

# BMJ Open Gender differences in the mental health of unaccompanied refugee minors in Europe: a systematic review

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## ABSTRACT

**Objectives** Our aim was to summarise the current evidence regarding gender differences in the mental health of unaccompanied refugee minors (URM) and to identify gaps in research.

**Setting** We focused on quantitative studies presenting primary data from Organisation for Economic Co-Operation and Development(OECD)countries. Language was restricted to English or German.

**Participants** To be eligible, a study had to involve (former) URM who immigrated to an OECD country.

**Design** We conducted a systematic review in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. The databases MEDLINE, CINAHL, LIVIVO, PSYINDEX and PsycINFO were searched from 1990 to 2017. Studies were judged for eligibility by two independent reviewers each. We narratively summarised our results.

**Results** 9 primary studies, all from Europe, examined gender differences in the mental health of URM. The majority of the included studies found female URM to be more often affected by post-traumatic or depressive symptoms than their male counterparts. There is only weak evidence regarding other mental health outcomes. Two studies each conducted gender-specific analyses on anxiety and externalising behaviour, but no statistically significant differences between female and male URM were detected.

**Conclusions** Female gender is associated with a higher vulnerability towards certain mental health problems among URM residing in Europe. However, the lack of representative studies using reliable diagnostic methods indicates that the findings so far should be treated with caution. Further research is needed to clarify the role of gender for mental health in URM and to examine underlying mechanisms.

## INTRODUCTION

By the end of 2016, 65.6 million persons worldwide were forcibly displaced; the number of unaccompanied minors applying for asylum amounted to 75 000 in 70 countries. The vast majority were minors from Afghanistan, Syria, Iraq, Eritrea and Somalia. In Germany, applications reached a peak with 35 900 in 2016 compared with 14 400 in the previous year.<sup>1</sup>

## Strengths and limitations of this study

- This review is based on a comprehensive systematic literature research in five databases, supplemented by a thorough manual search of the reference lists of included publications.
- The scientific quality of the included studies was assessed and documented.
- Analyses of gender differences in the mental health of unaccompanied refugee minors (URM) provide deeper insights into gender-specific needs and vulnerabilities.
- It cannot be ruled out that we missed additional grey literature reporting stratified results on the health of URM.

The terms *unaccompanied children* or *unaccompanied refugee minors* (URM) refer to forcibly displaced children and youths under the age of 18 who are ‘separated from both parents and [...] not being cared for by an adult who by law or custom has the responsibility to do so’.<sup>2</sup> Frequent reasons for them to flee include age-specific and gender-specific threats, for example, recruitment as child soldiers, forced marriages or violence in the family.<sup>3</sup>

URM are considered a highly vulnerable refugee subgroup in terms of mental health issues.<sup>4,5</sup> The loss of or separation from their parents in a crucial period of physical and mental development<sup>4</sup> while experiencing a major transition by fleeing their home country distinguishes them from refugees in general, as well as from accompanied refugee minors. Additional psychological burdens many URM struggle with, such as direct or indirect exposure to violence in the home country<sup>6</sup> or acculturative stress,<sup>7</sup> apply to other refugees as well. However, URM are forced to cope with these stressors at a young age and mostly without parental support.<sup>8</sup>

Their high vulnerability is further reflected in study results showing that a high number of URM experience traumatic events, such as incidents of physical and sexual violence

during the flight.<sup>9–12</sup> As a result, URM display more symptoms of post-traumatic stress and depression than refugee children accompanied by at least one parent.<sup>9–13</sup>

Nevertheless, it must be stressed that the association between adversity and mental health does not mean that URM inevitably develop mental disorders. On the contrary, URM have the capacities to successfully develop coping strategies and to adjust to their new situation.<sup>14 15</sup>

Gender (used here as an umbrella term for biological sex and the socially constructed gender role) might play a role for the development of mental health issues in URM. Theoretical models aiming at explaining health inequalities usually include gender as an influencing factor, mediating or moderating variable (eg, see ref 16). Faltermaier and Hübner developed a model which summarises psychosocial pathways through which associations between gender and health can be explained.<sup>17</sup> Gender is assumed to affect exposure to risk factors which have an impact on mental health. Female URM, for example, are at a higher risk of sexual exploitation and abuse during the flight.<sup>18</sup> Other pathways relate to gender differences in coping styles or attitudes towards mental health and illness.<sup>17</sup>

Evidence from three older systematic reviews examining mental health outcomes in URM suggests that female gender may be a risk factor for the development of post-traumatic stress disorder (PTSD) and depression in this group.<sup>4 8 19</sup> Gender differences regarding other mental health outcomes such as anxiety or behavioural disorders are under-researched. Moreover, research activities in the field of refugee health have strongly increased in the last few years. Aim of this systematic review is therefore to compile the current evidence from primary data studies regarding mental health outcomes of female URM compared with male URM and to identify gaps in research. To the knowledge of the authors, this is the first review explicitly examining gender differences in the mental health of URM. Although gender is only one of many factors to play a role for mental health, further knowledge about gender differences in the mental well-being of URM is essential to identify gender-specific care needs and to develop gender-specific approaches to promote resilience in this group.

## METHODS

### Databases and search strategies

The review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines,<sup>20</sup> as far as applicable. No review protocol was published. We searched five databases covering publications in the fields of public health, medicine or psychology: PubMed/MEDLINE, CINAHL, LIVIVO, PsycINFO and PSYINDEX. Searches were conducted between 4 and 14 November 2016 and updated on 11 December 2017. The search combined terms characterising the relevant population ('refugee\*', 'asylum\*', 'child\*', 'adolescent\*', 'minor\*') with a term

**Table 1** Exclusion criteria

Aspect	Exclusion criteria
Study type	Empirical studies relying on secondary data, non-empirical literature (eg, study protocols, commentaries), academic theses, intervention studies.
Participants	Study population not clearly defined, internally displaced URM, participants overlap with larger samples of other included studies (if study design is identical), sample size <5.
Outcome	Studies focusing on outcomes of healthcare.
Other	Studies without gender-specific results on the mental health of URM.

URM, unaccompanied refugee minors.

describing the relevant subject matter ('health\*'). In order to maximise the sensitivity of the search, the search term for the subject matter was intentionally kept broad. All searches were limited to a publication period from 1990 onwards. Search strategies were slightly modified for each database. If possible, searches were also carried out in German (online supplementary file 1).

In addition, the reference lists of the included publications were manually searched for relevant studies that were not found in the systematic literature search.

### Study selection

We included quantitative primary studies which compared female and male (former) URM with regard to at least one mental health outcome. We aimed at clinically relevant mental health outcomes corresponding to the classifications in chapter V of the International Classification of Diseases-10 or the Diagnostic and Statistical Manual of Mental Disorders IV. Studies with results stratified by gender but not explicitly discussing gender differences were accepted. To be eligible, a study had to address (former) URM who immigrated to an OECD member state in order to allow for drawing conclusions about the refugee population currently residing in Europe. Publication date was restricted to 1990–2017, and language to English or German. Exclusion criteria are presented in table 1.

For articles with overlapping samples and the same study design, only the study with the largest sample was included.

Titles and abstracts were scanned to identify articles that were either clearly relevant or could not be excluded based on the above-mentioned criteria. L-MM screened all titles and abstracts, ACN and AK each screened 50% of them. Afterwards, all possibly eligible articles were read in full by two reviewers each (L-MM read all possibly eligible articles in full, ACN and AK each read 50%). Any disagreements throughout the review process were resolved through bilateral discussion and, if necessary, discussed with the respective third reviewer.

## Data extraction and analysis

One reviewer (L-MM) noted down the main characteristics and results of the included studies using a data extraction form (online supplementary file 2). Only data referring to clinically relevant mental health outcomes and influencing variables were extracted, additional results on other outcomes were left out. Study results were compared and narratively summarised with a focus on gender differences in the mental health of URM. Meta-analyses were inappropriate due to the heterogeneity in the study designs, underlying refugee populations and reported outcomes.

## Critical appraisal of included studies

We used different checklists developed by the Joanna Briggs Institute (JBI) for the critical appraisal of the included observational studies.<sup>21</sup> For studies reporting prevalence data (scores or percentages) on mental health outcomes or symptom severity, we employed the *JBI Checklist for Prevalence Studies*. If a cross-sectional study focused on analysing the associations between sociodemographic variables (eg, gender) or exposures and mental health outcomes, we used the *JBI Checklist for Analytical Cross-Sectional Studies*. Longitudinal studies were critically appraised by employing the *JBI Checklist for Cohort Studies*. For further information on the guidelines for the

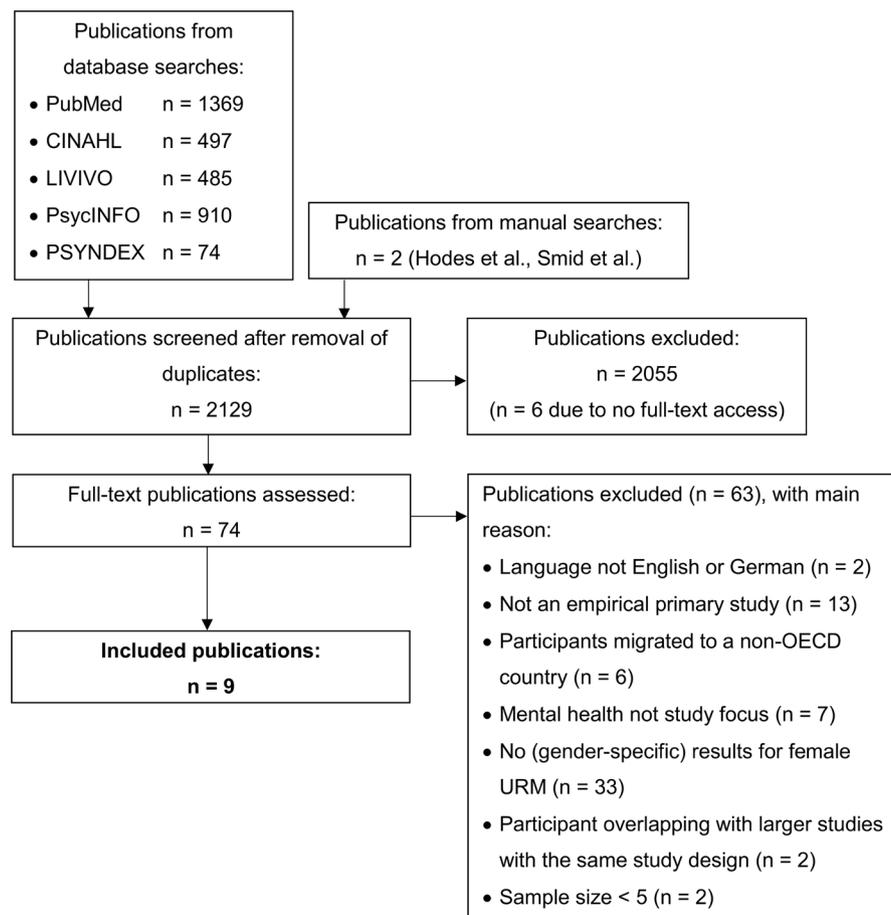
assessment, see online supplementary file 3. Two reviewers (L-MM, ACN) independently filled out the checklist for each included study. The results were compared and disagreements resolved through discussion. By critically appraising the body of evidence, we were able to ensure that the methodological quality and the risk of bias of studies were included in our interpretations of the study results. Low-quality studies were not excluded from the analysis because a comprehensive overview of all available studies on gender differences in the mental health of URM was intended.

## Patient and public involvement

Patients or public were not involved in the development and conduct of this systematic review.

## RESULTS

The study selection process is presented in figure 1. Nine primary studies were finally included in the analyses. Of these, five had a quantitative cross-sectional research design,<sup>7 11 22–24</sup> three measured health outcomes longitudinally<sup>25–27</sup> and one applied mixed methods designs combining qualitative and quantitative data.<sup>28</sup> Although we searched for papers from all OECD member states, the studies included were conducted



**Figure 1** Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow chart showing the selection of studies. URM, unaccompanied refugee minors.

only in European countries: Norway (n=3),<sup>7 23 25</sup> the Netherlands (n=3),<sup>22 26 28</sup> the UK (n=1),<sup>11</sup> Belgium (n=1),<sup>27</sup> and Belgium and Norway (n=1).<sup>24</sup> Sample sizes of the quantitative studies ranged from 75 to 920 participants (online supplementary file 2). The underlying samples were diverse with regard to age spans, countries of origin and the length of stay in the host country. In four cross-sectional studies<sup>11 22-24</sup> and one with mixed methods,<sup>28</sup> URM lived in the host country for less than 3 years (hereof two papers in which URM were screened within 6 months after arrival in the host country<sup>24 28</sup>). The fifth cross-sectional study reported mean lengths of stay of more than 3 years.<sup>7</sup> The identified longitudinal studies all completed their follow-up measurements within 2 years after arrival in the host countries.<sup>25-27</sup> Information relating to the flight (eg, reasons to flee, duration) was not reported. Studies merely assessed the number of stressful life events<sup>22-27</sup> or the exposure to traumatic war events.<sup>7 11</sup>

The methodological quality varied, but was overall acceptable. Seven studies fulfilled most of the relevant assessment criteria, two papers did not. Online supplementary file 2 shows the overall results of the critical appraisal process as the proportion of fulfilled assessment criteria to the total number of criteria included in the respective checklist (see online supplementary file 3 for a more detailed documentation of each study's quality). A major issue throughout the studies was that health outcomes were not based on confirmed psychiatric diagnoses. In most cases, reported prevalences relied on self-reported data collected with screening questionnaires. To reduce language barriers during the data collection process, the respective questionnaires were provided in the first language of the respondents in seven studies.<sup>22-28</sup> In one study (plus the Belgian part of Vervliet *et al* 2014b<sup>24</sup>), translations were unnecessary due to sufficient language skills of the respondents, but interpreters were available when needed.<sup>7</sup> In the study conducted in the UK, neither translated questionnaires nor interpreters were employed, since the respondents spoke English sufficiently.<sup>11</sup>

### Gender differences in the mental health of URM

Clinically relevant outcomes primarily referred to post-traumatic stress, depression, anxiety and behavioural problems.

One study reported a prevalence for PTSD: Smid *et al*<sup>26</sup> assessed symptoms of PTSD at two different times of measurement (1 year and 2 years after resettlement).<sup>26</sup> The authors found that girls were more likely to develop late-onset PTSD, compared with no PTSD at all, than male URM (OR=1.64,  $p<0.1$ ). This result was adjusted for age, education, number of traumatic experiences, 24 hours supervision and length of stay. Five other studies examined the severity of PTSD symptoms using different screening instruments (Impact of Event Scale, Child PTSD Symptom Scale, Reactions of Adolescents to Traumatic Stress questionnaire). In three of these studies,

female URM showed higher mean levels than male URM,<sup>11 25 27</sup> two studies did not find any gender differences.<sup>23 24</sup>

Gender-stratified results on depression in URM were reported in six studies. Of these, four studies either indicated significant gender differences or a trend.

A cross-sectional study demonstrated a significant positive association between female gender and a higher score on the CES-D (Center for Epidemiologic Studies Depression Scale, cut-off 18.0)<sup>7</sup>: Keles *et al* adjusted the association between gender and depression for war-related trauma and daily hassles. Female gender was significantly associated with depressive symptoms ( $p<0.01$ ).<sup>7</sup> However, the effect size was small (online supplementary file 2). In a second cross-sectional study, there was a trend for female URM to score higher than males on the Birleson Depression Self-Rating Scale, but the difference was not tested for significance. The authors report that 23.1% of the refugee girls were at high risk of depression, whereas only 11.5% of the boys belonged to the high-risk group.<sup>11</sup> A third cross-sectional study conducted by Vervliet *et al* assessed depression applying a subscale of the Hopkins Symptom Checklist 37A (HSCL-37A). Girls' and boys' mean levels differed only slightly and were under the cut-off of 2.07 (1.90 vs 1.75, possible range 1–4 in the study).<sup>24</sup> The same checklist was used by Jensen *et al*,<sup>23</sup> who did not find any significant gender differences.<sup>23</sup>

A longitudinal study examined the change of depressive and anxiety symptoms among URM over time. Depression and anxiety were first measured approximately 6 months after arrival in the host country using the HSCL-37A and then again 1.9 years later. Results showed a higher, yet insignificant increase in depressive and anxiety symptoms among girls. The effect size difference was small ( $d=-0.28$  on the HSCL internalising subscale).<sup>25</sup> In another longitudinal study with a very small sample of female URM (n=10), girls appeared to be more often affected by depression than boys, but the result was not statistically significant.<sup>27</sup>

Additional mental health outcomes were rarely examined. Two cross-sectional studies provided gender-specific data on the presence of anxiety in URM. Neither found gender differences with regard to this outcome.<sup>23 27</sup> Two studies measured behavioural problems by employing the HSCL-37A externalising subscale.<sup>23 25</sup> They did not find any statistically significant differences between female and male URM. In one study,<sup>22</sup> female gender (as well as the length of stay in the host country and the HSCL-37A externalising score) did not predict self-reported need for mental healthcare services, whereas being older than 16 years, not having family members in the host country, having experienced seven or more stressful life events, higher HSCL-37A internalising and Reaction of Adolescents to Traumatic Stress Questionnaire (RATS) total scores were of predictive importance.

Only three studies adjusted their gender-specific results on mental health of URM for age.

## DISCUSSION

Overall, the empirical evidence indicates a higher burden of depression among female URM compared with their male counterparts. Five out of six studies showed disadvantages for girls. In the study with the highest number of girls ( $n=162$ ), the difference was statistically significant.<sup>7</sup> Female participants in the other four studies were also affected by depressive symptoms more often or more intensely, but these results were either not tested for statistical significance or non-significant, probably due to small numbers of female URM in the samples. Higher prevalences of depression in female URM compared with male URM are in line with results of previous studies proving that women suffer from unipolar depression more frequently than men.<sup>29 30</sup> Therefore, it could be assumed that female gender is a risk factor for the development of depression in URM, but causal relations remain unclear due to methodological limitations (see section 'Challenges for further research'). It is possible that gender-specific reasons to flee or a higher vulnerability of female URM towards sexual abuse<sup>23</sup> account for part of the gender differences. However, the reported gender differences regarding depressive symptoms could also reflect the typical patterns seen in the general population. Further studies with greater power are needed to clarify this.

With regard to PTSD symptoms, the evidence is less consistent as female URM were more affected by symptoms of PTSD in three out of six studies,<sup>11 25 27</sup> but two studies did not find any gender differences<sup>23 24</sup> and one measured a higher prevalence in male URM. However, girls participating in this study presented with late-onset PTSD more frequently than boys.<sup>26</sup> Whereas it is known from general psychological literature that female gender is associated with a higher risk of PTSD after trauma,<sup>31</sup> there is further research needed to clarify the role of gender in the development of PTSD among URM. The included studies provided no evidence for assuming that gender differences may result from a higher vulnerability of girls towards (sexual) abuse before, during and after the flight. Experiences of sexual abuse were only examined in the two studies that did not find gender differences in PTSD levels.<sup>23 24</sup> Although results showed higher prevalences of sexual abuse among female URM, other kinds of traumatic events, such as being physically attacked, were more common among male URM.

Only few studies presented age-adjusted results on gender differences.<sup>7 11 22</sup> Although the age of URM inherently does not vary very much, there is evidence that higher age is associated with higher PTSD scores.<sup>11 26</sup> This may be linked with an increasing sense of uncertainty concerning the residence status or employment situation—factors found to be associated with PTSD symptomatology<sup>32</sup>—when URM approach the age of legal majority. It is therefore recommendable to control for age in further investigations on gender differences.

Since we searched databases and reference lists, it cannot be ruled out that there is grey literature reporting stratified results on the mental health of URM that we were not able to detect.

## Challenges for further research

Little is known about the long-term development of mental health symptoms after resettlement in the host countries, since longitudinal studies are few, and follow-ups were completed at the latest after 2 years of residence.

The identified body of evidence on gender differences in the mental health of URM has several methodological limitations. First, representative studies with larger sample sizes are lacking. Bean *et al* were the only investigators who randomly selected a register-based and (at that time) representative sample of URM via the Dutch central guardianship institution.<sup>22</sup> Other studies recruited participants from selected institutions or used convenience samples with limited external validity. Since no study explicitly focused on gender differences and the vast majority of URM in Europe consists of boys,<sup>33</sup> total numbers of girls included were rather low (range 10–264, only three studies with  $n>100$ ), reducing statistical power. Given that gender differences are not the primary outcome of the included studies, an overestimation of the effects is possible, since it is likely that differences are often only reported if significant (outcome reporting bias). Mental health outcomes were assessed by using self-rating scales which were not designed for clinical diagnostics and might have led to an underestimation of prevalences due to social desirability bias. However, Witt *et al*<sup>19</sup> reported that in general, prevalence rates were reduced for clinical diagnoses compared with self-reports.<sup>19</sup> Furthermore, not all translated versions of the scales were validated, and it is questionable whether all instruments used were sensitive enough for gender and cultural differences. The social acceptability of expressing emotional problems may be influenced by socially constructed gender roles or the cultural background.

Comparing study results on refugee minors is inherently challenging because refugee populations are highly diverse and not stable over time. They vary in sociocultural backgrounds, living conditions in the countries of origin (and even within the same country—between regions and/or over time), experiences during the flight phase and the legal situation in the host countries. Female and male URM may especially differ in the reasons to flee as well as in the risks for experiencing violence or abuse. These gender-specific background characteristics were under-reported. Results on health outcomes were stratified by gender, but associations between gender and health outcomes were usually only adjusted for a limited, yet varying, selection of influencing factors. This makes it difficult to compare study results and draw clear conclusions regarding the role of gender for the mental health of URM.

## CONCLUSIONS

Based on our results, we can identify two main research gaps in this area: (1) good-quality data on gender differences regarding anxiety and externalising disorders and (2) a deeper understanding of the interactions between gender, other demographic and migration-related variables, external factors and mental health. The role of

gender in the interplay between social variables and health outcomes can only be investigated in comprehensive analyses adjusting for important influencing factors such as traumatic experiences, reasons for the flight, circumstances during the flight or living conditions in the host countries.

Results so far underline that services need to be gender-sensitive—in particular so when they are dealing with URM.

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**Contributors** L-MM and OR conceived the study. L-MM, ACN and AK conducted the systematic review and the critical appraisal of the included studies. L-MM led the literature review and prepared the manuscript. All authors contributed to the interpretation of data and have revised and approved the final manuscript.

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**Data sharing statement** No additional data are available following this study.

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## REFERENCES

1. UNHCR. Global Trends – Forced Displacement in 2016, 2017. Available at: <http://www.unhcr.org/5943e8a34> (accessed Jan 2018).
2. UNHCR. Guidelines on Policies and Procedures in dealing with Unaccompanied Children Seeking Asylum, 1997. Available at: <http://www.unhcr.org/3d4f91cf4.pdf> (accessed Jan 2018).
3. Ministry for Family, Children, Youth, Culture and Sport of the State of North Rhine-Westphalia. Handreichung zum Umgang mit unbegleiteten minderjährigen Flüchtlingen in Nordrhein-Westfalen (Recommendation concerning the treatment of unaccompanied minor refugees in North Rhine-Westphalia), 2013. <http://www.b-umf.de/images/nrw-handreichung-umf-2013.pdf> (accessed Jan 2018).
4. Huemer J, Karnik NS, Voelkl-Kernstock S, et al. Mental health issues in unaccompanied refugee minors. *Child Adolesc Psychiatry Ment Health* 2009;3:13.
5. Eide K, Hjern A. Unaccompanied refugee children—vulnerability and agency. *Acta Paediatr* 2013;102:666–8.
6. Lustig SL, Kia-Keating M, Knight WG, et al. Review of child and adolescent refugee mental health. *J Am Acad Child Adolesc Psychiatry* 2004;43:24–36.
7. Keles S, Friberg O, Iidsøe T, et al. Depression among unaccompanied minor refugees: the relative contribution of general and acculturation-specific daily hassles. *Ethn Health* 2016;21:300–17.
8. Bronstein I, Montgomery P. Psychological distress in refugee children: a systematic review. *Clin Child Fam Psychol Rev* 2011;14:44–56.
9. Derluyn I, Mels C, Broekaert E. Mental health problems in separated refugee adolescents. *J Adolesc Health* 2009;44:291–7.
10. Michelson D, Sclare I. Psychological needs, service utilization and provision of care in a specialist mental health clinic for young refugees: a comparative study. *Clin Child Psychol Psychiatry* 2009;14:273–96.
11. Hodes M, Jagdev D, Chandra N, et al. Risk and resilience for psychological distress amongst unaccompanied asylum seeking adolescents. *J Child Psychol Psychiatry* 2008;49:723–32.
12. Bean T, Derluyn I, Eurelings-Bontekoe E, et al. Comparing psychological distress, traumatic stress reactions, and experiences of unaccompanied refugee minors with experiences of adolescents accompanied by parents. *J Nerv Ment Dis* 2007;195:288–97.
13. Wiese EB, Burhorst I. The mental health of asylum-seeking and refugee children and adolescents attending a clinic in the Netherlands. *Transcult Psychiatry* 2007;44:596–613.
14. Groark C, Sclare I, Raval H. Understanding the experiences and emotional needs of unaccompanied asylum-seeking adolescents in the UK. *Clin Child Psychol Psychiatry* 2011;16:421–42.
15. Carlson BE, Cacciatore J, Klimek B. A risk and resilience perspective on unaccompanied refugee minors. *Soc Work* 2012;57:259–69.
16. Solar O, Irwin A. A conceptual framework for action on the social determinants of health. Social Determinants of Health Discussion Paper 2 (Policy and Practice), 2010. [http://www.who.int/sdhconference/resources/ConceptualframeworkforactiononSDH\\_eng.pdf](http://www.who.int/sdhconference/resources/ConceptualframeworkforactiononSDH_eng.pdf) (accessed May 2018).
17. Faltermaier T, Hübner IM. Psychosoziale Gesundheitstheorien aus Geschlechterperspektive (Psychosocial health theories from a gender perspective). In: Kolip P, Hurrelmann K, eds. *Handbuch Geschlecht und Gesundheit (Handbook Gender and Health)*. Bern: Hogrefe AG, 2016:45–57.
18. Spallek J, Tempes J, Ricksgers H, et al. Gesundheitliche Situation und Versorgung unbegleiteter minderjähriger Flüchtlinge – eine Näherung anhand qualitativer und quantitativer Forschung in der Stadt Bielefeld (The health situation and health care needs of unaccompanied minor refugees – an approximation based on qualitative and quantitative studies from Bielefeld, Germany). *Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz* 2016;59:636–41.
19. Witt A, Rassenhofer M, Fegert JM, et al. Hilfebedarf und Hilfsangebote in der Versorgung von unbegleiteten minderjährigen Flüchtlingen: Eine systematische Übersicht (Demand for Help and Provision of Services in the Care of Unaccompanied Refugee Minors: A Systematic Review). *Kindheit und Entwicklung* 2015;24:209–24.
20. Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med* 2009;6:e1000097.
21. The Joanna Briggs Institute. Critical Appraisal Tools Download. <http://joannabriggs.org/research/critical-appraisal-tools.html> (accessed Jan 2018).
22. Bean T, Eurelings-Bontekoe E, Mooijaart A, et al. Factors associated with mental health service need and utilization among unaccompanied refugee adolescents. *Adm Policy Ment Health* 2006;33:342–55.
23. Jensen TK, Fjermestad KW, Granly L, et al. Stressful life experiences and mental health problems among unaccompanied asylum-seeking children. *Clin Child Psychol Psychiatry* 2015;20:106–16.
24. Vervliet M, Meyer Demott MA, Jakobsen M, et al. The mental health of unaccompanied refugee minors on arrival in the host country. *Scand J Psychol* 2014;55:33–7.
25. Jensen TK, Skårdalsmo EM, Fjermestad KW. Development of mental health problems – a follow-up study of unaccompanied refugee minors. *Child Adolesc Psychiatry Ment Health* 2014;8:29.
26. Smid GE, Lensvelt-Mulders GJ, Knipscheer JW, et al. Late-onset PTSD in unaccompanied refugee minors: exploring the predictive utility of depression and anxiety symptoms. *J Clin Child Adolesc Psychol* 2011;40:742–55.
27. Vervliet M, Lammertyn J, Broekaert E, et al. Longitudinal follow-up of the mental health of unaccompanied refugee minors. *Eur Child Adolesc Psychiatry* 2014;23:337–46.
28. Reijneveld SA, de Boer JB, Bean T, et al. Unaccompanied adolescents seeking asylum: poorer mental health under a restrictive reception. *J Nerv Ment Dis* 2005;193:759–61.
29. Piccinelli M, Wilkinson G. Gender differences in depression. Critical review. *Br J Psychiatry* 2000;177:486–92.
30. Kuehner C. Gender differences in unipolar depression: an update of epidemiological findings and possible explanations. *Acta Psychiatr Scand* 2003;108:163–74.
31. Tolin DF, Foa EB. Sex differences in trauma and posttraumatic stress disorder: a quantitative review of 25 years of research. *Psychol Bull* 2006;132:959–92.
32. Lamkaddem M, Essink-Bot ML, Devillé W, et al. Health changes of refugees from Afghanistan, Iran and Somalia: the role of residence status and experienced living difficulties in the resettlement process. *Eur J Public Health* 2015;25:917–22.
33. Eurostat Press Office. Asylum applicants considered to be unaccompanied minors – 63 300 unaccompanied minors among asylum seekers registered in the EU in 2016. 2017 <http://ec.europa.eu/eurostat/documents/2995521/8016696/3-11052017-AP-EN.pdf/30ca2206-0db9-4076-a681-e069a4bc5290> (accessed Jan 2018).