health and its risk and protective factors of South-East Asian refugees	South-East Asian refugees in the US	Not specified	Not specified	Multiple mental health outcomes	Similar to other reviews

Findings	Protective factors: language proficiency, focusing on the present and future (not past), marital status and family reunion, social support from peers.					
Johnson et al. 2008 (Scoping review)	Assessed the prevalence and risk factors of PTSD following civilian war trauma and torture	Populations affected by war trauma or torture (including refugees)	1970-2005	48	PTSD	Small, non-random samples, self-reported data, high attrition rate, lack of control
Findings	• Important variations in the prevalence rate of PTSD of war-/torture-affected populations. • However, comparability between studies is difficult, given the heterogeneity in study populations, design, etc. • Dose-response relationship between amount of war trauma and severity of PTSD. Some dose-response evidence for cumulative torture experience. • Risk factors: female, older age (65+). • Protective factors: preparedness for torture, social support, religion as emotional support, family reunion (1 study only). • Post-migration factors play a role in maintaining PTSD (e.g., low social support).					
Kirmayer et al. 2011 (Scoping review)	Explored the risk factors and treatment of mental health problems in primary care setting in Canada	Immigrants and refugees, Canada	1998-2009	113 (including 10 systematic reviews, 5 meta-analyses)	Multiple mental health outcomes	Not specified
Findings	• Important post-migration stressors: social and economic strain, social alienation, discrimination, status loss, exposure to violence. • Immigrants/refugees are less likely to seek out or be referred to mental health services (due to structural and cultural barriers). • Children (particularly unaccompanied), women, and seniors have increased risk. • Professional interpreters improve communication and increase disclosure of psychological symptoms. • Collaboration with ethnic/religious community, as it supports migrants in work, and in legal, religious and social aspects of their adaptation.					
Murray et al. 2010 (Scoping review)	Assessed the efficacy of mental health interventions during resettlement	Resettled refugees	1990-2010	22	Multiple mental health outcomes	Small sample size, no control groups
Findings	• CBT (most commonly studied) most effective in treating traumatic and migration stress. • Lack of evidence for other treatment modalities: preliminary evidence for expressive therapy, family/community interventions.					
Peltonen & Punamaki, 2010 (Scoping review)	Evaluated the effectiveness of preventive interventions in preventing emotional distress and impairment, and promoting optimal emotional-cognitive and social development	Children traumatized in the context of armed conflicts	1980-2008	16 (4 studies included for meta-analysis)	Multiple health outcomes	• Important methodological limitations (as discussed in other reviews) • Lack of long-term data
Findings	• Meta-analysis showed that interventions that were CBT-based and enhanced resilience, along with symptom-based techniques and bodily rehearsals proved beneficial in reducing PTSD symptoms. • But evidence is scarce.					

Robjant & Fazel, 2010 (Scoping review)	Assessed efficacy of NET for PTSD	Traumatized refugees/ asylum seekers with PTSD	Not specified	10 (only 4 from high-income)	• PTSD • Depressio	Small sample sizes, no comparable data with other treatments
Findings	• NET resulted in significant reductions in PTSD in adults, compared with treatment as usual, stress inoculation therapy. • NET reduced the rate and severity of PTSD. • Similar effects in children but fewer studies.					
Slobodin & de Jong, 2015(b) (Scoping review)	Reviewed mental health interventions	Traumatized asylum seekers and refugees	Not specified	Not specified	Multiple outcomes	No proper controls, relatively short-term follow-up, no proper statistical adjustment of confounders
Findings	• NET: effective treatment for PTSD (not better than usual therapies for depression and anxiety). • CBT: relatively well-studied, support for trauma-focused CBT. • Lack of evidence for EMDR, family-based, group-based, multidisciplinary interventions. • No specific guidelines or evidence for pharmacological interventions.					
Tempany, 2009 (Scoping review)	Assessed mental health, psychological wellbeing, coping strategies, and interventions of Sudanese refugees	Sudanese refugees	Not specified	Not specified	Multiple mental health outcomes	Not specified
Findings	• Coping strategies: religious beliefs, social support (particularly from family and Sudanese community), personal qualities, comparison with others, normalization and acceptance of difficulties, suppression/silence, distraction. • Risk factors for lower mental health: traumatic experiences, post-migration living difficulties, acculturative stress.					
Thomson et al. 2015 (Scoping review)	Examining barriers and challenges to access immigrants' utilization of mental health services in Canada	Immigrants (including refugees), Canada	1990-2013	131: 64 qualitative, 46 quanti-tative, 21 mixed-methods	Access to mental health services	Focused on the Canadian context
Findings	• Three types of barriers regarding immigrants': 1) barriers in the uptake of health information and services, 2) barriers related to the settlement experience, 3) inadequacy of culturally and linguistically appropriate services. • See report for more info.					

Annex 5 Conceptual model of refugee mental health