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Association of cultural origin and migration status with work-related mental health of migrants and refugees in Europe with special consideration to the health care sector – A systematic review protocol

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Association of cultural origin and migration status with work-related mental health of migrants and refugees in Europe with special consideration to the health care sector – A systematic review protocol

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ABSTRACT

Introduction Migrants make up a significant proportion of the European working population. Previous studies have already shown that migrants and refugees often suffer from poor work-related conditions in the host country, which might have an impact on mental health. Thus, the main objective of this systematic review is to analyze and summarize existing research on work-related conditions of migrants and refugees in Europe and to investigate the relationship of these conditions with their mental health.

Methods and analysis Three electronic databases (PubMed/MEDLINE, PsycINFO and CINAHL) will be systematically searched for eligible articles using quantitative study designs (randomized controlled trials, cohort, case-control and cross-sectional studies with and without control groups) written in English, German, French, Italian, Polish, Spanish or Turkish and published since 2016. The primary health outcomes will be psychiatric and psychological symptoms, perceived distress, diagnosed psychiatric and psychological disorders, suicide and suicide attempts. The secondary health outcomes will be more general concepts of mental health such as well-being and life satisfaction. Outcome measures must have been assessed by validated questionnaires. Screening of all articles, reference lists of included studies and relevant reviews as well as data extraction will be performed independently by two review authors. Methodological quality of primary studies will be assessed and discussed. The results of the primary studies will be summarized descriptively. Migrants and natives, migrants and refugees, and migrants of different cultural backgrounds will be compared in terms of the association between their work-related conditions and their mental health, with a special focus on employees in the health care sector.

Ethics and dissemination This systematic review is excluded from ethical approval because it will use previously approved published data from primary studies. The results of this review will be submitted to a related peer-reviewed journal.

Trial registration number: will be added as soon as available

Strengths and limitations of the study:

- This systematic review about the association of work-related conditions and mental health of migrants and refugees in Europe will base on a detailed search strategy including studies from European countries published in the last five years in seven European languages.
- Screening of articles as well as data extraction and methodological quality assessment using an appropriate validated tool will be performed independently by two review authors to minimize the probability of personal biases.
- Due to time and language limitations, not all relevant studies might be found.
- The heterogeneity of self-report measures of mental health and work-related conditions complicates the direct comparability of primary studies. However, the main aim of this review is to describe the investigated association, which is why this should be seen as an advantage.

INTRODUCTION

In recent years, there has been a substantial increase in global migration. In 2019, 272 million people migrated worldwide. One year later, among those migrating internationally, 25.9 million represented refugees and asylum seekers. With the main migration destinations being high-income countries,¹ Europe represents one of the regions with the highest number of migrants. Almost every third migrant worldwide lives in Europe. Approximately 11% of the population in European countries can be considered migrants.² Some countries in Europe even have a significantly higher percentage of migrants in their society. Switzerland leads with 29.9% of migrants, followed by Sweden with 20%, Austria with 19.9% and Belgium with 17.2%.³ A closer look at the countries of origin of migrants and

refugees reveals a very heterogeneous picture. While migration from one European country to another can be described as the largest migration corridor worldwide, 2019 also saw large inflows of migrants from Northern and Western Africa, Central and Southern Asia, Latin America and the Caribbean and Sub-Saharan Africa.² All those migrants make up a not insignificant part of the working population in Europe.¹

Various studies have already examined the working conditions that migrants are confronted with in their host country worldwide. These studies have often revealed disadvantages in labor market integration such as difficulties in finding a job which ultimately leads to higher unemployment rates for migrants.⁴ Moreover, it became clear that migrants often suffer from worse working conditions than their autochthonous counterparts. For example, they are often hired in jobs that are considered low-skilled⁵ and compensated with a low income.⁶ Furthermore, they are more likely to be exposed to various health hazards in the workplace, such as pesticides and chemicals, and show increased potential for injury.⁶⁻⁹ Migrants from low- and middle-income countries seem to be particularly vulnerable.¹⁰ Further, migrant workers are more likely to experience exploitation and abuse,⁶ as well as physical, psychological, and sexual violence,⁷ with women being at particular risk.⁶ These negative working conditions affect both the physical and mental health of migrants.^{7 10} In terms of mental well-being, mental health disadvantages such as psychotic, neurotic, and mood disorders were identified.⁷ Other studies, however, found no meaningful difference in working conditions between migrant and autochthonous workers.¹¹ Due to the inconsistent findings, it is important to look more deeply into work-related conditions of migrants in order to preventively protect their mental health.

The already mentioned very heterogeneous regions of origin of migrants in Europe represent countries of very different cultural backgrounds, all of which converge in the destination region. These cultural differences might lead to difficulties in living together in a common destination country. One of the most relevant classifications of cultural backgrounds is offered by Hofstede's categorization of collectivist societies and individualist societies. Individualistic cultures are characterized by relatively loose ties between individuals, whereas in collectivistic cultures life tends to take place in strong, cohesive in-groups.¹² Individualism is more prevalent in Western and developing countries, while collectivism is more common in less developed and Eastern countries.¹³ However, cultural origin not only has an influence on life in society, but also on working life. For example, an experimental study by Earley¹⁴ showed that collectivist subjects performed best when they worked in a group and anonymously, while they performed weakest when they worked alone and their performance was traceable. Subjects with individualistic backgrounds, however, performed best when they worked alone and their performance was traceable. Their performance was very weak when working in a group and when their performance was not comprehensible.¹⁴ Furthermore, differences in the quality and level of education in non-European countries in contrast to European countries^{15 16} might influence the chances to receive a desirable employment in the host country. Accordingly, professional training from a non-European country might lead to worse work-related conditions. These cultural differences due to origin highlight the different needs and statuses of people of different cultural origins that have to be addressed in preventing the development of mental health problems among migrant workers in Europe. In conclusion, we should shed more light on differences in work-related conditions and their relationship with mental health among migrants of different cultural backgrounds.

In terms of distinguishing people of different cultural backgrounds, the question also arises about the extent to which migrant and refugee workers differ in terms of work-related conditions and their relationship to mental health as the population of refugees represents a special group of migrants. They can be seen as a specific migrant group because they have different pre- and postmigratory conditions¹⁷ due to the sometimes traumatic refugee experience¹⁸ itself and the subsequent asylum process,¹⁹ making them differently vulnerable to mental health problems.¹⁷⁻¹⁹ In line with this, various

previous studies have shown that involuntarily migrated refugees suffer significantly more often from mental illnesses such as depression, anxiety and post-traumatic stress disorder than voluntarily migrated labor migrants.²⁰ The extent to which refugees suffer mentally from their working conditions has rarely been studied. Nevertheless, the findings show that differences exist between migrants and refugees in labor market outcomes. Refugees are characterized by their disadvantages in the work context in comparison to autochthones and other migrant groups.²¹ For example, Jamil et al. showed that refugees were twice as likely to suffer from unemployment than immigrants.²² This shows that migrants and refugees hold different positions in the labor market.

In recent years, there has been a significant increase in migrant doctors, nurses and other health care workers in Europe.²³ In Germany, for example, recruiting care professionals from abroad has become an important strategy for alleviating the shortage of skilled nursing staff, which is set to become even more acute in future.²⁴ Thereby the working conditions of employees in the health care sector have been described as particularly psychologically burdened and thus having a strong impact on the mental health of both native and foreign-born employees. Various meta-analyses and reviews showed that burnout symptoms are very common among nursing staff.²⁵⁻²⁹ Specific working conditions such as workload,²⁸ job demands, job control, social support, and exposure to traumatic experiences have been identified as factors of the development of burnout symptoms in this occupational group.²⁵ Accordingly, especially professions in the health care sector seem to be affected by migration-typical difficulties, which will continue to be a problem to be overcome in the future.

Increased migration to Europe, as well as the fact that migrants and refugees make up a non-negligible portion of the workforce in Europe, highlight the importance of more in-depth research on work-related conditions and their influence on the mental health of migrants and refugees in Europe. Another reason for the European focus is the fact that Europe's migration history and immigration policy differs from that of other Western countries such as the so-called classic immigration countries USA, Canada and Australia.³⁰ Although some research groups have already engaged in the study of work-related conditions and their influence on the mental well-being of migrants worldwide, to our knowledge, no systematic review exists in this area with a specific European focus. Thus, there is a need to better understand and systematically evaluate the association of work-related conditions on the mental health of migrants and refugees in Europe with special consideration to their origins and migration status (voluntarily migrated migrants vs. involuntarily migrated refugees). Due to the increasing shortage of skilled health care workers in the future and the increased recruitment of migrant qualified employees in the field of hospital staff, we will pay special attention to this occupational sector.

OBJECTIVES

The main objective of our planned systematic review is to analyze and summarize the a) association between work-related conditions and mental health of migrants and refugees in Europe.

To broaden understanding of this association we will further b) describe the kinds of work-related conditions of migrants and refugees in Europe and c) compare them to autochthonous workers. Furthermore, we will examine d) if migration experience (migrants/refugees vs. natives) influences the association of work-related conditions and mental health and e) if migration status (migrants vs. refugees) influences the association between work-related conditions and mental health. Additionally, we will f) compare migrants and refugees of different cultural backgrounds in Europe in terms of the association between work-related conditions and mental health. Finally, we will concentrate on the subgroup of migrants and refugees in the health care sector in Europe to analyze g) if there are

differences in the association of work-related conditions and mental health between migrants and refugees, migrants/refugees and natives and migrants and refugees of different cultural backgrounds.

METHODS AND ANALYSIS

This study protocol is developed in accordance with the reporting guidance “Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols (PRISMA-P) statement”.³¹ It was registered on March 24, 2021 within the International Prospective Register of Systematic Reviews (PROSPERO) (registration number: xx). Significant protocol amendments will be announced with the publication of the systematic review.

Eligibility criteria

The eligibility criteria of the included studies will be described based on the Population, Exposure, Comparator, and Outcome (PECO) framework.

Types of population

We will include studies of internationally migrated first-generation migrants, refugees and asylum seekers (both summarized as “refugees” in the following) of working age (15-70 years). Participants must be currently working and residing in any European country. We will explicitly exclude studies of intranational migrants or refugees, second-generation migrants, migrants and refugees younger than 15 or older than 70 years, not currently working (which includes students and apprentices) and not living in European countries.

Types of exposure

We will include original studies of the association of any work-related conditions with the mental health of migrants and refugees in Europe. Work-related conditions include organizational conditions (income, work contract, ...), social conditions at work (discrimination, violence, ...) or special issues such as post-migration stressors migrants and refugees in Europe are confronted with at the workplace (language barriers, mentality differences, ...)

Types of comparators

A comparison/control group is not obligatory. We will include studies comparing a) migrant/refugee workers with autochthonous workers, b) migrant workers with refugee workers, c) migrant worker groups of different cultural origins and d) burdened with unburdened workers regarding their work-related conditions and mental health outcomes. Furthermore, studies might also compare workers with different characteristics of work-related conditions in relation to their mental health.

Types of outcomes

The primary outcomes of interest are psychiatric and psychological symptoms, perceived distress, diagnosed psychiatric and psychological disorders or suicide or attempted suicide. The secondary mental health outcomes are indicators of well-being such as quality of life and life satisfaction. The results of the included studies will be classified separately into these categories. Only studies examining at least one migrants’ or refugees’ mental health outcome with a validated measure will be included. Translated measurements in order to quantify migrant or refugee workers’ mental health must have been at least validated in the original language.

Study design

We will include quantitative studies such as randomized controlled trials, cohort studies, case-control studies and cross-sectional studies with and without control groups. We will explicitly exclude qualitative studies and case studies. Reviews will be screened for relevant references before exclusion. Studies focusing on migrants' and refugees' work-related conditions only as well as studies focusing on migrants' and refugees' mental health only, without any consideration to the association between work-related conditions and mental health outcomes, will be excluded.

Setting and time frame

No restrictions by the type of setting will be used. Studies published between January 1, 2016 and March 16, 2021 will be included.

Language

Studies written in English, German, French, Italian, Polish, Spanish and Turkish will be included.

Publication status

Studies published in peer-reviewed journals will be included. Unpublished studies as well as editorials, letters, "grey literature" such as conference abstracts, dissertations and non-peer review articles will be excluded. Only full-text versions of relevant studies (assessed by using the "Strengthening the Reporting of Observational Studies in Epidemiology (STROBE-) Statement"³²) will be considered.

Information sources

Three electronic databases (PubMed/Medline, PsycINFO and CINAHL) will be systematically searched for relevant literature. Additionally, the reference lists of included studies and relevant reviews will be searched. A contact of authors of primary studies is not planned.

Search strategy

The search terms and syntax include combinations of MeSH Terms, where applicable, and title/abstract text terms based on the eligibility criteria. According to the eligibility criteria the strategy includes three search term clusters: 1) terms related to the study population such as "migrant*" or "refugee*", 2) terms related to work-related conditions such as "employ*" or "work*", and 3) terms related to mental health outcomes such as "mental disorder*" or "well-being".

In the following, an exemplary search syntax is shown based on the search in PubMed: (("transients and migrants"[MeSH Terms] OR "emigrants and immigrants"[MeSH Terms] OR "refugees"[MeSH Terms] OR "ethnic groups"[MeSH Terms] OR "minority groups"[MeSH Terms] OR "human migration"[MeSH Terms] OR "migra*" [Title/Abstract] OR "emigra*" [Title/Abstract] OR "immigra*" [Title/Abstract] OR "refugee*" [Title/Abstract] OR "asylum seeker*" [Title/Abstract] OR "foreign*" [Title/Abstract] OR "resettl*" [Title/Abstract] OR "guest worker*" [Title/Abstract] OR "displaced person*" [Title/Abstract]) AND ("employment"[MeSH Terms] OR "work"[MeSH Terms] OR "occupations"[MeSH Terms] OR "employ*" [Title/Abstract] OR "work*" [Title/Abstract] OR "occupation*" [Title/Abstract] OR "vocation*" [Title/Abstract] OR "jobs" [Title/Abstract] OR "job" [Title/Abstract]) AND ("mental health"[MeSH Terms] OR "mental disorders"[MeSH Terms] OR "stress, psychological"[MeSH Terms] OR "mental fatigue"[MeSH Terms] OR "depressive disorder"[MeSH Terms] OR "depression"[MeSH Terms]) OR "quality of life"[MeSH Terms] OR "well-being" [Title/Abstract] OR "wellbeing" [Title/Abstract] OR "quality of life" [Title/Abstract] OR "life satisfaction" [Title/Abstract] OR "mental*" [Title/Abstract] OR "psychiatric*" [Title/Abstract] OR "psychological*" [Title/Abstract] OR "anxi*" [Title/Abstract] OR "depress*" [Title/Abstract] OR "burnout" [Title/Abstract] OR "burn-out" [Title/Abstract] OR "somatization" [Title/Abstract] OR "somatisation" [Title/Abstract] OR "somatoform" [Title/Abstract] OR "pain disorder" [Title/Abstract] OR

"somatic symptom disorder"[Title/Abstract] OR "suicid*"[Title/Abstract] OR "insomnia"[Title/Abstract] OR "emotional stress"[Title/Abstract] OR "distress"[Title/Abstract])) NOT ("USA"[Title/Abstract] OR "United States"[Title/Abstract] OR "Canada"[Title/Abstract] OR "Australia"[Title/Abstract] OR "migraine"[Title/Abstract] OR "cancer"[Title/Abstract] OR "qualitative stud*"[Title/Abstract]) Filters: English, French, German, Italian, Polish, Spanish, Turkish, from 2016/1/1 - 2021/3/31. The exact search strategies for the other two electronic databases can be found in Supplement 1.

Study records

Data management

EndNote X9³³ and an Excel spreadsheet will be used for data management.

Data collection, selection process, and extraction

After identification and exclusion of duplicates two review authors will independently screen the titles and abstracts of the publications based on the inclusion and exclusion criteria. The full texts of the relevant articles will then independently be assessed by the two reviewers to decide whether they meet the inclusion criteria. The reference lists of review articles and the included publications will be scanned for relevant articles missed in the initial search. Any disagreements will be discussed between the two reviewers and if an agreement cannot be reached a third/fourth reviewer will be consulted. A PRISMA flow chart³¹ showing details of studies included and excluded at each stage of the study selection process will be provided.

Data items

From each included study the two review authors will independently extract data on the following variables:

- Study characteristics: study authors, publication year, study design, country
- Population characteristics: sample size with gender distribution, information about the existence of a control group and the type of group(s) (migrant workers vs. native workers, migrant workers vs. refugee workers, workers of different cultural origins) and size of group(s), migrants' and refugees' countries of origin
- Exposure: kinds of work-related conditions and measurement instrument, if available
- Outcome: primary and secondary mental health indices and measurement instrument
- Main results of the study

In case of disagreement between the two authors, a third/fourth reviewer will be consulted.

Risk of bias in individual studies

The two review authors will independently evaluate the quality of research papers using the "Newcastle Ottawa Quality Assessment Scale" (NOS)³⁴ for cohort studies, case-control studies and cross-sectional studies. Finally, each study will receive a score for low (0-3 points), moderate (4-6), or high quality (7-9). In the case of relevant randomized controlled trials the revised "Cochrane risk-of-bias tool" (RoB 2)³⁵ will be used. Disagreements will be first discussed between the two reviewers. If agreement will not be reached, a third/fourth reviewer will be consulted.

Additionally, the validity of the used mental health measure will be assessed by stating whether a validated questionnaire was used in the original language or whether only the translation of such a measure or a validated or a cultural adapted version was used.

Data analysis and synthesis

One review author will carry out a narrative (descriptive) synthesis of the included studies following the PRISMA checklist³¹ (see above). No formal quantitative analysis will be conducted. As part of the synthesis the quality assessment will be discussed, thereby studies of poor quality will be identified. Their potential impact on the overall results will be discussed. Based on the synthesis, the extent to which work-related conditions differ between workers of different origins in Europe and the extent to which they affect mental health will be shown. In addition, recommendations will be presented on how to improve work-related conditions for the vulnerable group of migrants and refugees in Europe to guarantee their psychological well-being and their working capability.

If relevant studies focusing on subgroups will be found, comparisons will descriptively be conducted. If possible, we will compare migrants' and refugees' work-related conditions with natives' work-related conditions as well as their impact on the mental health of both subgroups. Furthermore, we will present differences or similarities of work-related conditions and their impact on mental health between migrants and refugees, if possible. Additionally, we will report differences or similarities of work-related conditions and their impact on mental health between migrant/refugee workers of different cultural origins by categorizing their countries of origins according to the theory of collectivism and individualism by Hofstede.¹² The rising number of migrant workers in the health care sector²³ and the known high psychological stress perceived in this profession²⁵⁻²⁹ illustrates the importance of taking this specific occupation into account. Therefore, we will look separately at migrant and refugee employees of the health care sector in terms of the association between work-related conditions and mental health, as well as differences or similarities between migrants and refugees, migrants/refugees and autochthones, and migrants/refugees of different cultural backgrounds.

Ethics and dissemination

This systematic review will be submitted to a leading journal in this field.

DISCUSSION

This systematic review will provide in-depth insight into the relationship between work-related conditions and their influence on the mental health of migrants and refugees in Europe. Taking into account current quantitative research, this systematic review will address the following research questions: It will provide information a) on the types of work-related conditions migrants and refugees face in the labor market in Europe, and the extent to which these conditions impact mental health. Furthermore, it will be shown b) whether migrants and refugees work under different work-related conditions than autochthonous workers, and c) to what extent migrants and refugees differ compared to natives regarding the relationship between work-related conditions and mental health. In addition, the study will examine d) whether migrants and refugees e) as well as migrants and refugees of different cultural backgrounds differ in terms of the relationship between work-related conditions and mental health. Lastly, f) the vulnerable group of health care workers will be examined separately in terms of the relationship between work-related conditions and mental health depending on migrant status and cultural origin.

Some sources of bias risk can be identified in advance. Since "gray literature" will be explicitly excluded, publication bias cannot be prevented.³⁶ However, "gray literature", especially conference papers, often do not provide precise details to be useful for screening relevant research,³⁷ thus not too much methodological loss is to be expected here.

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Furthermore, the exclusion of primary studies published before 2016 could introduce the problem of not finding important studies published in the years before. However, since there was a huge growth of asylum seekers migrating to Europe since 2014 (but more so in 2015 and 2016),³⁸ we decided to limit the inclusion of relevant studies to this period. That is, because from 2016 onwards the direct impact of refugee movements on the labor market can be captured and thus the scientific data reflect the current situation.

Since we cannot include all primary studies regardless of language, the problem might arise that not all relevant studies may be found. However, since we have the ability to include studies in seven different languages, we cover a wide range of relevant primary studies, especially since our language skills coincide with common languages in the European region and it can be assumed that relevant studies might be published mainly in these languages.

When looking at the methods of measurement for mental health, it is apparent that large variety of constructs as well as methods will be incorporated. These include self-reported measures of both psycho-psychiatric symptoms or medical diagnoses and more general constructs such as well-being or quality of life or, in some circumstances, suicide rates or attempted suicide. However, by explicitly excluding non-validated measurement instruments to assess mental health, health outcomes can be compared quite well. Nevertheless, it must be noted that self-reported measures should always be viewed critically due to bias susceptibility because of social desirability or specific response tendencies of the participant.³⁹ With regard to work-related conditions, however, it must be noted that no validated measures must have been used in the primary studies. This complicates the comparability of the data. However, since our aim is also to report descriptively on work-related conditions, the high variety of different work-related conditions due to the very different assessments should be seen as an advantage rather than a disadvantage.

The connection between stress at work and mental health has been perceived very clearly in recent years.⁵ Workplace-related stress and mental disorders resulting hereof lead to many days of absence from work in Western countries.⁴⁰ Measures should be developed to improve conditions at the workplace and thus minimize the causes for mental disorders, or to offer low-threshold psychotherapies directly at the workplace. Therefore, it is of upmost importance to be informed about the specific conditions and distress of immigrants in the workplace as migrants and refugees make up a not insignificant part of the working population in European society.¹ This systematic review will increase our insights in this context and thereby also contribute to the optimization of conditions at the workplace and mental health.

To our knowledge this planned systematic review will be the first to examine work-related conditions and mental health of migrants and refugees, comparing both population groups while additionally considering cultural backgrounds and paying special attention to the health care sector.

Author contributions

YE conceived the initial idea for the review. RH, FW, AK, EM and YE designed the review. SU participated in study design. AV provided expert input on theoretical considerations. RH drafted the manuscript. All the authors contributed to the revision of the manuscript and approved the final version. RH is the guarantor of the systematic review.

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Competing interests

None declared.

REFERENCES

1. McAuliffe M, Khadria B. Report Overview: Providing perspective on migration and mobility in increasingly uncertain times. In: Gibson M, ed. World Migration Report. Geneva, Switzerland: International Organization for Migration 2019.
2. United Nations DoEaSA, Population Division. International Migrant Stock 2019 (United Nations database) 2019 [Available from: https://www.un.org/en/development/desa/population/migration/data/estimates2/estimate_s19.asp accessed 2021/03/22.
3. McAuliffe M, Kitimbo A, Abel G, et al. Migration and migrants: Regional dimensions and developments. In: Gibson M, ed. World Migration Report 2020. Geneva, Switzerland: International Organization for Migration 2019:53-124.
4. Uhlendorff A, Zimmermann KF. Unemployment dynamics among migrants and natives. *Economica* 2014;81:348-67. doi: 10.1111/ecca12077
5. Arici C, Ronda-Perez E, Tamhid T, et al. Occupational Health and Safety of Immigrant Workers in Italy and Spain: A Scoping Review. *Int J Environ Res Public Health* 2019;16(22) doi: 10.3390/ijerph16224416 [published Online First: 2019/11/14]
6. Moyce SC, Schenker M. Migrant Workers and Their Occupational Health and Safety. *Annu Rev Public Health* 2018;39:351-65. doi: 10.1146/annurev-publhealth-040617-013714 [published Online First: 2018/02/06]
7. Malhotra R, Arambepola C, Tarun S, et al. Health issues of female foreign domestic workers: a systematic review of the scientific and gray literature. *International Journal of Occupational and Environmental Health* 2013;19(4):261-77. doi: 10.1179/2049396713Y.0000000041
8. Orrenius PM, Zavodny M. Do immigrants work in riskier jobs? *Demography* 2009;46(3):535-51.
9. Yanar B, Kosny A, Smith PM. Occupational Health and Safety Vulnerability of Recent Immigrants and Refugees. *Int J Environ Res Public Health* 2018;15(9) doi: 10.3390/ijerph15092004 [published Online First: 2018/09/19]
10. Hargreaves S, Rustage K, Nellums LB, et al. Occupational health outcomes among international migrant workers: a systematic review and meta-analysis. *Lancet Glob Health* 2019;7(7):e872-e82. doi: 10.1016/S2214-109X(19)30204-9 [published Online First: 2019/05/28]
11. Sterud T, Tynes T, Mehlum IS, et al. A systematic review of working conditions and occupational health among immigrants in Europe and Canada. *BMC Public Health* 2018;18(1):770. doi: 10.1186/s12889-018-5703-3 [published Online First: 2018/06/22]
12. Hofstede G. Dimensionalizing Cultures: The Hofstede Model in context. *Online Readings in Psychology and Culture* 2011;2(1):1-26.
13. Hofstede G, Hofstede GJ, Minkov M. Cultures and organizations - Software of the mind, 3rd edition. United States: The McGraw-Hill Professional 2010:1-576.
14. Early PC. Social loafing and collectivism: A comparison of the United States and the People's Republic of China. *Administrative Science Quarterly* 1989;34(4):565-81.
15. Helgesson M, Wang M, Niederkrotenthaler T, et al. Labour market marginalisation among refugees from different countries of birth: a prospective cohort study on refugees to Sweden. *J Epidemiol Community Health* 2019;73(5):407-15. doi: 10.1136/jech-2018-211177 [published Online First: 2019/02/14]
16. Ronda-Perez E, Martinez JM, Reid A, et al. Longer Residence of Ecuadorian and Colombian Migrant Workers in Spain Associated with New Episodes of Common Mental Disorders. *Int J*

- Environ Res Public Health* 2019;16(11) doi: 10.3390/ijerph16112027 [published Online First: 2019/06/09]
17. Porter M, Haslam N. Predisplacement and postdisplacement factors associated with mental health of refugees and internally displaced persons: a meta-analysis. *JAMA* 2005;294(5):602-12. doi: 10.1001/jama.294.5.602 [published Online First: 2005/08/04]
 18. Heeren M, Wittmann L, Ehler U, et al. Psychopathology and resident status - comparing asylum seekers, refugees, illegal migrants, labor migrants, and residents. *Compr Psychiatry* 2014;55(4):818-25. doi: 10.1016/j.comppsy.2014.02.003 [published Online First: 2014/03/19]
 19. Laban CJ, Gernaat HB, Komproe IH, et al. Impact of a long asylum procedure on the prevalence of psychiatric disorders in Iraqi asylum seekers in The Netherlands. *J Nerv Ment Dis* 2004;192(12):843-51. doi: 10.1097/01.nmd.0000146739.26187.15 [published Online First: 2004/12/08]
 20. Lindert J, Brahler E, Wittig U, et al. Depressivität, Angst und posttraumatische Belastungsstörung bei Arbeitsmigranten, Asylbewerbern und Flüchtlingen. Systematische Übersichtsarbeit zu Originalstudien. *Psychother Psychosom Med Psychol* 2008;58(3-4):109-22. doi: 10.1055/s-2008-1067358 [published Online First: 2008/04/19]
 21. Martín I, Arcarons A, Aumüller J, et al. From refugees to workers: Mapping labour market integration support measures for asylum-seekers and refugees in EU member states. Gütersloh, Germany: Bertelsmann Stiftung 2016:1-176.
 22. Jamil H, Kanno SS, Abo-Shasha R, et al. Promoters and barriers to work: a comparative study of refugees versus immigrants in the United States. *New Iraqi J Med* 2012;8(2):19-28. [published Online First: 2012/01/01]
 23. Larsen JA, Allan HT, Bryan K, et al. Overseas nurses' motivations for working in the UK: Globalization and life politics. *Work, employment and society* 2005;19(2):349-68. doi: 10.1177/0950017005053177
 24. Pütz R, Kontos M, Larsen C, et al. Betriebliche Integration von Pflegefachkräften aus dem Ausland: Innenansichten zu Herausforderungen globalisierter Arbeitsmärkte. Düsseldorf, Germany: Hans-Böckler-Stiftung 2019.
 25. Adriaenssens J, De Gucht V, Maes S. Determinants and prevalence of burnout in emergency nurses: a systematic review of 25 years of research. *Int J Nurs Stud* 2015;52(2):649-61. doi: 10.1016/j.ijnurstu.2014.11.004 [published Online First: 2014/12/04]
 26. Canadas-De la Fuente GA, Gomez-Urquiza JL, Ortega-Campos EM, et al. Prevalence of burnout syndrome in oncology nursing: A meta-analytic study. *Psychooncology* 2018;27(5):1426-33. doi: 10.1002/pon.4632 [published Online First: 2018/01/10]
 27. Gomez-Urquiza JL, De la Fuente-Solana EI, Albendin-Garcia L, et al. Prevalence of Burnout Syndrome in Emergency Nurses: A Meta-Analysis. *Crit Care Nurse* 2017;37(5):e1-e9. doi: 10.4037/ccn2017508 [published Online First: 2017/10/03]
 28. Sherman AC, Edwards D, Simonton S, et al. Caregiver stress and burnout in an oncology unit. *Palliat Support Care* 2006;4(1):65-80. doi: 10.1017/s1478951506060081 [published Online First: 2006/08/08]
 29. van der Doef M, Mbazzi FB, Verhoeven C. Job conditions, job satisfaction, somatic complaints and burnout among East African nurses. *J Clin Nurs* 2012;21(11-12):1763-75. doi: 10.1111/j.1365-2702.2011.03995.x [published Online First: 2012/03/31]
 30. Hoesch K. Migration und Integration in internationaler Perspektive. Migration und Integration - Eine Einführung. Münster, Deutschland: Springer VS 2018:126-215.
 31. Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *J Clin Epidemiol* 2009;62(10):1006-12. doi: 10.1016/j.jclinepi.2009.06.005 [published Online First: 2009/07/28]
 32. von Elm E, Altman DG, Egger M, et al. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: Guidelines for reporting observational studies. *International Journal of Surgery* 2007;12(12):1495-99. doi: 10.1016/j.ijsu.2014.07.013
 33. EndNote [program]. EndNote X9 version. Philadelphia, PA: Clarivate, 2013.

- 1
2
3 34. Wells G, Shea B, O'Connell D, et al. The Newcastle-Ottawa Scale (NOS) for assessing the quality of
4 nonrandomised studies in meta-analyses 2000 [Available from:
5 http://www.ohri.ca/programs/clinical_epidemiology/oxford.asp accessed 2021/03/23.
6
7 35. Sterne JAC, Savovic J, Page MJ, et al. RoB 2: a revised tool for assessing risk of bias in randomised
8 trials. *BMJ* 2019;366:l4898. doi: 10.1136/bmj.l4898 [published Online First: 2019/08/30]
9
10 36. Scherer RW, Langenberg P, von Elm E. Full publication of results initially presented in abstracts.
11 *Cochrane Database Syst Rev* 2007(2):MR000005. doi: 10.1002/14651858.MR000005.pub3
12 [published Online First: 2007/04/20]
13
14 37. O'Connor AM, Anderson KM, Goodell CK, et al. Conducting systematic reviews of intervention
15 questions I: Writing the review protocol, formulating the question and searching the
16 literature. *Zoonoses and Public Health* 2014;61(1):28-38. doi: 10.1111/zph.12125
17
18 38. Grote J. Die veränderte Fluchtmigration in den Jahren 2014 bis 2016: Reaktionen und
19 Maßnahmen in Deutschland; Fokusstudie der deutschen nationalen Kontaktstelle für das
20 Europäische Migrationsnetzwerk (EMN). Nürnberg, Germany: Bundesamt für Migration und
21 Flüchtlinge (BAMF) 2018.
22
23 39. Furnham A, Henderson M. The good, the bad and the mad: Response bias in self-report
24 measures. *Personality and Individual Differences* 1982;3(3):311-20. doi: 10.1016/0191-
25 8869(82)90051-4
26
27 40. Hansen H-T, Holmas TH, Islam MK, et al. Sickness absence among immigrants in Norway: Does
28 occupational disparity matter? *European Sociological Review* 2014;30(1):1-12. doi:
29 10.1093/esr/jct007
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SUPPLEMENT 1

Exact search strategies of PsycINFO and CINAHL, 15/03/2021

PsycINFO via EBSCOhost:

(TI emigra* OR TI immigra* OR TI refugee* OR TI "asylum seeker*" OR TI foreign* OR TI resettl* OR TI "guest worker*" OR TI "displaced person*" OR AB migra* OR AB emigra* OR AB immigra* OR AB refugee* OR AB "asylum seeker*" OR AB foreign* OR AB resettl* OR AB "guest worker*" OR AB "displaced person*") AND (TI employ* OR TI work* OR TI occupation* OR TI vocation* OR TI jobs OR TI job OR AB employ* OR AB work* OR AB occupation* OR AB vocation* OR AB jobs OR AB job) AND (TI "mental health" OR TI "psychosocial health" OR TI "mental disorder*" OR TI "psychosocial disorder*" OR TI distress OR TI "emotional stress" OR TI "well-being" OR TI wellbeing OR TI "quality of life" OR TI "life satisfaction" OR AB "mental health" OR AB "psychosocial health" OR AB "mental disorder*" OR AB "psychosocial disorder*" OR AB distress OR AB "emotional stress" OR AB "well-being" OR AB wellbeing OR AB "quality of life" OR AB "life satisfaction") NOT (TI USA OR TI "United States" OR TI Canada OR TI Australia OR TI migraine OR TI cancer OR TI "qualitative stud*" OR AB USA OR AB "United States" OR AB Canada OR AB Australia OR AB migraine OR AB cancer OR AB "qualitative stud*") Limiters - Publication Year: 2016-2021 Expanders - Apply equivalent subjects Narrow by Language: - turkish Narrow by Language: - french Narrow by Language: - italian Narrow by Language: - spanish; castilian Narrow by Language: - german Narrow by Language: - english Search modes - Boolean/Phrase

CINAHL via EBSCOhost:

(TI migra* OR TI emigra* OR TI immigra* OR TI refugee* OR TI "asylum seeker*" OR TI foreign* OR TI resettl* OR TI "guest worker*" OR TI "displaced person*" OR AB migra* OR AB emigra* OR AB immigra* OR AB refugee* OR AB "asylum seeker*" OR AB foreign* OR AB resettl* OR AB "guest worker*" OR AB "displaced person*") AND (TI employ* OR TI work* OR TI occupation* OR TI vocation* OR TI jobs OR TI job OR AB employ* OR AB work* OR AB occupation* OR AB vocation* OR AB jobs OR AB job) AND (TI "mental health" OR TI "psychosocial health" OR TI "mental disorder*" OR TI "psychosocial disorder*" OR TI distress OR TI "emotional stress" OR TI "well-being" OR TI wellbeing OR TI "quality of life" OR TI "life satisfaction" OR AB "mental health" OR AB "psychosocial health" OR AB "mental disorder*" OR AB "psychosocial disorder*" OR AB distress OR AB "emotional stress" OR AB "well-being" OR AB wellbeing OR AB "quality of life" OR AB "life satisfaction") NOT (TI USA OR TI "United States" OR TI Canada OR TI Australia OR TI migraine OR TI cancer OR TI "qualitative stud*" OR AB USA OR AB "United States" OR AB Canada OR AB Australia OR AB migraine OR AB cancer OR AB "qualitative stud*") Limiters - Published Date: 20160101-20211231 Expanders - Apply equivalent subjects Narrow by Language: - spanish Narrow by Language: - german Narrow by Language: - english Search modes - Boolean/Phrase

Reporting checklist for protocol of a systematic review and meta analysis.

Based on the PRISMA-P guidelines.

Instructions to authors

Complete this checklist by entering the page numbers from your manuscript where readers will find each of the items listed below.

Your article may not currently address all the items on the checklist. Please modify your text to include the missing information. If you are certain that an item does not apply, please write "n/a" and provide a short explanation.

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In your methods section, say that you used the PRISMA-Preorting guidelines, and cite them as:

Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart LA. Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) 2015 statement. Syst Rev. 2015;4(1):1.

		Reporting Item	Page Number
Title			
Identification	#1a	Identify the report as a protocol of a systematic review	1
Update	#1b	If the protocol is for an update of a previous systematic review, identify as such	n/a
Registration			
	#2	If registered, provide the name of the registry (such as PROSPERO) and registration number	1, 5
Authors			
Contact	#3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contribution	#3b	Describe contributions of protocol authors and identify the guarantor of the review	10

Amendments			
	#4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	5
Support			
Sources	#5a	Indicate sources of financial or other support for the review	10
Sponsor	#5b	Provide name for the review funder and / or sponsor	10
Role of sponsor or funder	#5c	Describe roles of funder(s), sponsor(s), and / or institution(s), if any, in developing the protocol	10
Introduction			
Rationale	#6	Describe the rationale for the review in the context of what is already known	2, 3, 4
Objectives	#7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	4, 5
Methods			
Eligibility criteria	#8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	5, 6
Information sources	#9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	6
Search strategy	#10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	6, 7
Study records - data management	#11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	7
Study records - selection process	#11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	7
Study records - data	#11c	Describe planned method of extracting data from reports (such as	7

collection process		piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	
Data items	#12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	7
Outcomes and prioritization	#13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	5, 6, 7
Risk of bias in individual studies	#14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	7, 8
Data synthesis	#15a	Describe criteria under which study data will be quantitatively synthesised	n/a
Data synthesis	#15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I ² , Kendall's τ)	n/a
Data synthesis	#15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	8
Data synthesis	#15d	If quantitative synthesis is not appropriate, describe the type of summary planned	8
Meta-bias(es)	#16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	9
Confidence in cumulative evidence	#17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	n/a

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BMJ Open

Association of cultural origin and migration status with work-related mental health of migrants and refugees in Europe – A systematic review protocol

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Association of cultural origin and migration status with work-related mental health of migrants and refugees in Europe – A systematic review protocol

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Migrants – Refugees – Work – Work-related conditions – Mental Health – Systematic review

ABSTRACT

Introduction Migrants make up a significant proportion of the European working population. Previous studies have already shown that migrants and refugees often suffer from poor work-related conditions in the host country, which might have an impact on mental health. Thus, the main objective of this systematic review is to analyze and summarize existing research on work-related conditions of migrants and refugees in Europe and to investigate the relationship of these conditions with their mental health.

Methods and analysis Three electronic databases (PubMed/MEDLINE, PsycINFO and CINAHL) will be systematically searched for eligible articles using quantitative study designs (randomized controlled trials, cohort, case-control and cross-sectional studies with and without control groups) written in English, German, French, Italian, Polish, Spanish or Turkish and published from January, 1, 2016, onwards. The primary health outcomes will be diagnosed psychiatric and psychological disorders, suicide and suicide attempts, psychiatric and psychological symptoms, and perceived distress. The secondary health outcomes will be more general concepts of mental health such as well-being, life satisfaction and quality of life. Outcome measures must have been assessed by validated questionnaires. Screening of all articles, reference lists of included studies and relevant reviews as well as data extraction will be performed independently by two review authors. Methodological quality of primary studies will be assessed and discussed. The results of the primary studies will be summarized descriptively. Migrants and natives, migrants and refugees, migrants of different cultural backgrounds and migrants living in different host countries will be compared in terms of the association between their work-related conditions and their mental health.

Ethics and dissemination This systematic review is excluded from ethical approval because it will use previously approved published data from primary studies. The results of this review will be submitted to a related peer-reviewed journal.

Trial registration number: CRD4202124484

Strengths and limitations of the study:

- This systematic review about the association of work-related conditions and mental health of migrants and refugees in Europe will be based on a detailed search strategy including studies from European countries published in the last five years in seven European languages.
- Screening of articles as well as data extraction and methodological quality assessment using an appropriate validated tool will be performed independently by two review authors to minimize the probability of personal biases.
- Due to time and language limitations, not all relevant studies might be found.
- The heterogeneity of self-report measures of mental health and work-related conditions complicates the direct comparability of primary studies.

INTRODUCTION

In recent years, there has been a substantial increase in global migration. In 2019, 272 million people migrated worldwide. One year later, among those migrating internationally, 25.9 million represented as refugees and asylum seekers.¹ According to The United Nations Recommendations on Statistics of International Migration, an “international migrant” is defined as a person who has changed his or her country of residence.² These individuals emigrate internationally for reasons such as work, family, or study, whereas individuals who had to leave their homes due to conflict, persecution, or catastrophes are referred to as refugees. Persons who have not yet been granted official refugee status are defined as asylum seekers.³ With the main migration destinations being high-income countries,⁴ Europe represents one of the regions with the highest number of migrants. Almost every third migrant

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worldwide lives in Europe. Approximately 11% of the population in European countries can be considered migrants.¹ Some countries in Europe even have a significantly higher percentage of migrants in their society. Switzerland leads with 29.9% of migrants, followed by Sweden with 20%, Austria with 19.9% and Belgium with 17.2%.⁵ A closer look at the countries of origin of migrants and refugees/asylum seekers reveals a very heterogeneous picture. While migration from one European country to another can be described as the largest migration corridor worldwide, 2019 also saw large inflows of migrants from Northern and Western Africa, Central and Southern Asia, Latin America and the Caribbean and Sub-Saharan Africa.¹ All those migrants make up a not insignificant part of the working population in Europe.⁴ Several studies have already shown that migrants and refugees/asylum seekers are considered a particularly vulnerable group in terms of mental health in European host countries. Migrants reported higher levels of PTSD⁶ as well as lower general and mental health⁷ compared to natives. Among refugees and asylum seekers, a similar phenomenon emerged. Studies indicated higher prevalence rates of mental symptoms (PTSD and depression) among refugees and asylum seekers than natives.^{6,8,9} Due to their high mental distress, vocational factors prevalent in the host country that could have an impact on the mental health of migrants and refugees/asylum seekers in Europe should be detected.

Various studies have already examined the working conditions that migrants are confronted with in their host country worldwide. These studies have often revealed disadvantages in labor market integration such as difficulties in finding a job which ultimately leads to higher unemployment rates for migrants.¹⁰ Moreover, it became clear that migrants often suffer from worse working conditions than their autochthonous counterparts. For example, they are often hired in jobs that are considered low-skilled⁷ and compensated with a low income.¹¹ Furthermore, they are more likely to be exposed to various health hazards in the workplace, such as pesticides and chemicals, and show increased potential for injury.¹¹⁻¹⁴ Migrants from low- and middle-income countries seem to be particularly vulnerable.¹⁵ Further, migrant workers are more likely to experience exploitation and abuse,¹¹ as well as physical, psychological, and sexual violence,¹² with women being at particular risk.¹¹ These negative working conditions affect both the physical and mental health of migrants.^{12,15} In terms of mental well-being, mental health disadvantages such as psychotic, neurotic, and mood disorders were identified.¹² Other studies, however, found no meaningful difference in working conditions between migrant and autochthonous workers.¹⁶ Due to the inconsistent findings, it is of upmost importance to look more deeply into work-related conditions of migrants and refugees/asylum seekers.

The already mentioned very heterogeneous regions of origin of migrants and refugees/asylum seekers in Europe represent countries of very different cultural backgrounds, all of which converge in the destination region. These cultural differences might lead to difficulties in living together in a common destination country. One of the most relevant classifications of cultural backgrounds is offered by Hofstede's categorization of collectivist societies and individualist societies. Individualistic cultures are characterized by relatively loose ties between individuals, whereas in collectivistic cultures life tends to take place in strong, cohesive in-groups.¹⁷ Individualism is more prevalent in Western and developing countries, while collectivism is more common in less developed and Eastern countries.¹⁸ However, cultural origin not only has an influence on life in society, but also on working life. For example, an experimental study by Earley¹⁹ showed that collectivist subjects performed best when they worked in a group and anonymously, while they performed weakest when they worked alone and their performance was traceable. Subjects with individualistic backgrounds, however, performed best when they worked alone and their performance was traceable. Their performance was very weak when working in a group and when their performance was not comprehensible.¹⁹ Furthermore, differences in the quality and level of education in non-European countries in contrast to European countries^{20,21} might influence the chances to receive a desirable employment in the host country. Accordingly, professional training from a non-European country might lead to worse work-related

conditions. Additionally, research has already shown that diverse cultural backgrounds can function as a risk factor for developing mental health burdens. For example, studies comparing respondents with more individualistic cultural backgrounds with respondents originating from more collectivistic societies showed that individuals from individualistic countries experienced more mental complaints.²² Furthermore, there is general consensus among researchers that persons from different cultures show different preferences of certain psychological symptoms and disorders. Individuals from traditional collectivist societies, who favor social harmony as well as traditions and emotional dependence on society, are more likely to exhibit somatic symptoms instead of disorders such as depression and PTSD.²²⁻²⁴ This justifies the question whether cultural differences can also lead to differences in emotional satisfaction at work. These cultural differences due to origin highlight the different needs and statuses of people of different cultural origins that have to be addressed in preventing the development of mental health problems among migrant workers in Europe. In conclusion, we will shed more light on differences in work-related conditions and their relationship with mental health among migrants and refugees/asylum seekers of different cultural backgrounds.

In terms of distinguishing people of different cultural backgrounds, the question also arises about the extent to which migrant and refugee/asylum seeker workers differ in terms of work-related conditions and their relationship to mental health as the population of refugees/asylum seekers represents a special group of migrants. Refugees and asylum seekers can be seen as a specific migrant group because, by definition, they have different pre- and post-migratory conditions²⁵ than general migrants due to the sometimes traumatic refugee experience²⁶ itself and the subsequent asylum process,²⁷ making them differently vulnerable to mental health problems.²⁵⁻²⁷ In line with this, various previous studies have shown that refugees suffer significantly more often from mental illnesses such as depression, anxiety and post-traumatic stress disorder than voluntarily migrated labor migrants.²⁸ Due to the greater psychological strain on refugees and asylum seekers, it is reasonable to assume that this particular subgroup could suffer particularly from poor working conditions. However, the mental burden of refugees/asylum seekers due to their working conditions has rarely been studied. Nevertheless, the findings show that differences exist between migrants and refugees in labor market outcomes. Refugees are characterized by their disadvantages in the work context in comparison to autochthones and other migrant groups.²⁹ For example, Jamil et al. showed that refugees were twice more often affected by unemployment than migrants in general.³⁰ This shows that migrants and refugees/asylum seekers hold different positions in the labor market. Accordingly, migrants and refugees/asylum seekers must be considered separately with regard to their working conditions and their influences on mental health. There should be a targeted search for differences between subgroups in order to specifically uncover potential grievances in terms of working conditions and take action against them. The only way to ensure successful assistance to maintain or improve the mental health of migrants and refugees/asylum seekers is to adapt it to the needs of these subgroups.

Whereas the member states of the European Union have generally taken a similar direction with regard to migration and integration policy,³¹ they clearly differ from other Western countries such as the so-called classic immigration countries USA, Canada and Australia.³² Although some research groups have already engaged in the study of work-related conditions and their influence on the mental well-being of migrants worldwide, to our knowledge, no systematic review exists in this area with a specific European focus. Thus, there is a need to better understand and systematically evaluate the association of work-related conditions on the mental health of migrants and refugees/asylum seekers in Europe. For this reason, this systematic review will focus only on European countries. Despite the fact that there has been a common tightening of integration and immigration policies within all member states of the European Union, European countries partially differ in terms of migration policies, depending on the influence of heterogeneous migration histories. France, Germany, Austria and Belgium, for example, count as "traditional migration countries", whereas Italy, Greece and the

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Czech Republic have experienced greater immigration flows only since the 1990s. These differences could have an impact on the working lives of migrants and refugees/asylum seekers in the country of residence.³¹ Due to the potential differences in the immigration policies of the individual EU-member states and since it can be assumed that non-member states in Europe may have developed even more independently with regard to their migration policies, it is of interest to also compare working conditions of migrants and refugees/asylum seekers and their influence on mental health between the individual European host countries.

Increased migration to Europe, as well as the facts that migrants and refugees are considered a population group being at particular risk of mental burden and make up a non-negligible portion of the workforce in Europe, highlight the importance of more in-depth research on work-related conditions and their influence on the mental health of migrants and refugees/asylum seekers in Europe with special consideration to their cultural backgrounds and migration status (voluntarily migrated migrants vs. involuntarily migrated refugees and asylum seekers). This is necessary to detect and actively address potential abuses in the working context in order to maintain and, if necessary, restore the mental health of migrants and refugees/asylum seekers.

OBJECTIVES

The main objective of our planned systematic review is to analyze and summarize the a) association between work-related conditions and mental health of migrants and refugees and asylum seekers (both summarized as “refugees” in the following) in Europe.

To broaden understanding of this association we will further b) describe the kinds of work-related conditions of migrants and refugees in Europe and c) compare them to autochthonous workers. Furthermore, we will examine d) if migration experience (migrants/refugees vs. natives) influences the association of work-related conditions and mental health and e) if migration status (migrants vs. refugees) influences the association between work-related conditions and mental health. Additionally, we will f) compare migrants and refugees of different cultural backgrounds in Europe in terms of the association between work-related conditions and mental health and g) compare migrants and refugees living in different host countries.

METHODS AND ANALYSIS

The content and structure of this study protocol is developed in accordance with the reporting guidance “Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols (PRISMA-P) statement”.³³ It was registered on March 24, 2021 within the International Prospective Register of Systematic Reviews (PROSPERO) (registration number: CRD42021244840). Significant protocol amendments will be announced with the publication of the systematic review.

Eligibility criteria

The eligibility criteria of the included studies will be described based on the Population, Exposure, Comparator, and Outcome (PECO) framework.

Types of population

We will include studies of internationally migrated first-generation migrants, refugees and asylum seekers of working age (15-70 years). Participants must be currently working and residing in an European country. We will explicitly exclude studies of internal migrants or refugees, second-

generation migrants or refugees, migrants and refugees younger than 15 or older than 70 years, not currently working (which includes students and apprentices) and not living in European countries. Migrants in irregular migration situations and migrants who are informally employed are also included. If clear information regarding inclusion criteria is missing, the corresponding authors will be contacted. Studies that do not separate working age from non-working age participants will be excluded.

Types of exposure

We will include original studies of the association of any work-related conditions with the mental health of migrants and refugees in Europe. Work-related conditions include “organizational conditions” (income level, formality of work, work contract, weekly working hours, shift work, overqualification, ...), “social conditions at work” (discrimination, prejudice, violence, leadership perceptions, sense of community, ...) or special issues such as “post-migration stressors migrants and refugees in Europe are confronted with at the workplace”³⁴ (language barriers, perceived discrimination in daily life, cultural differences, ...).

Types of comparators

A comparison/control group is not obligatory. We will include studies comparing a) migrant/refugee workers with autochthonous workers, b) migrant workers with refugee workers, c) migrant worker groups of different cultural origins, d) migrant or refugee workers living and working in diverse European host countries and e) burdened with unburdened workers regarding their work-related conditions and mental health outcomes. Furthermore, studies might also compare workers with different characteristics of work-related conditions in relation to their mental health.

Types of outcomes

The primary outcomes of interest are psychiatric and psychological symptoms, perceived distress, diagnosed psychiatric and psychological disorders or suicide or attempted suicide. The secondary mental health outcomes are indicators of well-being such as quality of life and life satisfaction. The primary outcomes will be categorized as follows: Cluster A: psychological and psychiatric diagnoses (including suicide and suicide attempts), Cluster B: psychological and psychiatric symptoms (such as anxiety, depression, PTSD, somatoform disorders) and Cluster C: general distress. The secondary outcomes will be classified as Cluster D: more general related constructs to mental health (well-being, quality of life, life satisfaction). If needed, there will be the additional cluster E, which includes all outcomes that cannot be assigned to clusters A-D. Only studies examining at least one migrants’ or refugees’ mental health outcome with a validated measure will be included. Translated measurements in order to quantify migrant or refugee workers’ mental health must have been at least validated in the original language.

Study design

We will include quantitative studies such as randomized controlled trials, cohort studies, case-control studies and cross-sectional studies with and without control groups. We will explicitly exclude qualitative studies and case studies. Reviews will be screened for relevant references before exclusion. Studies focusing on migrants’ and refugees’ work-related conditions only as well as studies focusing on migrants’ and refugees’ mental health only, without any consideration to the association between work-related conditions and mental health outcomes, will be excluded.

Setting and time frame

No restrictions by the type of setting will be used. Studies published between January 1, 2016 and March 16, 2021 will be included.

Language

Studies written in English, German, French, Italian, Polish, Spanish and Turkish will be included.

Publication status

Studies published in peer-reviewed journals will be included. Unpublished studies as well as editorials, letters, “grey literature” such as conference abstracts, dissertations and non-peer review articles will be excluded. Only full-text versions of relevant studies (assessed by using the “Strengthening the Reporting of Observational Studies in Epidemiology (STROBE-) Statement”³⁵) will be considered.

Information sources

The three most relevant electronic databases for this research area (PubMed/Medline, PsycINFO and CINAHL) will be systematically searched for relevant literature. Additionally, the reference lists of included studies and relevant reviews will be searched. A contact of authors of primary studies is not planned.

Search strategy

The search terms and syntax include combinations of MeSH Terms, where applicable, and title/abstract text terms based on the eligibility criteria. According to the eligibility criteria the strategy includes three search term clusters: 1) terms related to the study population such as “migrant*” or “refugee*”, 2) terms related to work-related conditions such as “employ*” or “work*”, and 3) terms related to mental health outcomes such as “mental disorder*” or “well-being”.

In the following, an exemplary search syntax is shown based on the search in PubMed: (("transients and migrants"[MeSH Terms] OR "emigrants and immigrants"[MeSH Terms] OR "refugees"[MeSH Terms] OR "ethnic groups"[MeSH Terms] OR "minority groups"[MeSH Terms] OR "human migration"[MeSH Terms] OR "migra*"[Title/Abstract] OR "emigra*"[Title/Abstract] OR "immigra*"[Title/Abstract] OR "refugee*"[Title/Abstract] OR "asylum seeker*"[Title/Abstract] OR "foreign*"[Title/Abstract] OR "resettl*"[Title/Abstract] OR "guest worker*"[Title/Abstract] OR "displaced person*"[Title/Abstract]) AND ("employment"[MeSH Terms] OR "work"[MeSH Terms] OR "occupations"[MeSH Terms] OR "employ*"[Title/Abstract] OR "work*"[Title/Abstract] OR "occupation*"[Title/Abstract] OR "vocation*"[Title/Abstract] OR "jobs"[Title/Abstract] OR "job"[Title/Abstract]) AND ("mental health"[MeSH Terms] OR "mental disorders"[MeSH Terms] OR "stress, psychological"[MeSH Terms] OR "mental fatigue"[MeSH Terms] OR "depressive disorder"[MeSH Terms] OR "depression"[MeSH Terms]) OR "quality of life"[MeSH Terms] OR "well-being"[Title/Abstract] OR "wellbeing"[Title/Abstract] OR "quality of life"[Title/Abstract] OR "life satisfaction"[Title/Abstract] OR "mental*"[Title/Abstract] OR "psychiatric*"[Title/Abstract] OR "psychological*"[Title/Abstract] OR "anxi*"[Title/Abstract] OR "depress*"[Title/Abstract] OR "burnout"[Title/Abstract] OR "burn-out"[Title/Abstract] OR "somatization"[Title/Abstract] OR "somatisation"[Title/Abstract] OR "somatoform"[Title/Abstract] OR "pain disorder"[Title/Abstract] OR "somatic symptom disorder"[Title/Abstract] OR "suicid*"[Title/Abstract] OR "insomnia"[Title/Abstract] OR "emotional stress"[Title/Abstract] OR "distress"[Title/Abstract])) NOT ("USA"[Title/Abstract] OR "United States"[Title/Abstract] OR "Canada"[Title/Abstract] OR "Australia"[Title/Abstract] OR "migraine"[Title/Abstract] OR "cancer"[Title/Abstract] OR "qualitative stud*"[Title/Abstract]) Filters: English, French, German, Italian, Polish, Spanish, Turkish, from 2016/1/1 - 2021/3/31. The exact search strategies for the other two electronic databases can be found in Supplement 1.

Study records

Data management

EndNote X9³⁶ and an Excel spreadsheet will be used for data management.

Data collection, selection process, and extraction

After identification and exclusion of duplicates two review authors will independently screen the titles and abstracts of the publications based on the inclusion and exclusion criteria. The full texts of the relevant articles will then independently be assessed by the two reviewers to decide whether they meet the inclusion criteria. The reference lists of review articles and the included publications will be scanned for relevant articles missed in the initial search. Any disagreements will be discussed between the two reviewers and if an agreement cannot be reached a third/fourth reviewer will be consulted. A PRISMA flow chart³³ showing details of studies included and excluded at each stage of the study selection process will be provided.

Data items

From each included study the two review authors will independently extract data on the following variables:

- Study characteristics: study authors, publication year, study design, country
- Population characteristics: sample size with gender distribution, information about the existence of a control group and the type of group(s) (migrant workers vs. native workers, migrant workers vs. refugee workers, workers of different cultural origins) and size of group(s), migrants' and refugees' countries of origin
- Exposure: kinds of work-related conditions and measurement instrument, if available
- Outcome: primary and secondary mental health indices and measurement instrument
- Main results of the study

In case of disagreement between the two authors, a third/fourth reviewer will be consulted.

Risk of bias in individual studies

The two review authors will independently evaluate the quality of research papers using the "Newcastle Ottawa Quality Assessment Scale" (NOS)³⁷ for cohort studies, case-control studies and cross-sectional studies. Finally, each study will receive a score for low (0-3 points), moderate (4-6), or high quality (7-9). In the case of relevant randomized controlled trials the revised "Cochrane risk-of-bias tool" (RoB 2)³⁸ will be used. Disagreements will be first discussed between the two reviewers. If agreement will not be reached, a third/fourth reviewer will be consulted.

Additionally, the validity of the used mental health measure will be assessed by stating whether a validated questionnaire was used in the original language or whether only the translation of such a measure or a validated or a cultural adapted version was used.

Data analysis and synthesis

One review author will carry out a narrative (descriptive) synthesis of the included studies following the PRISMA checklist³³ (see above). No formal quantitative analysis will be conducted. As part of the synthesis the quality assessment will be discussed, thereby studies of poor quality will be identified. Their potential impact on the overall results will be discussed. Based on the synthesis, the extent to which work-related conditions differ between workers of different origins in Europe and the extent to which they affect mental health will be shown. In addition, recommendations will be presented on how to improve work-related conditions for the vulnerable group of migrants and refugees in Europe to guarantee their psychological well-being and their working capability.

If relevant studies focusing on subgroups will be found, comparisons will descriptively be conducted. If possible, we will compare migrants' and refugees' work-related conditions with natives' work-related conditions as well as their impact on the mental health of both subgroups. Furthermore, we will present differences or similarities of work-related conditions and their impact on mental health between migrants and refugees, if possible. Additionally, we will report differences or similarities of work-related conditions and their impact on mental health between migrant/refugee workers of different cultural origins by categorizing their countries of origins according to the theory of collectivism and individualism by Hofstede.¹⁷ Finally, due to differences in migration and integration laws between European countries,³¹ the working conditions and their impact on the mental health of migrants and refugees living and working in different European host countries will be compared.

Ethics and dissemination

This systematic review will be submitted to a leading journal in this field.

DISCUSSION

This systematic review will provide in-depth insight into the relationship between work-related conditions and their influence on the mental health of migrants and refugees in Europe. Taking into account current quantitative research, this systematic review will address the following research questions: It will provide information a) on the types of work-related conditions migrants and refugees face in the labor market in Europe, and the extent to which these conditions impact mental health. Furthermore, it will be shown b) whether migrants and refugees work under different work-related conditions than autochthonous workers, and c) to what extent migrants and refugees differ compared to natives regarding the relationship between work-related conditions and mental health. In addition, the study will examine d) whether migrants and refugees e) as well as migrants and refugees of different cultural backgrounds differ in terms of the relationship between work-related conditions and mental health. Lastly, f) migrants and refugees living in different European host countries will be compared in terms of the association between their working conditions and mental health.

Some sources of bias risk can be identified in advance. Since "gray literature" will be explicitly excluded, publication bias cannot be prevented.³⁹ However, "gray literature", especially conference papers, often do not provide precise details to be useful for screening relevant research,⁴⁰ thus not too much methodological loss is to be expected here.

Furthermore, the exclusion of primary studies published before 2016 could introduce the problem of not finding important studies published in the years before. However, since there was a huge growth of asylum seekers migrating to Europe since 2014 (but more so in 2015 and 2016),⁴¹ we decided to limit the inclusion of relevant studies to this period. That is, because from 2016 onwards the direct impact of refugee movements on the labor market can be captured and thus the scientific data reflect the current situation.

Since we cannot include all primary studies regardless of language, the problem might arise that not all relevant studies may be found. However, since we have the ability to include studies in seven different languages, we cover a wide range of relevant primary studies, especially since our language skills coincide with common languages in the European region and it can be assumed that relevant studies might be published mainly in these languages.

When looking at the methods of measurement for mental health, it is apparent that large variety of constructs as well as methods will be incorporated. These include self-reported measures of both psycho-psychiatric symptoms or medical diagnoses and more general constructs such as well-being or

quality of life or, in some circumstances, suicide rates or attempted suicide. However, by explicitly excluding non-validated measurement instruments to assess mental health, health outcomes can be compared quite well. Nevertheless, it must be noted that self-reported measures should always be viewed critically due to bias susceptibility because of social desirability or specific response tendencies of the participant.⁴² With regard to work-related conditions, however, it must be noted that no validated measures must have been used in the primary studies. This complicates the comparability of the data. However, since our aim is also to report descriptively on work-related conditions, the high variety of different work-related conditions due to the very different assessments should be seen as an advantage rather than a disadvantage.

The connection between stress at work and mental health has been perceived very clearly in recent years.⁷ Workplace-related stress and mental disorders resulting hereof lead to many days of absence from work in Western countries.⁴³ Measures should be developed to improve conditions at the workplace and thus minimize the causes for mental disorders, or to offer low-threshold psychotherapies directly at the workplace. Therefore, it is of utmost importance to be informed about the specific conditions and distress of immigrants in the workplace as migrants and refugees make up a not insignificant part of the working population in European society.⁴ This systematic review will increase our insights in this context and thereby also contribute to the optimization of conditions at the workplace and mental health.

To our knowledge this planned systematic review will be the first to examine work-related conditions and mental health of migrants and refugees, comparing both population groups while additionally considering cultural backgrounds and paying special attention to the health care sector.

Author contributions

YE conceived the initial idea for the review. RH, FW, AK, EM and YE designed the review. SU participated in study design. AV provided expert input on theoretical considerations. RH drafted the manuscript. All the authors contributed to the revision of the manuscript and approved the final version. RH is the guarantor of the systematic review.

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Competing interests

None declared.

Patient and public involvement

No patient involved.

REFERENCES

1. United Nations DoEaSA, Population Division. International Migrant Stock 2019 (United Nations database) 2019 [Available from:

- https://www.un.org/en/development/desa/population/migration/data/estimates2/estimate_s19.asp accessed 2021/03/22.
2. United Nations DoEasA. Recommendations on statistics of international migration: Revision 1. 1998
 3. McAuliffe M, Bauloz C, Nguyen M, et al. Migration and migrants: A global overview. In: McAuliffe M, Khadria B, eds. World Migration Report 2020. Geneva, Switzerland: International Organization for Migration 2019.
 4. McAuliffe M, Khadria B. Report Overview: Providing perspective on migration and mobility in increasingly uncertain times. In: Gibson M, ed. World Migration Report. Geneva, Switzerland: International Organization for Migration 2019.
 5. McAuliffe M, Kitimbo A, Abel G, et al. Migration and migrants: Regional dimensions and developments. In: Gibson M, ed. World Migration Report 2020. Geneva, Switzerland: International Organization for Migration 2019:53-124.
 6. Close C, Kouvonen A, Bosqui T, et al. The mental health and wellbeing of first generation migrants: a systematic-narrative review of reviews. *Global Health* 2016;12(1):47. doi: 10.1186/s12992-016-0187-3 [published Online First: 2016/08/26]
 7. Arici C, Ronda-Perez E, Tamhid T, et al. Occupational Health and Safety of Immigrant Workers in Italy and Spain: A Scoping Review. *Int J Environ Res Public Health* 2019;16(22) doi: 10.3390/ijerph16224416 [published Online First: 2019/11/14]
 8. Blackmore R, Boyle JA, Fazel M, et al. The prevalence of mental illness in refugees and asylum seekers: A systematic review and meta-analysis. *PLoS Med* 2020;17(9):e1003337. doi: 10.1371/journal.pmed.1003337 [published Online First: 2020/09/22]
 9. Giacco D, Priebe S. Mental health care for adult refugees in high-income countries. *Epidemiol Psychiatr Sci* 2018;27(2):109-16. doi: 10.1017/S2045796017000609 [published Online First: 2017/10/27]
 10. Uhlenhorff A, Zimmermann KF. Unemployment dynamics among migrants and natives. *Economica* 2014;81:348-67. doi: 10.1111/ecca12077
 11. Moyce SC, Schenker M. Migrant Workers and Their Occupational Health and Safety. *Annu Rev Public Health* 2018;39:351-65. doi: 10.1146/annurev-publhealth-040617-013714 [published Online First: 2018/02/06]
 12. Malhotra R, Arambepola C, Tarun S, et al. Health issues of female foreign domestic workers: a systematic review of the scientific and gray literature. *International Journal of Occupational and Environmental Health* 2013;19(4):261-77. doi: 10.1179/2049396713Y.0000000041
 13. Orrenius PM, Zavadny M. Do immigrants work in riskier jobs? *Demography* 2009;46(3):535-51.
 14. Yanar B, Kosny A, Smith PM. Occupational Health and Safety Vulnerability of Recent Immigrants and Refugees. *Int J Environ Res Public Health* 2018;15(9) doi: 10.3390/ijerph15092004 [published Online First: 2018/09/19]
 15. Hargreaves S, Rustage K, Nellums LB, et al. Occupational health outcomes among international migrant workers: a systematic review and meta-analysis. *Lancet Glob Health* 2019;7(7):e872-e82. doi: 10.1016/S2214-109X(19)30204-9 [published Online First: 2019/05/28]
 16. Sterud T, Tynes T, Mehlum IS, et al. A systematic review of working conditions and occupational health among immigrants in Europe and Canada. *BMC Public Health* 2018;18(1):770. doi: 10.1186/s12889-018-5703-3 [published Online First: 2018/06/22]
 17. Hofstede G. Dimensionalizing Cultures: The Hofstede Model in context. *Online Readings in Psychology and Culture* 2011;2(1):1-26.
 18. Hofstede G, Hofstede GJ, Minkov M. Cultures and organizations - Software of the mind, 3rd edition. United States: The McGraw-Hill Professional 2010:1-576.
 19. Early PC. Social loafing and collectivism: A comparison of the United States and the People's Republic of China. *Administrative Science Quarterly* 1989;34(4):565-81.
 20. Helgesson M, Wang M, Niederkrotenthaler T, et al. Labour market marginalisation among refugees from different countries of birth: a prospective cohort study on refugees to Sweden. *J Epidemiol Community Health* 2019;73(5):407-15. doi: 10.1136/jech-2018-211177 [published Online First: 2019/02/14]

21. Ronda-Perez E, Martinez JM, Reid A, et al. Longer Residence of Ecuadorian and Colombian Migrant Workers in Spain Associated with New Episodes of Common Mental Disorders. *Int J Environ Res Public Health* 2019;16(11) doi: 10.3390/ijerph16112027 [published Online First: 2019/06/09]
22. Schubert CC, Punamäki R-L. Mental health among torture survivors: Cultural background, refugee status and gender. *Nordic Journal of Psychiatry* 2011;65(3):175-82. doi: 10.3109/08039488.2010.514943
23. Wittig U, Lindert J, Merbach M, et al. Mental health of patients from different cultures in Germany. *Eur Psychiatry* 2008;23 Suppl 1:28-35. doi: 10.1016/S0924-9338(08)70059-2 [published Online First: 2008/04/12]
24. Moisander PA, Edston E. Torture and its sequel--a comparison between victims from six countries. *Forensic Sci Int* 2003;137(2-3):133-40. doi: 10.1016/j.forsciint.2003.07.008 [published Online First: 2003/11/12]
25. Porter M, Haslam N. Predisplacement and postdisplacement factors associated with mental health of refugees and internally displaced persons: a meta-analysis. *JAMA* 2005;294(5):602-12. doi: 10.1001/jama.294.5.602 [published Online First: 2005/08/04]
26. Heeren M, Wittmann L, Ehler U, et al. Psychopathology and resident status - comparing asylum seekers, refugees, illegal migrants, labor migrants, and residents. *Compr Psychiatry* 2014;55(4):818-25. doi: 10.1016/j.comppsy.2014.02.003 [published Online First: 2014/03/19]
27. Laban CJ, Gernaat HB, Komproe IH, et al. Impact of a long asylum procedure on the prevalence of psychiatric disorders in Iraqi asylum seekers in The Netherlands. *J Nerv Ment Dis* 2004;192(12):843-51. doi: 10.1097/01.nmd.0000146739.26187.15 [published Online First: 2004/12/08]
28. Lindert J, Brahler E, Wittig U, et al. Depressivität, Angst und posttraumatische Belastungsstörung bei Arbeitsmigranten, Asylbewerbern und Flüchtlingen. Systematische Übersichtsarbeit zu Originalstudien. *Psychother Psychosom Med Psychol* 2008;58(3-4):109-22. doi: 10.1055/s-2008-1067358 [published Online First: 2008/04/19]
29. Martín I, Arcarons A, Aumüller J, et al. From refugees to workers: Mapping labour market integration support measures for asylum-seekers and refugees in EU member states. Gütersloh, Germany: Bertelsmann Stiftung 2016:1-176.
30. Jamil H, Kanno SS, Abo-Shasha R, et al. Promoters and barriers to work: a comparative study of refugees versus immigrants in the United States. *New Iraqi J Med* 2012;8(2):19-28. [published Online First: 2012/01/01]
31. Göbel B. In Vielfalt verbunden - Zusammenfassende Beobachtungen zur Integrationspolitik in Europa. Integrationskontinent Europa - Integration von Zuwanderern im europäischen Vergleich. Berlin, Germany: Konrad-Adenauer-Stiftung e.V. 2019.
32. Hoesch K. Migration und Integration in internationaler Perspektive. Migration und Integration - Eine Einführung. Münster, Deutschland: Springer VS 2018:126-215.
33. Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *J Clin Epidemiol* 2009;62(10):1006-12. doi: 10.1016/j.jclinepi.2009.06.005 [published Online First: 2009/07/28]
34. Carlsson J, Sonne C. Mental health, pre-migratory trauma and post-migratory stressors among adult refugees. In: Nexhmedin M, Nickerson A, eds. Mental health of refugee and conflict-affected populations - Theory, research and clinical practice. Switzerland: Springer Nature 2018:15-35.
35. von Elm E, Altman DG, Egger M, et al. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: Guidelines for reporting observational studies. *International Journal of Surgery* 2007;12(12):1495-99. doi: 10.1016/j.ijsu.2014.07.013
36. EndNote [program]. EndNote X9 version. Philadelphia, PA: Clarivate, 2013.
37. Wells G, Shea B, O'Connell D, et al. The Newcastle-Ottawa Scale (NOS) for assessing the quality of nonrandomised studies in meta-analyses 2000 [Available from: http://www.ohri.ca/programs/clinical_epidemiology/oxford.asp accessed 2021/03/23].

38. Sterne JAC, Savovic J, Page MJ, et al. RoB 2: a revised tool for assessing risk of bias in randomised trials. *BMJ* 2019;366:l4898. doi: 10.1136/bmj.l4898 [published Online First: 2019/08/30]

39. Scherer RW, Langenberg P, von Elm E. Full publication of results initially presented in abstracts. *Cochrane Database Syst Rev* 2007(2):MR000005. doi: 10.1002/14651858.MR000005.pub3 [published Online First: 2007/04/20]

40. O'Connor AM, Anderson KM, Goodell CK, et al. Conducting systematic reviews of intervention questions I: Writing the review protocol, formulating the question and searching the literature. *Zoonoses and Public Health* 2014;61(1):28-38. doi: 10.1111/zph.12125

41. Grote J. Die veränderte Fluchtmigration in den Jahren 2014 bis 2016: Reaktionen und Maßnahmen in Deutschland; Fokusstudie der deutschen nationalen Kontaktstelle für das Europäische Migrationsnetzwerk (EMN). Nürnberg, Germany: Bundesamt für Migration und Flüchtlinge (BAMF) 2018.

42. Furnham A, Henderson M. The good, the bad and the mad: Response bias in self-report measures. *Personality and Individual Differences* 1982;3(3):311-20. doi: 10.1016/0191-8869(82)90051-4

43. Hansen H-T, Holmas TH, Islam MK, et al. Sickness absence among immigrants in Norway: Does occupational disparity matter? *European Sociological Review* 2014;30(1):1-12. doi: 10.1093/esr/jct007

SUPPLEMENT 1

Exact search strategies of PsycINFO and CINAHL, 15/03/2021

PsycINFO via EBSCOhost:

(TI emigra* OR TI immigra* OR TI refugee* OR TI "asylum seeker*" OR TI foreign* OR TI resettl* OR TI "guest worker*" OR TI "displaced person*" OR AB migra* OR AB emigra* OR AB immigra* OR AB refugee* OR AB "asylum seeker*" OR AB foreign* OR AB resettl* OR AB "guest worker*" OR AB "displaced person*") AND (TI employ* OR TI work* OR TI occupation* OR TI vocation* OR TI jobs OR TI job OR AB employ* OR AB work* OR AB occupation* OR AB vocation* OR AB jobs OR AB job) AND (TI "mental health" OR TI "psychosocial health" OR TI "mental disorder*" OR TI "psychosocial disorder*" OR TI distress OR TI "emotional stress" OR TI "well-being" OR TI wellbeing OR TI "quality of life" OR TI "life satisfaction" OR AB "mental health" OR AB "psychosocial health" OR AB "mental disorder*" OR AB "psychosocial disorder*" OR AB distress OR AB "emotional stress" OR AB "well-being" OR AB wellbeing OR AB "quality of life" OR AB "life satisfaction") NOT (TI USA OR TI "United States" OR TI Canada OR TI Australia OR TI migraine OR TI cancer OR TI "qualitative stud*" OR AB USA OR AB "United States" OR AB Canada OR AB Australia OR AB migraine OR AB cancer OR AB "qualitative stud*") Limiters - Publication Year: 2016-2021 Expanders - Apply equivalent subjects Narrow by Language: - turkish Narrow by Language: - french Narrow by Language: - italian Narrow by Language: - spanish; castilian Narrow by Language: - german Narrow by Language: - english Search modes - Boolean/Phrase

CINAHL via EBSCOhost:

(TI migra* OR TI emigra* OR TI immigra* OR TI refugee* OR TI "asylum seeker*" OR TI foreign* OR TI resettl* OR TI "guest worker*" OR TI "displaced person*" OR AB migra* OR AB emigra* OR AB immigra* OR AB refugee* OR AB "asylum seeker*" OR AB foreign* OR AB resettl* OR AB "guest worker*" OR AB "displaced person*") AND (TI employ* OR TI work* OR TI occupation* OR TI vocation* OR TI jobs OR TI job OR AB employ* OR AB work* OR AB occupation* OR AB vocation* OR AB jobs OR AB job) AND (TI "mental health" OR TI "psychosocial health" OR TI "mental disorder*" OR TI "psychosocial disorder*" OR TI distress OR TI "emotional stress" OR TI "well-being" OR TI wellbeing OR TI "quality of life" OR TI "life satisfaction" OR AB "mental health" OR AB "psychosocial health" OR AB "mental disorder*" OR AB "psychosocial disorder*" OR AB distress OR AB "emotional stress" OR AB "well-being" OR AB wellbeing OR AB "quality of life" OR AB "life satisfaction") NOT (TI USA OR TI "United States" OR TI Canada OR TI Australia OR TI migraine OR TI cancer OR TI "qualitative stud*" OR AB USA OR AB "United States" OR AB Canada OR AB Australia OR AB migraine OR AB cancer OR AB "qualitative stud*") Limiters - Published Date: 20160101-20211231 Expanders - Apply equivalent subjects Narrow by Language: - spanish Narrow by Language: - german Narrow by Language: - english Search modes - Boolean/Phrase

Reporting checklist for protocol of a systematic review and meta analysis.

Based on the PRISMA-P guidelines.

Instructions to authors

Complete this checklist by entering the page numbers from your manuscript where readers will find each of the items listed below.

Your article may not currently address all the items on the checklist. Please modify your text to include the missing information. If you are certain that an item does not apply, please write "n/a" and provide a short explanation.

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Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart LA. Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) 2015 statement. Syst Rev. 2015;4(1):1.

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Reporting Item			
Title			
Identification	#1a	Identify the report as a protocol of a systematic review	1
Update	#1b	If the protocol is for an update of a previous systematic review, identify as such	n/a
Registration			
	#2	If registered, provide the name of the registry (such as PROSPERO) and registration number	1, 5
Authors			
Contact	#3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contribution	#3b	Describe contributions of protocol authors and identify the guarantor of the review	10

Amendments

#4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	5
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Support

Sources	#5a	Indicate sources of financial or other support for the review	10
Sponsor	#5b	Provide name for the review funder and / or sponsor	10
Role of sponsor or funder	#5c	Describe roles of funder(s), sponsor(s), and / or institution(s), if any, in developing the protocol	10

Introduction

Rationale	#6	Describe the rationale for the review in the context of what is already known	2, 3, 4
Objectives	#7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	4, 5

Methods

Eligibility criteria	#8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	5, 6
Information sources	#9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	6
Search strategy	#10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	6, 7
Study records - data management	#11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	7
Study records - selection process	#11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	7
Study records - data	#11c	Describe planned method of extracting data from reports (such as	7

1	collection process		piloting forms, done independently, in duplicate), any processes for	
2			obtaining and confirming data from investigators	
3				
4	Data items	#12	List and define all variables for which data will be sought (such as	7
5			PICO items, funding sources), any pre-planned data assumptions and	
6			simplifications	
7				
8				
9	Outcomes and	#13	List and define all outcomes for which data will be sought, including	5, 6, 7
10	prioritization		prioritization of main and additional outcomes, with rationale	
11				
12				
13	Risk of bias in	#14	Describe anticipated methods for assessing risk of bias of individual	7, 8
14	individual studies		studies, including whether this will be done at the outcome or study	
15			level, or both; state how this information will be used in data synthesis	
16				
17				
18	Data synthesis	#15a	Describe criteria under which study data will be quantitatively	n/a
19			synthesised	
20				
21				
22	Data synthesis	#15b	If data are appropriate for quantitative synthesis, describe planned	n/a
23			summary measures, methods of handling data and methods of	
24			combining data from studies, including any planned exploration of	
25			consistency (such as I2, Kendall's τ)	
26				
27				
28				
29	Data synthesis	#15c	Describe any proposed additional analyses (such as sensitivity or	8
30			subgroup analyses, meta-regression)	
31				
32				
33	Data synthesis	#15d	If quantitative synthesis is not appropriate, describe the type of	8
34			summary planned	
35				
36				
37	Meta-bias(es)	#16	Specify any planned assessment of meta-bias(es) (such as publication	9
38			bias across studies, selective reporting within studies)	
39				
40				
41	Confidence in	#17	Describe how the strength of the body of evidence will be assessed	n/a
42	cumulative		(such as GRADE)	
43	evidence			
44				

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48 <https://www.goodreports.org/>, a tool made by the [EQUATOR Network](#) in collaboration with [Penelope.ai](#)
49