

# Psychische Belastungen bei Geflüchteten

Gefördert von der



Projekt-Nr.: 1/16

## Abschlussbericht

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# 1. Allgemeine Angaben zum Projekt

## 1.1. Rahmenbedingungen der Forschungsstudie

Die folgende Übersicht fasst zunächst die Anlage und das Design der Studie zusammen:

**Übersicht 1**    Aufbau der Studie (wie geplant)

|                                   |   |
|-----------------------------------|---|
| <b>Studiendesign</b>              | <ul style="list-style-type: none"><li>– Querschnittsanalyse, Tablet-basierte Vororterhebung von neuankommenden Asylantragsstellenden in einer Erstaufnahmeeinrichtung des Bundeslandes Sachsen mit dem Sitz in Leipzig</li></ul>  |
| <b>Stichprobe</b>                 | <ul style="list-style-type: none"><li>– N=500 (+ N=70 als Pilotierungsstichprobe)</li><li>– Erhebung in der jeweiligen Muttersprache der Teilnehmer: Arabisch, Persisch (Farsi), Türkisch, Kurdisch, Russisch, Tigrinja, Urdu, Französisch, Englisch, Spanisch, Albanisch, Deutsch</li></ul>  |
| <b>Stichprobenzugang</b>          | <ul style="list-style-type: none"><li>– Zusammenarbeit mit der Stabstelle Asyl des Landesinnenministeriums, Vorort-Zusammenarbeit mit Leitung und Betreuung der Einrichtung durch Johanniter-Unfall-Hilfe e.V.</li></ul>  |
| <b>Verfahren / Datengewinnung</b> | <ul style="list-style-type: none"><li>– quantitativer Ansatz</li><li>– Einsatz standardisierter Verfahren (Selbstauskunft)</li><li>– Tablet-Erhebung (LimeSurvey), Paper-and-Pencil-Version als Pilotierung</li></ul>   |
| <b>Zielgrößen</b>                 | <ul style="list-style-type: none"><li>– Soziodemographie und Fluchtverlauf</li><li>– psychische und soziale Folgen der Flucht, subjektive Bedarfe</li><li>– Prävalenzraten für gängige psychische Störungen (Somatisierungsstörung, Angst, Depression, Post-Traumatische Belastungsstörung)</li><li>– Traumatische Lebensereignisse</li></ul> |
| <b>Messzeitpunkte</b>             | <ul style="list-style-type: none"><li>– ein Messzeitpunkt, möglichst innerhalb der ersten 7 Tage nach der Aufnahme in der Einrichtung</li></ul>   |

Das Forschungsprojekt wurde in der Abteilung für Medizinische Psychologie und Medizinische Soziologie (Universitätsmedizin, Universität Leipzig) konzipiert und durchgeführt. Projektbeginn war am 1. September 2016, wissenschaftliche Projektleiter waren Dr. Yuriy Nesterko und Prof. Dr. Heide Glaesmer. Als Projektmitarbeiter wurde ein Wissenschaftler (David Jäckle) in Leipzig eingestellt. Ferner waren Arbeitsgruppenmitglieder sowie studentische Hilfskräfte in die Projektarbeit integriert.

Aufgrund der notwendigen inhaltlichen und methodischen Vorarbeiten, jedoch vor allem der Implementierung der Kooperation mit dem Landesinnenministerium in Sachsen, in dessen Obhut die Erstaufnahmeeinrichtungen für Asylsuchende liegen, konnte die Datenerhebung erst im Mai 2017 gestartet werden.

## **1.2. Hintergrund, Ziele und Forschungsfragen**

Über den psychischen Gesundheitszustand von Geflüchteten in Deutschland gibt es kaum verlässliche Daten, wenngleich Einigkeit darüber besteht, dass innerhalb dieser Personengruppe mit deutlich höheren Prävalenzraten vor allem für die Posttraumatische Belastungsstörung (PTBS) verglichen mit den Werten für die Allgemeinbevölkerung gerechnet werden kann (Lämmlein & Grube, 2012; Ruf et al., 2010; Sieberer et al., 2011). Es erscheint naheliegend, dass Geflüchtete sowie Kriegs- und Folteropfer häufiger von psychischen Störungen betroffen sind (Johnson & Thompson, 2008). Geflüchtete, die kumulativen traumatischen Ereignissen vor, während und nach der Migration ausgesetzt sind, weisen ein erhöhtes Erkrankungsrisiko auf (Flatten et al., 2011; Knaevelsrud, Stammel & Boettche, 2012; Maercker, 2009a; Steel et al., 2009). So erleben sie signifikant häufiger lang andauernde und wiederholte interpersonelle Traumata wie Krieg, Verfolgung und Folter (Johnson & Thompson, 2008). Die Posttraumatische Belastungsstörung geht häufig mit komorbiden Störungen wie Angststörungen, Depressionen und somatoformen Störungen einher. Oft geht ihr eine Anpassungsstörung voraus. Es können zudem dissoziative Störungen, Suchterkrankungen und Suizidalität auftreten. Dabei sind komorbide Störungen eher die Regel als die Ausnahme, auch ist die Chronifizierung einer PTBS relativ häufig (Flatten et al., 2011; Knaevelsrud, Stammel & Boettche, 2012). Die Projektziele erstrecken sich auf die Erfassung der Prävalenzraten für Posttraumatische Belastungsstörungen, Angststörungen, Depressionen und somatoforme Beschwerden bei neu ankommenden Geflüchteten in Leipzig, auf die Beschreibung und Analyse der von ihnen erlebten Belastungen und Traumata, sowie auf den subjektiven und objektiven Unterstützungsbedarf. Ausgehend von den zu erwartenden Befunden zielt das Projekt auf die Ableitung von Handlungsempfehlungen für die beteiligten Akteure in den gesundheitsfördernden und politischen Praxisfeldern mit dem Wunsch, traumatisierten Geflüchteten, die aufgrund der Kriege bzw. Krisensituationen aus ihren Heimatländern fliehen

mussten, an ihren spezifischen Bedürfnissen orientierte, kultursensible Unterstützungsmaßnahmen anbieten zu können.

Im Einzelnen wurden folgende Forschungsfragen untersucht:

- I. Wie lässt sich die Gruppe von neuankommenden Asylsuchenden in Sachsen hinsichtlich sozio-demographischer und fluchtspezifischer Merkmale beschreiben?
- II. Von welchen traumatischen Ereignissen und anderen Belastungen vor und während der Flucht berichten die Betroffenen?
- III. Wie hoch ist der Anteil der von PTBS, Depressionen, Angst- und somatoformen Störungen betroffenen Menschen unter den neuankommenden Asylsuchenden in Sachsen?
- IV. Wie viele der Betroffenen wünschen sich eine psychosoziale bzw. psychotherapeutische Versorgung?
- V. Wie lässt sich der objektive Versorgungsbedarf von psychisch belasteten neuankommenden Asylsuchenden beschreiben?

Alle Fragestellungen wurden in den Projektpublikationen und Präsentationen, die weiter unten vorgestellt werden (Punkt 3: Ergebnisse), aufgegriffen und – separat oder gebündelt – bearbeitet.

### **1.3. Datenerhebung**

Die Datenerhebung erfolgte in Kooperation mit der Erstaufnahmeeinrichtung und nach Einholung der Einverständniserklärung der Studienteilnehmer. Die Pilot-Befragung wurde ausschließlich schriftlich, d.h. als Paper-and-Pencil Erhebung durchgeführt, da wir aufgrund bisheriger Erfahrungen bei diesem Vorgehen von einem geringeren Aufwand ausgingen. Anschließend wurde die Befragung Tablet-basiert in der jeweiligen Muttersprache der Teilnehmenden realisiert, um zum einen die Rücklaufquote zu erhöhen und zu anderen einen ökonomischen und validen Umgang mit fehlenden Angaben zu gewährleisten. Dies ist insbesondere bei Querschnitterhebungen (mit nur einem Messzeitpunkt) im Hinblick auf Datenmanagement und folglich Datenverwertung von hohem Vorteil.

Vom 1. Mai 2017 bis einschließlich 30. Juni 2018 wurden 1316 potentielle Teilnehmer (d.h. alle, die die notwendigen Einschlusskriterien erfüllten, siehe 2.1), die in der Erstaufnahmeeinrichtung untergebracht waren, sofern angetroffen um Studienteilnahme gebeten. Die Studienteilnehmer wurden von Projektmitarbeiter:innen in ihrer Wohneinheit aufgesucht, über

die Studienziele sowie Datenschutzrichtlinien aufgeklärt und bei Bereitschaft zur Teilnahme mit der Beantwortung des Fragebogens via Tablet vertraut gemacht. Die Informations- und Rekrutierungsgespräche wurden mittels Sprachmittler:innen bzw. Studienmitarbeiter:innen mit entsprechenden Sprachkenntnissen realisiert. Folgende Sprachen konnten hierbei abgedeckt werden: Arabisch, Türkisch, Französisch, Spanisch, Russisch und Englisch. Die Informationsblätter und Einverständniserklärungen wurden den Teilnehmenden in ihrer jeweiligen Muttersprache ausgehändigt. Die Beantwortung des Fragebogens erfolgte in der Regel von den Teilnehmenden selbstständig, bei Bedarf standen den Teilnehmenden Projektmitarbeiter:innen zur Hilfe. Die Erhebungen vor Ort fanden dreimal in der Woche, immer montags, mittwochs und donnerstags jeweils zwischen 10 und 13 Uhr statt. Abgewichen davon wurde ausschließlich aufgrund von Feiertagen, wobei eine Kontinuität in der Erhebung beibehalten wurde.

### **1.3. Dateneingabe und -prüfung**

Die Daten wurden parallel zur laufenden Datenerhebung eingegeben bzw. verwaltet. Die Datenkontrolle und Konsistenzprüfung wurde in monatlichem Abstand durchgeführt, eine einfache Plausibilitätsprüfung jeweils unmittelbar nach der Eingabe von maximal 30 Datensätzen.

### **1.4. Ethikvotum**

Es wurde ein positives Ethikvotum von der Ethikkommission der Medizinischen Fakultät der Universität Leipzig: AZ 446/16-ek erteilt.

## **2. Methodisches Vorgehen**

Das Projekt wurde als Querschnittsuntersuchung durchgeführt.

### **2.1. Stichprobe**

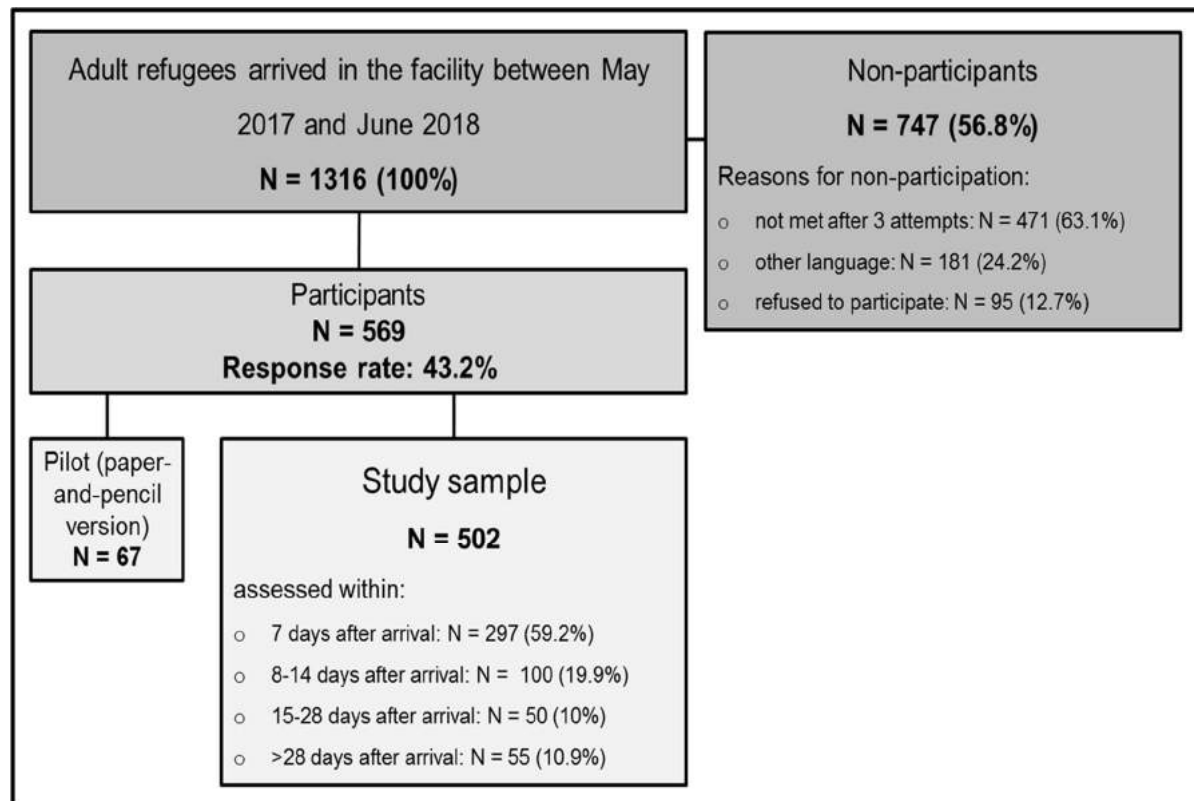
**Einschlusskriterien:** In die Studie aufgenommen wurden Personen mit folgenden Merkmalen:

- Alter  $18 \geq$  Jahre,
- ausreichende Kenntnisse der bereitgestellten Sprachversionen des Fragebogens (Arabisch, Persisch (Farsi), Türkisch, Kurdisch, Russisch, Tigrinja, Urdu, Französisch, Englisch, Spanisch, Albanisch, Deutsch)
- Vorliegen einer schriftlichen Einwilligung der Teilnehmer:innen



Insgesamt wurde eine Teilnahmequote von etwa 43.2% erreicht, was mit Blick auf die Sprachbarrieren bei der Akquise und einen besonders erschwerten Zugang zur Zielpopulation als sehr gut zu bewerten ist. Der Hauptgrund für Nicht-Teilnahme lag in der Abwesenheit der Zielperson während der Befragungszeiträume, mit einem Anteil von etwa 63.1% innerhalb der Nicht-Teilnehmenden. Die detaillierte Auflistung der Ausfallgründe ist der Abbildung 2 zu entnehmen.

**Abbildung 2** Flussdiagramm zum Verlauf der Datenerhebung



## 2.3. Erhebungsinstrumente

Bei erklärter Bereitschaft zur Studienteilnahme wurde den Patienten ein Tablet ausgehändigt mit der Bitte, einen in ihrer jeweiligen Muttersprache installierten Fragebogen auszufüllen und entweder persönlich oder beim erneuten Besuch in ca. 30 Minuten abzugeben. Die Schwerpunkte des Studienfragebogens betreffen die Bereiche: Soziodemographie und Fluchtverlauf, psychische und soziale Folgen der Flucht, subjektiver Bedarf an Gesundheitsversorgung, Prävalenzraten für häufige psychische Störungen (Somatisierungsstörung, Angst, Depression, Posttraumatische Belastungsstörung) sowie traumatische Lebensereignisse. Die Fragebögen wurden entsprechen den gängigen Standards hin- und rückübersetzt, sowie im Anschluss im Hinblick auf Unstimmigkeiten mit dem Original abgeglichen und gegebenenfalls angepasst. Eine Übersicht der erhobenen Themen ist in Tabelle 1 dargestellt.

**Tabelle 1** Eingesetzte Erhebungsinstrumente

| <b>Zielgrößen</b>  | <b>Erhebungsinstrumente</b>   |
|--|---|
| <b>Soziodemografie</b>   |   |
| Standardinventar zu Alter, Geschlecht, Partnerschaft, Familienstand, Kinder, Bildung, Erwerbstätigkeit   |   |
| <b>Fluchtbezogene Charakteristika und Fluchtverlauf</b>  |   |
| Selbstentwickeltes Inventar zu Fluchtmotiven, -verlauf, -dauer, Zwischenaufenthalten, Begleitung, Informationsstand über gegenwärtige Situation von Angehörigen und Freunden |   |
| <b>Symptombezogene Merkmale</b>  |   |
| Selbsteinschätzung Gesundheitszustand  | Subjektiver Gesundheitszustand, physisch/psychisch  |
| Selbsteinschätzung Bedarf  | Behandlungswunsch, physisch/psychisch; Behandlungsmöglichkeiten vor der Flucht, physisch/psychisch  |
| Somatoforme Beschwerden  | Somatic Symptom Scale-8 (SSS-8), Zur Erfassung der Symptome einer Somatisierungsstörung (Gierk et al., 2014)                              |
| Depressivität  | Gesundheitsfragebogen für Patienten (PHQ-9) (Kroenke et al., 2001)<br>Hopkins Symptoms Checklist-25 (HSCL-25) (Petermann & Brähler, 2013) |
| Ängstlichkeit  | Hopkins Symptoms Checklist-25 (HSCL-25) (Petermann & Brähler, 2013)   |
| Traumatische Lebensereignisse  | Life Events Checklist for DSM-5 (LEC-5) (Weathers et al., 2013)   |
| Posttraumatische Belastungsstörung   | The PTSD Checklist for DSM-5 (PCL-5) (Weathers et al., 2013)  |

### 3. Ergebnisse

Die Hauptergebnisse werden in Form von im Laufe der Jahre 2020 und 2021 publizierten Artikeln in internationalen Fachzeitschriften zusammengetragen. Die Publikationen werden kurz inhaltlich zusammengefasst.

**Nesterko Y, Jäckle D, Friedrich M, Holzapfel L, Glaesmer H (2020). Prevalence of post-traumatic stress disorder, depression and somatisation in recently arrived refugees in Germany: an epidemiological study. Epidemiology and Psychiatric Sciences 29, e40, 1–11.**

In der Arbeit wurden PTBS, Depression und somatoforme Beschwerden bei neuangekommenen Geflüchteten in einer Aufnahmeeinrichtung für Asylsuchende in Leipzig untersucht. Während des Erhebungszeitraums (Mai 2017- Juni 2018) wurden insgesamt 1316 erwachsene Personen in der Einrichtung aufgenommen, von denen 569 an der Studie teilgenommen haben (N=67 Pilotstudie und N=502 Studienstichprobe; Rücklaufquote 43,2%). Der Fragebogen (in 11 verschiedenen Sprachen) umfasste soziodemographische und flugbezogene Fragen sowie standardisierte Instrumente zur Erfassung von PTBS (PCL-5), Depression (PHQ-9) und somatoformen Beschwerden (SSS-8). Knapp die Hälfte der Befragten (49,7%) wurden nach festgelegten Cut-off-Werten positiv für mindestens eine der untersuchten psychischen Störungen gescreent, wobei 31% an Somatisierung, 21,7% an einer schweren Depression und 34% an einer PTBS litten. Die Ergebnisse unterstreichen die hohe psychische Belastung von Geflüchteten und liefern erstmalig belastbare (für Alter, Geschlecht und Herkunftsland gewichtete) Daten für eine bedarfsorientierte und effiziente Planung der Gesundheitsversorgung von neuankommenden Geflüchteten in Deutschland.

*Die Arbeit wurde bereits 34 Mal zitiert (Stand 03.05.2021 google scholar)*

**Nesterko Y, Jäckle D, Friedrich M, Holzapfel L, Glaesmer H (2020). Factors predicting symptoms of somatization, depression, anxiety, posttraumatic stress disorder, self-rated mental and physical health among recently arrived refugees in Germany. Conflict and Health, 14:44.**

Ausgehend von dem ermittelten hohen Belastungsgrad der neuankommenden Geflüchteten in Deutschland haben wir in dieser Arbeit die möglichen Schutz- und Risikofaktoren für das Auftreten von psychischen Belastungen innerhalb dieser Population untersucht. Im Ergebnis einer Reihe von Regressionsanalysen wurden für die einzelnen Störungsbilder bzw. den subjektiv eingeschätzten physischen und psychischen Gesundheitszustand Prädiktoren ermittelt: Fehlende Informationen über zurückgelassene Familienmitglieder sowie subjektiver Bedarf an medizinischer Versorgung waren signifikant mit Symptomen von Depression, Angst und PTBS sowie somatoformen Symptomen assoziiert. Eine höher subjektiv eingeschätzte psychische Gesundheit war signifikant mit Partnerschaft, Kinderlosigkeit, einer geringeren Anzahl an traumatischen Ereignissen und vorhandenen Informationen über die zurückgelassenen Familienmitglieder assoziiert. Die Ergebnisse liefern erste Hinweise zur besseren Identi-

fikation von Geflüchteten, die direkt nach der Ankunft einer psychosozialen Betreuung bedürfen und tragen somit zur Beantwortung der Frage bei, wie eine längerfristig angelegte Gesundheitsversorgung für besonders vulnerable Gruppen innerhalb der Geflüchteten, auch unabhängig von ihrem Aufenthaltsstatus zeitnah und bedarfsorientiert gewährleistet werden kann.

*Die Arbeit wurde bereits 9 Mal zitiert (Stand 03.05.2021 google scholar)*

**Nesterko Y, Jäckle D, Friedrich M, Holzapfel L, Glaesmer H (2020). Health care needs among recently arrived refugees in Germany: a cross-sectional, epidemiological study. International Journal of Public Health 65, 811-821.**

Ergänzend zu den Prävalenzen sowie den Schutz- und Risikofaktoren für die verschiedenen psychischen Störungsbilder bei neuankommenden Geflüchteten wurde schließlich der subjektive Versorgungsbedarf für psychische und physische Gesundheit in Relation zu gesundheitsbezogenen, soziodemographischen und fluchtbezogenen Merkmalen untersucht. Eine höhere Anzahl von traumatischen Ereignissen, positives Screening für mindestens eine der untersuchten psychischen Störungen und ein aktueller Bedarf an Unterstützung bei der Navigation durch das deutsche Gesundheitssystem wurden als signifikante Prädiktoren für den subjektiven Versorgungsbedarf für psychische und physische Gesundheit ermittelt. Darüber hinaus wurde festgestellt, dass männliche Geflüchtete häufiger einen aktuellen Behandlungsbedarf für psychische Symptome berichten. Im Ergebnis dieser Arbeit konnten wir eindrücklich zeigen, dass insbesondere die gesundheitsbezogenen Merkmale und nicht die soziodemographischen und fluchtbezogenen Charakteristika in einem Zusammenhang mit dem subjektiven Bedarf an medizinischer Versorgung im Kollektiv von neuankommenden Geflüchteten stehen. Daraus lässt sich klar ableiten, dass eine ausführliche Erfassung sowohl von psychischen Symptomen als auch vom subjektiven Versorgungsbedarf einen wichtigen ersten Schritt für eine zeitnahe und effiziente Gesundheitsversorgung von Geflüchteten darstellt.

*Die Arbeit wurde bereits 4 Mal zitiert (Stand 03.05.2021 google scholar)*

*Für die drei aufgeführten Arbeiten erhielt Dr. Yuriy Nesterko im März 2021 den Förderpreis der Deutschsprachigen Gesellschaft für Psychotraumatologie (DeGPT):*

<https://www.uni-leipzig.de/newsdetail/artikel/forschung-zu-psychischen-belastungen-von-gefluechteten-ausgezeichnet-2021-04-12/>

**Nesterko Y, Schönenberg K, Glaesmer H (2021). Erfahrungen von sexualisierter Gewalt und psychische Belastungen bei männlichen und weiblichen neuankommenden Geflüchteten in Deutschland. Dtsch Arztebl Int 2021; 118: 130–1. DOI: 10.3238/arztebl.m2021.0120**

Bei diesem Korrespondenz-Paper handelt es sich um erste deskriptive Analysen zu Erfahrungen von sexualisierter Gewalt innerhalb der befragten Stichprobe. Sexualisierte Gewalterfahrungen sind häufig Ursache von schweren Traumafolgestörungen bei den Betroffenen. Bislang liegen keine Studien vor, die systematisch sexualisierte Gewalterfahrungen bei Geflüchteten in Deutschland untersuchen. Aus dem vorliegenden Datensatz haben wir Erfahrungen von sexualisierter Gewalt sowie depressive (PHQ-9), somatoforme (SSS-8) und post-traumatische Belastungssymptomen (PCL-5) der neuangekommenen Geflüchteten analysiert. Insgesamt gaben 206 Personen (36.6%; 32.6% der Männer; 45.9% der Frauen) an, sexualisierte Gewalterfahrungen gemacht zu haben. Betroffene wiesen im Vergleich zu Befragten ohne sexualisierte Gewalterfahrungen signifikant höhere Prävalenzraten für Depression (27% vs. 18.%; OR: 1.633, 95% CI: 1.075–2.479) und PTBS (45.1% vs. 30.3%; OR: 1.844, 95% CI: 1.282–2.652) auf. Betroffene Frauen gaben eine höhere Symptomlast für somatoforme Beschwerden an als betroffene Männer (50% vs. 29.8%).

Die Ergebnisse unterstreichen die Bedeutung sexualisierter Gewalt als wichtigen Risikofaktor für psychische und somatische Symptome und liefern erstmals belastbare Daten zum Ausmaß und den psychischen Folgen sexualisierter Gewalt bei Geflüchteten. Für die medizinische Versorgung werden damit Indikatoren zur besseren Erkennung von Betroffenen geliefert. Weiterführende Forschung, die sich differenzierter mit dem Phänomen sexualisierter Gewalt auseinandersetzt, ist dringend vonnöten.

### ***Abschließende Bemerkungen – Fazit und Stellungnahme***

Bei den vorgestellten Arbeiten handelt es sich um aufeinander aufbauende Analysen, deren Datenbasis eine, über ein Jahr andauernde, epidemiologisch angelegte Befragung von neuankommenden Geflüchteten in einer Erstaufnahmeeinrichtung in Deutschland ist. Hierbei sei besonders die Qualität der erhobenen Daten zu unterstreichen – insgesamt wurden 567 erwachsene Geflüchtete aus über 30 verschiedenen Ländern mittels eines Fragebogensets (inklusive standardisierter Skalen) befragt, der in 11 verschiedenen Sprachen hin- und rückübersetzt vorlag. Darüber hinaus ist es gelungen die überwiegende Mehrheit der Befragten innerhalb der ersten 7 Tage nach ihrer Ankunft zu befragen, sodass die aus der früheren Forschung bekannten und ausführlich diskutierten Post-Migrations-Risikofaktoren für die hohe psychische Belastung von Geflüchteten aus unseren Berechnungen weitestgehend auszuschließen waren. Mit Blick auf die beschriebene Methodik sowie die Stichprobengröße handelt es sich um die erste und bislang einzige Studie aus Deutschland, in der neben einer

annähernd repräsentativen Prävalenzschätzung für die gängigen psychischen Störungen, insbesondere auch die subjektive Sicht der Geflüchteten auf ihren physischen und psychischen Gesundheitszustand sowie Angaben zum aktuellen subjektiven Versorgungsbedarf direkt nach der Ankunft in Deutschland erfasst wurden. Zudem werden aktuell ausführliche Analysen zu Erfahrungen von sexualisierter Gewalt sowie Suizidgedanken in dem untersuchten Kollektiv durchgeführt, ebenfalls bislang kaum untersuchte Themen sowohl in dem Aufnahmeland Deutschland, aber auch in der internationalen Forschung zu traumatischen Erfahrungen und Traumfolgestörungen bei Geflüchteten.

### **Danksagung**

Unser Dank gilt allen Studienteilnehmer:innen, die sich zur Teilnahme an diesem Forschungsprojekt bereiterklärt und in Fragebögen Auskunft über ihre individuellen Erfahrungen zum Fluchtverlauf und ihrem gegenwärtigen psychischen Zustand gegeben haben. Danken möchten wir auch der Roland Ernst Stiftung für Gesundheitswesen für die Förderung dieser Studie sowie den auf Seite 2 genannten zahlreichen Kooperationspartner:innen, Mitarbeiter:innen, studentischen Hilfskräften und Sprachmittler:innen für ihr hohes Engagement bei der Zusammenarbeit, ohne die eine Datenerhebung in diesem Umfang nicht möglich gewesen wäre.

### **Zitierte Literatur**

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# Prevalence of post-traumatic stress disorder, depression and somatisation in recently arrived refugees in Germany: an epidemiological study

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## Abstract

**Aims.** Despite recent worldwide migratory movements, there are only a few studies available that report robust epidemiological data on the mental health in recent refugee populations. In the present study, post-traumatic stress disorder (PTSD), depression and somatisation were assessed using an epidemiological approach in refugees who have recently arrived in Germany from different countries.

**Methods.** The study was conducted in a reception facility for asylum-seekers in Leipzig, Germany. A total of 1316 adult individuals arrived at the facility during the survey period (May 2017–June 2018), 569 of whom took part in the study ( $N = 67$  pilot study and  $N = 502$  study sample; response rate 43.2%). The questionnaire (11 different languages) included socio-demographic and flight-related questions as well as standardised instruments for assessing PTSD (PCL-5), depression (PHQ-9) and somatisation (SSS-8). Unweighted and weighted prevalence rates of PTSD, depression and somatisation were presented stratified by sex and age groups.

**Results.** According to established cut-off scores, 49.7% of the respondents screened positive for at least one of the mental disorders investigated, with 31% suffering from somatisation, 21.7% from depression and 34.9% from PTSD; prevalence rates of major depression, other depressive syndromes and PTSD were calculated according to the DSM-5, which indicated rates of 10.3, 17.6 and 28.2%, respectively.

**Conclusions.** The findings underline the dramatic mental health burden present among refugees and provide important information for health care planning. They also provide important information for health care systems and political authorities in receiving countries and strongly indicate the necessity of establishing early psychosocial support for refugees suffering from psychological distress.

## Introduction

According to the Office of the United Nations High Commissioner for Refugees (UNHCR), 68.5 million people were forcibly displaced worldwide by the end of 2017, of which 25.4 million have been acknowledged as refugees and 3.1 million as registered asylum-seekers (UNHCR, 2018). The number of forcibly displaced individuals has been growing for years – in many instances as a result of human rights violations due to armed conflicts and political instability in different parts of the world. Turkey hosted the largest number of refugees worldwide in 2017 (3.5 million), followed by Pakistan (1.4 million), Uganda (1.4 million), Lebanon (998 900), the Islamic Republic of Iran (979 400) and Germany (970 400) (UNHCR, 2018).

By now, there is striking evidence indicating that people who have to leave their homes because of armed conflicts, different kinds of organised violence, persecution and/or threats related to their ethnic, cultural or religious backgrounds, sexual orientation and/or political affiliations are exposed to a substantial level of psychological stressors, are more likely to be exposed to significant traumatic events and consequently are at a high risk of developing mental disorders (Fazel *et al.*, 2005; Bogic *et al.*, 2015; WHO, 2018). In general, research has focused on prevalence rates of and specific risk factors for common mental disorders, most often post-traumatic stress disorder (PTSD) and depression (Giacco *et al.*, 2018). A closer look at the existing evidence on prevalence rates of mental disorders in refugee populations reveals a wide range of reported prevalence rates (e.g. 0–99% for PTSD and 3–85% for depression; Lindert *et al.*, 2009; Steel *et al.*, 2009). Moreover, only a few recent studies are available that report robust epidemiological data on the mental health of refugees specifically in light of recent worldwide migratory movements. For example, Steel *et al.* (2017) reported prevalence rates of 47% for PTSD and 20% for depression in refugees from predominantly sub-Saharan Africa ( $N = 420$ ) using stratified quota sampling based on Swedish census data. In a 2017 population-based survey by Tinghög *et al.*, weighted prevalence rates of 40.2% for depression, 31.8% for anxiety and 29.9% for PTSD were reported in Syrian refugees ( $N = 1215$ ) who had resettled in Sweden. Cheung *et al.* (2018) used a convenience sampling method in their study,

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which found a PTSD prevalence rate of 43% among Syrian refugees ( $N = 1197$ ) in Sweden and Turkey and higher rates for those living in Turkey. Overall, existing findings, though ranging significantly between studies, consistently indicate significantly increased prevalence rates of mental disorders in refugees. This range may be attributable to (1) heterogeneity within the refugee populations (e.g. Syrian refugees *v.* refugees from Eritrea) in different host countries (e.g. Sweden *v.* Turkey) at different times of assessment (recently arrived refugees *v.* years after resettlement), (2) differences in methodology (e.g. sample size, sampling methods, selection bias) and (3) varying quality of instruments used (Giacco *et al.*, 2018). In their recently published review on mental health among refugees, Giacco *et al.* (2018) conclude that studies of higher methodological quality based on more representative samples report lower prevalence rates compared to studies which used opportunistic or convenience samples. In addition, survey timing appears to be important when interpreting results, especially when considering (1) possible trauma exposure before, during and/or after flight, and (2) immigration-related risk factors reported by several studies as having long-term negative impacts on immigrants/refugees' mental health after resettlement (e.g. perceived discrimination, long asylum-application procedures, health care system barriers, restricted access to the labour market, etc.; Iversen and Morken, 2004; Johnson and Thompson, 2008; Bogic *et al.*, 2012; Fazel *et al.*, 2012). Despite the increasing number of refugees who have arrived in Europe since 2015, there is still a lack of robust epidemiological data on mental disorders, especially on symptoms of somatisation (Rohlof *et al.*, 2014) in different refugee populations living in European countries in general, and especially in Germany, the host country with the largest population of recently arrived refugees in the European Union. Since somatisation is a common mental disorder in traumatised individuals and a common comorbidity of PTSD, it seems worthwhile to investigate symptoms of somatisation in refugees (Spitzer *et al.*, 2008). Therefore, the aim of the present study is to use an epidemiological approach to report prevalence rates of PTSD, depression and somatisation in refugees who have recently arrived in Germany from different regions of origin.

## Methods

### Data collection and study sample

The study was conducted between May 2017 and June 2018 in a primary reception facility operated by the Federal State of Saxony for asylum-seekers in Leipzig, Germany. The study's target population<sup>1</sup> consisted of the adult individuals ( $\geq 18$  years) who were currently being accommodated in the facility during the survey period. Based on the facility's registration data of all newly arrived residents, potential study participants were approached by members of the project staff in their accommodation unit, informed about the study objectives as well as data protection policy, and, in the event that they were willing to participate, introduced to the survey procedure. Between 1 and 15 May 2017, the participants were asked to fill out a paper version of the questionnaire (pilot study;  $N = 67$ ), after 17 May 2017, the participants filled

out a tablet-based questionnaire in their native language. Correspondingly, information and recruitment procedures were carried out using language interpreters or study staff with appropriate language skills<sup>2</sup>. The following languages were available: Arabic, English, Farsi, French, German, Russian, Spanish, Tigrinya and/or Turkish. After information sheets and consent forms in the languages listed above were handed out and consent to participate was given, the participants responded to the questionnaire (time needed approximately: 45 min). Project staff was available to answer questions when necessary. The assessments took place three times a week, on Mondays, Wednesdays and Thursdays between 10 a.m. and 1 p.m. Recently arrived residents were approached first (arrival within the last 7 days) followed by residents who had arrived more than 7 days ago, but had yet to complete the questionnaire. Data were electronically transferred and administered consecutively to the ongoing data collection using LimeSurvey Offline-App for android systems. Data control and consistency checks were carried out at monthly intervals and a simple plausibility check was carried out immediately after the entry of a maximum of 30 data sets. Data were stored in an anonymous form on a computer at the University of Leipzig network in accordance with the data protection guidelines. No personal data were stored.

The study was approved by the Ethics Committee of the Medical Faculty of the University of Leipzig (446/16-ek). All study procedures were conducted in accordance with the Helsinki Declaration and its later amendments or comparable ethical standards. Written informed consent was obtained from all study participants.

### Instruments

The questionnaire used in the present study included sociodemographic and flight-related questions, as well as standardised instruments for assessing PTSD, and symptoms of depression and somatisation. The German version of the questionnaire was translated and back-translated into ten different languages (Albanian, Arabic, English, Farsi, French, Kurdish, Russian, Spanish, Turkish and Urdu) by a professional translation agency (mt-g medical translation GmbH) specialised in medical translations. The Tigrinya version of the questionnaire was translated and back-translated by the same agency based on the English version of the questionnaire. All back-translations were reviewed by the first and last authors and, when necessary, returned to the agency for final modification/adjustment. In the present study, the Albanian, Kurdish and Urdu versions of the questionnaires were not used due to the absence of native speakers of those languages among the study sample.

### Sociodemographic and flight-related characteristics

Participants were asked to provide information about their age, sex, country of origin and/or country of birth, marital status, number of children, level of education, last occupation, duration of their flight, accompaniment during the flight, and current access to information about family members and friends who were left behind. In addition, length of stay in the facility was assessed using registration data provided by the facility staff.

<sup>1</sup>Usually refugees arriving in the facility apply for asylum during the first 2 weeks after arrival. Thus formally all participants of the present study will become asylum-seekers, but due to the date of participation some of them were not asylum-seekers yet. In light of this, we prefer to use the term 'refugees' that seems to describe the participants of the study properly.

<sup>2</sup>All interpreters in the project were informed about study procedure, ethical obligations, and have received training focusing on culture-sensitive diagnostics.

### Traumatic events

The occurrence of traumatic events was recorded using the revised DSM-5 Life Events Checklist (LEC-5) for assessing trauma exposure (Weathers *et al.*, 2013). The LEC-5 is comprised of 16 items, which address the experience of 16 types of events that can potentially result in PTSD or distress. The following response categories are given for each type of event: (1) happened to me, (2) witnessed it, (3) learned about it, (4) part of my job, (5) not sure and (6) doesn't apply. The LEC-5 was used in combination with the PCL-5 for the purpose of establishing exposure to a PTSD A-Criterion, with the response option 'happened to me' (direct exposure) being the only one used in our study.

### Post-traumatic stress disorder

PTSD was assessed with the PCL-5 (PTSD Checklist), a 20-item self-report instrument, which assesses symptoms of PTSD as defined by the DSM-5 (Blevins *et al.*, 2015). The 20 items of the PCL-5 reflect the frequency with which respondents have experienced the item in question rated on a five-point Likert scale ranging from 'not at all' (0) to 'extremely' (4). A total score (0–80) can be obtained by summing up the scores for each of the 20 items. A score at or above the cut-off score of 33 indicates the presence of PTSD in the respondent. In addition, a provisional PTSD diagnosis may be determined by taking items that are rated 2 ('moderately') or higher into consideration following the PTSD diagnostic algorithm of the DSM-5: one B-item (items 1–5), one C-item (items 6–7), two D-items (items 8–14) and two E-items (items 15–20), with cluster B representing intrusion, cluster C avoidance, cluster D negative alterations in cognitions and mood and cluster E measuring alterations in arousal and reactivity. Cronbach's  $\alpha$  in the present study was  $\alpha = 0.95$  (0.93–0.97, for the different language versions).

### Depression

Symptoms of depression were assessed with the Patient Health Questionnaire-9 (PHQ-9; Kroenke *et al.*, 2001). The PHQ-9 was used to assess both the severity of participants' depressive symptoms as well as aiding in making provisional diagnoses of major depressive disorder (MDD) and other depressive syndromes (ODS) based on the diagnostic criteria of the DSM-5. The PHQ-9 contains nine items rated on a scale of 0 ('not at all') to 3 ('nearly every day') which reflect the frequency with which participants have experienced the symptom in question within the previous 14 days. Based on the total sum (0–27), symptom severity can be divided into the categories 'none-minimal' (0–4), 'mild' (5–9), 'moderate' (10–14), 'moderately severe' (15–19) and 'severe' (20–27) depression. Participants with a sum score of  $>14$  were classified as having a depressive disorder. An MDD was diagnosed if the obligatory symptoms (items 1 and 2) were present AND the respondent experienced five or more additional items at least 'more than half of the days' (2). A diagnosis of ODS was determined if items 1 and 2 screened positively AND the respondent experienced two, three or four additional items 'more than half of the day'. Cronbach's  $\alpha$  in the present study was  $\alpha = 0.84$  (0.70–0.89 for the different language versions).

### Somatisation

Somatic symptoms were assessed with the Somatic Symptom Scale-8 (SSS-8), a brief self-reported measure of somatic symptom burden (Gierk *et al.*, 2014). The SSS-8 is a shortened version of

the PHQ-15 questionnaire developed for DSM-5 field trials. Each item can be rated on a five-point Likert scale from 'not at all' (0) to 'very much' (4) referring to the previous 7 days. The total scores therefore range from 0 to 32, and are subdivided into five categories of severity: 'none to minimal' (0–3), 'low' (4–7), 'medium' (8–11), 'high' (12–15) and 'very high' (16–32) somatic symptom burden. A cut-off score of  $>11$  was used for the present study. Participants with a sum score of  $>11$  were diagnosed with somatisation. The internal consistency was  $\alpha = 0.84$  (0.77–0.93 for the different language versions).

### Statistical analyses

Statistical analyses were performed using the IBM SPSS statistical package, version 24.0 for Windows. Descriptive statistics and  $\chi^2$ -tests were used to test possible selection bias between the entire population of newly arrived refugees in the facility and the study sample. Prevalence rates were calculated according to the cut-off scores or algorithms of each questionnaire. In the present study, unweighted and weighted prevalence rates (weighted by country of origin) of PTSD, depression and somatisation were presented in total, stratified by sex and age groups and for the different points of assessment based on how recently the participants had arrived (e.g. within the past 7 days).

## Results

### Sample characteristics and procedure

A total of 1316 adult individuals were newly accommodated in the primary reception facility during the survey period, 569 of whom took part in the study. Of these, 67 individuals filled out the paper version of the questionnaire (pilot study) and 502 (study sample) responded via tablet (response rate 43.2%). Figure 1 gives an overview of the study procedure.

A total of 297 (59.2%) participants were assessed within 7 days after their arrival at the facility, 100 individuals (19.9%) between 8 and 14 days, 50 participants (10%) between 15 and 28 days and another 55 individuals (10.9%) participated more than 28 days after their arrival. The majority of non-participants (63.1%;  $n = 417$ ) were residents who could not be contacted after three attempts to visit them (not present at the allocated accommodation unit), 24.2% ( $n = 181$ ) could not be included due to the fact that the questionnaire was not available in their native language, and 95 individuals (12.7%) refused participation. Data on all non-participants' age, sex and country of origin were recorded to identify possible selection bias.

### Sociodemographic and flight-related characteristics

Table 1 gives an overview of the study sample's sociodemographic and flight-related characteristics as well as the distribution of age, sex and country of origin among participants and non-participants. There were no significant differences between participants and non-participants with respect to age ( $\chi^2(3, 1313) = 3.32$ ,  $p = 0.344$ ) and sex ( $\chi^2(1, 1316) = 0.44$ ,  $p = 0.506$ ). A significant difference between participants and non-participants was found regarding their countries of origin ( $\chi^2(8, 1313) = 172.83$ ,  $p < 0.001$ ), indicating a mild selection bias for the country of origin.

The mean age of the participants in the present study was 29.73 (s.d. = 8.79) years. The majority of the participants were

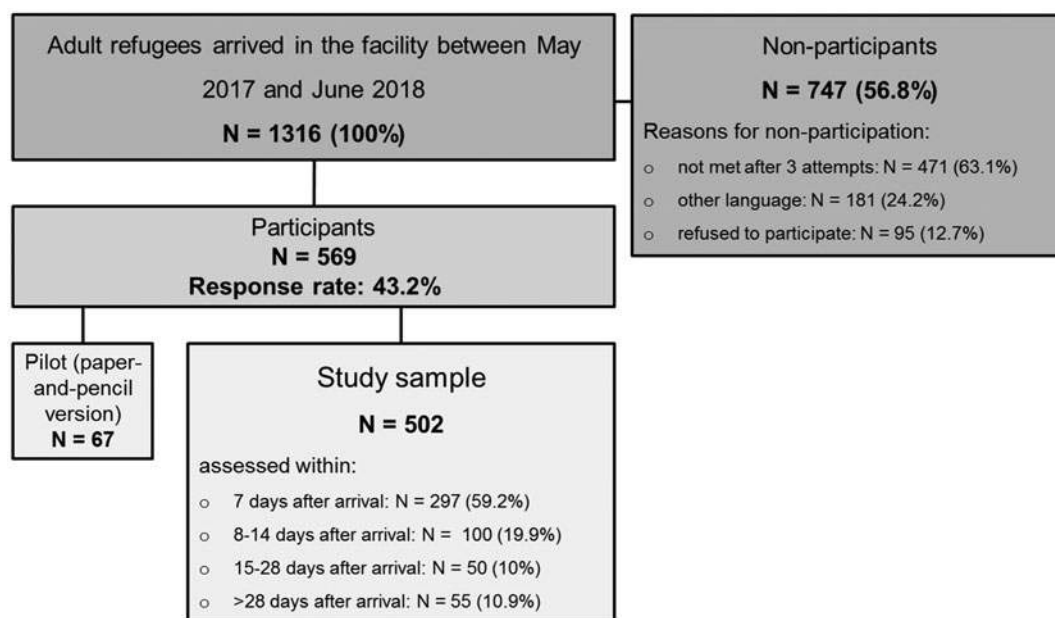


Fig. 1. Study procedure.

male ( $n = 348$ , 69.3%). The largest groups were participants from Cameroon (18.3%), Venezuela (16.9%) and Syria (10.4%); all in all, participants from over 30 different countries took part in the survey. The average number of years of schooling the participants had received was 10.6 (s.d. = 3.78), and 51.9% of the study sample reported having a university degree. A total of 290 (57.9%) participants were single, 35.9% ( $n = 180$ ) were married, 4.2% ( $n = 21$ ) divorced and 2% ( $n = 10$ ) widowed, with 186 (37.1%) participants reporting that they have a partner and 201 (40.1%) that they have children. The mean flight duration was 7.4 months (s.d. = 11.29), reflecting a wide range spanning from 0 to 156 months, with 44.7% ( $n = 224$ ) of the participants reporting that they had been alone while fleeing. A total of 235 (46.9%) participants reported that they currently have no access to information about their family members, and 313 (62.7%) had no information about friends they had left behind.

### Traumatic events

The mean number of traumatic events this study's participants reported having experienced was 4.78 (s.d. = 3.75), with an overall range of 0–15 events. In Fig. 2, frequencies of the different traumatic events assessed in the present study are displayed for the entire sample stratified by sex. With rates of 61.6% ( $n = 307$ ) in total, 52.6% ( $n = 82$ ) in females and 64.4% ( $n = 222$ ) in males, physical assault was the event most frequently reported, followed by assault with a weapon (54.8% ( $n = 275$ ) in total, 42.9% ( $n = 67$ ) of female and 59.9% ( $n = 205$ ) of male participants), severe human suffering (44.8% ( $n = 225$ ) in total, 44.9% ( $n = 70$ ) of female and 44.7% ( $n = 153$ ) of male participants) and captivity (37.8% ( $n = 190$ ) in total, 21.8% ( $n = 34$ ) of female and 45% ( $n = 154$ ) of male participants). Sexual assaults were reported by 24.3% ( $n = 152$ ) of the participants (34.6% ( $n = 54$ ) of females and 19% ( $n = 65$ ) males). In general, 75.7% ( $n = 380$ ) of participants were exposed to interpersonal

traumatic events, and 85.5% ( $n = 426$ ) reported having experienced at least one traumatic event.

### Prevalence rates of somatisation, depression and post-traumatic stress disorder

Due to differences in the distribution of country of origin between participants and non-participants (see Table 1), non-response weights by country of origin were applied when calculating the prevalence rates of somatisation, depression and PTSD. In Table 2, weighted and unweighted prevalence rates are reported for the entire sample as well as for the subsample assessed within the first 7 days, in each case stratified by sex. Overall, there were no substantial differences between weighted and unweighted prevalence rates and minimal differences due to the time of assessment. Using established cut-off scores for the different instruments, weighted prevalence rates of 31% were calculated for somatisation (44.1% in female and 23.9% in male participants;  $\chi^2(11\ 122) = 39.14$ ,  $p < 0.01$ ), 21.7% for depression (22.1% in female and 21.5% in male participants) and 34.9% for PTSD (37.2% for females and 33.9% for males). Using diagnostic algorithms according to the DSM-5, major depression was identified in 10.3% (9.4% in females and 10.4% in males), ODS in 17.6% (19.5% in females and 16.8% in males) and PTSD in 28.2% of the study sample with higher rates observed among female participants (34 v. 25.6%;  $\chi^2(11\ 126) = 8.32$ ,  $p < 0.01$ ).

In addition, weighted and unweighted prevalence rates for somatisation, depression and PTSD were calculated stratified by sex and age groups (18–30 v. >30 years). The results are shown in Table 3. All in all, with the exception of somatisation rates (28.7 v. 34.9%;  $\chi^2(11\ 123) = 4.77$ ,  $p < 0.05$ ), no differences were found between the age groups 18–30 and >30 years.

Finally, 49.7% of the study sample (59.7% female and 45.4% male participants) screened positive for at least one of the mental disorders assessed in the study according to the cut-off scores for the SSS-8, PHQ-9 and PCL-5. The comorbidity patterns of

**Table 1.** Sociodemographic and flight-related characteristics

|                                       | Participants<br><i>N</i> = 502 | Non-participants<br><i>N</i> = 814 <sup>1</sup> | $\chi^2$ | Total<br><i>N</i> = 1316      |
|---------------------------------------|--------------------------------|---|----------|-------------------------------|
| Age                                   |                                |   |          |                               |
| <i>M</i> /s.d./range                  | 29.73/8.79/18–70               | 29.48/10.5/18–90 <sup>2</sup>                   |          | 29.55/9.88/18–90 <sup>3</sup> |
| 18–29 years                           | 293 (58.3%)                    | 504 (62.1%)                                     | 3.324    | 797 (60.7%)                   |
| 30–39 years                           | 142 (28.3%)                    | 200 (24.6%)                                     |          | 342 (26%)                     |
| 40–49 years                           | 44 (8.8%)                      | 62 (7.6%)                                       |          | 106 (8.1%)                    |
| >50 years                             | 23 (4.6%)                      | 46 (5.7%)                                       |          | 69 (5.2%)                     |
| Sex                                   |                                |   |          |                               |
| Male                                  | 348 (69.3%)                    | 550 (67.6%)                                     | 0.441    | 898 (68.2%)                   |
| Female                                | 154 (30.6%)                    | 264 (32.4%)                                     |          | 418 (31.8%)                   |
| Country of origin                     |                                |   |          |                               |
| Cameroon                              | 92 (18.3%)                     | 60 (7.4%)                                       | 172.832* | 152 (11.6%)                   |
| Eritrea                               | 41 (8.2%)                      | 171 (21%)                                       |          | 212 (16.1%)                   |
| Iraq                                  | 23 (4.6%)                      | 40 (4.9%)                                       |          | 63 (4.8%)                     |
| Nigeria                               | 38 (7.6%)                      | 36 (4.4%)                                       |          | 74 (5.6%)                     |
| Syria                                 | 52 (10.4%)                     | 69 (8.5%)                                       |          | 121 (9.2%)                    |
| Turkey                                | 43 (8.6%)                      | 44 (5.4%)                                       |          | 87 (6.6%)                     |
| Venezuela                             | 85 (16.9%)                     | 28 (3.4%)                                       |          | 113 (8.6%)                    |
| Other <sup>3</sup>                    | 128 (25.4%)                    | 366 (45%)                                       |          | 494 (37.5%)                   |
| Years of schooling                    |                                |   |          |                               |
| <i>M</i> /s.d./range                  | 10.6/3.78/0–15                 |   |          |                               |
| University degree <sup>4</sup>        |                                |   |          |                               |
| Yes                                   | 259 (51.9%)                    |   |          |                               |
| No                                    | 240 (48.1%)                    |   |          |                               |
| Last occupational status <sup>5</sup> |                                |   |          |                               |
| Employed                              | 107 (21.4%)                    |   |          |                               |
| In retirement                         | 4 (0.8%)                       |   |          |                               |
| Military service                      | 23 (4.6%)                      |   |          |                               |
| Self-employed                         | 121 (24.2%)                    |   |          |                               |
| Studies or training                   | 108 (21.6%)                    |   |          |                               |
| No employment                         | 61 (12.2%)                     |   |          |                               |
| Other                                 | 77 (15.4%)                     |   |          |                               |
| Marital status <sup>5</sup>           |                                |   |          |                               |
| Single                                | 290 (57.9%)                    |   |          |                               |
| Married                               | 180 (35.9%)                    |   |          |                               |
| Divorced                              | 21 (4.2%)                      |   |          |                               |
| Widowed                               | 10 (2%)                        |   |          |                               |
| Partnership <sup>5</sup>              |                                |   |          |                               |
| Yes                                   | 186 (37.1%)                    |   |          |                               |
| No                                    | 315 (62.9%)                    |   |          |                               |
| Children <sup>5</sup>                 |                                |   |          |                               |
| Yes                                   | 201 (40.1%)                    |   |          |                               |
| No                                    | 300 (59.9%)                    |   |          |                               |

(Continued)

Table 1. (Continued.)

|  | Participants<br>N = 502 | Non-participants<br>N = 814 <sup>1</sup> | $\chi^2$ | Total<br>N = 1316 |
|--|-------------------------|--|----------|-------------------|
| Flight duration in month                     |                         |  |          |                   |
| M/s.d./range                                 | 7.4/11.29/0–156         |  |          |                   |
| Accompaniment during the flight <sup>5</sup> |                         |  |          |                   |
| Alone  | 224 (44.7%)             |  |          |                   |
| Strangers                                    | 127 (25.3%)             |  |          |                   |
| Friends                                      | 50 (10%)                |  |          |                   |
| Family members                               | 100 (20%)               |  |          |                   |
| Information about family <sup>5</sup>        |                         |  |          |                   |
| Yes  | 266 (53.1%)             |  |          |                   |
| No   | 235 (46.9%)             |  |          |                   |
| Information about friends <sup>4</sup>       |                         |  |          |                   |
| Yes  | 186 (37.3%)             |  |          |                   |
| No   | 313 (62.7%)             |  |          |                   |

\* $p < 0.001$ ; <sup>1</sup>including N = 67 pilot study; <sup>2</sup>N = 812; <sup>3</sup>N = 1314; <sup>4</sup>N = 499; <sup>5</sup>N = 501.

aCountry of origin other (N, total sample): Afghanistan (25), Albania (6), Algeria (9), Armenia (14), Azerbaijan (1), Belarus (1), Colombia (1), Côte d'Ivoire (1), Czech Republic (1), Ethiopia (50), Gambia (3), Ghana (6), Georgia (76), Guinea (3), India (19), Iran (10), Jordan (2), Kosovo (2), Kuwait (2), Lebanon (14), Libya (45), Macedonia (2), Morocco (9), Mozambique (1), Myanmar (12), Niger (1), Palestine (19), Pakistan (25), Russian Federation (28), Senegal (2), Serbia (6), Somalia (52), Sri Lanka (1), Tajikistan (1), Togo (1), Tunisia (18), Ukraine (1), Vietnam (4), Yemen (2), stateless (16).

somatisation, depression and PTSD in all possible combinations are shown in Fig. 3.

## Discussion

In the present study, prevalence rates for PTSD, depression and somatisation were assessed in refugees who had recently arrived in Germany. Due to detected differences between participants and non-participants with respect to the country of origin, both unweighted and weighted prevalence rates were presented using an epidemiological approach. In total, clinically relevant somatisation was found in 31%, depression in 21.7% and PTSD in 34.9% of the participants. According to the established cut-off scores of the instruments used in the present study, about half of the respondents (49.7%) screened positive for at least one of the mental disorders we investigated. In addition, prevalence rates of major depression, ODS and PTSD as defined by the DSM-5 were found to be 10.3% (major depression), 17.6% (ODS) and 28.2% (PTSD). At this point, the findings are in line with previous research that has observed very high prevalence rates of PTSD and depression among various refugee populations (Steel *et al.*, 2017; Tingshög *et al.*, 2017), despite the fact that the rates detected in the present study tended to be somewhat lower (e.g. 47% of PTSD in Steel *et al.* (2017) or 40.2% of depression in Tingshög *et al.* (2017)). Looking at the sociodemographic characteristics of the sample, e.g. relatively high level of education reported by the participants, further analyses are needed that address possible differences to the general refugee population in Germany. However, to the best of our knowledge, only a few studies are currently available having used a similar methodology as the present study, a limit which makes it difficult to compare our findings with those of others (Giacco *et al.*, 2018). Moreover, no conclusive statement can be made about somatisation since, to the best of our knowledge, no previous studies have reported on that. When interpreting findings and drawing conclusions, special attention should be

paid to the detected comorbidity patterns; in numerous studies, the high comorbidity between PTSD and depression in refugees has been reported as well as some findings which indicate higher levels of chronic pain resulting from psychological distress and/or trauma (Rohlf *et al.*, 2014; Giacco *et al.*, 2018). In light of this, overlapping symptoms and comorbid mental disorders caused by significant traumatic events experienced before and/or during flight seem likely; 85.5% of participants were exposed to at least one traumatic event, and 75.7% were exposed to interpersonal traumatic events, factors known to increase the probability of a mental disorder developing.

Although the present study has some major strengths – (1) epidemiological approach with available information about the entire population and basic characteristics of the non-responders to test for possible selection bias, (2) assessment of recently arrived refugees, considering the time frame of symptom burden (previous 7 days, previous 14 days, previous 4 weeks) leading to a rather homogenous sample with respect to exposure to post-migratory risk factors, (3) application of standardised instruments being translated and back-translated into 11 different languages, enabling refugees from over 30 different countries to take part in the study, and (4) assessment of somatisation, something which has not been systematically investigated in a comparable population before – there are some factors that limit how our results can be interpreted and consequently illuminate some important implications for future research. First, the prevalence rates detected in the present study are based on a cross-sectional investigation. In the future, longitudinal studies should be conducted to investigate and understand the trajectories of trauma-related mental health outcomes in refugees (e.g. remission rates and chronicity as well as the associated risk and protective factors). Although our study provides robust information about the prevalence of the most common mental disorders in recently arrived refugees, longitudinal investigations could inform future prevention and intervention strategies more precisely. In addition,

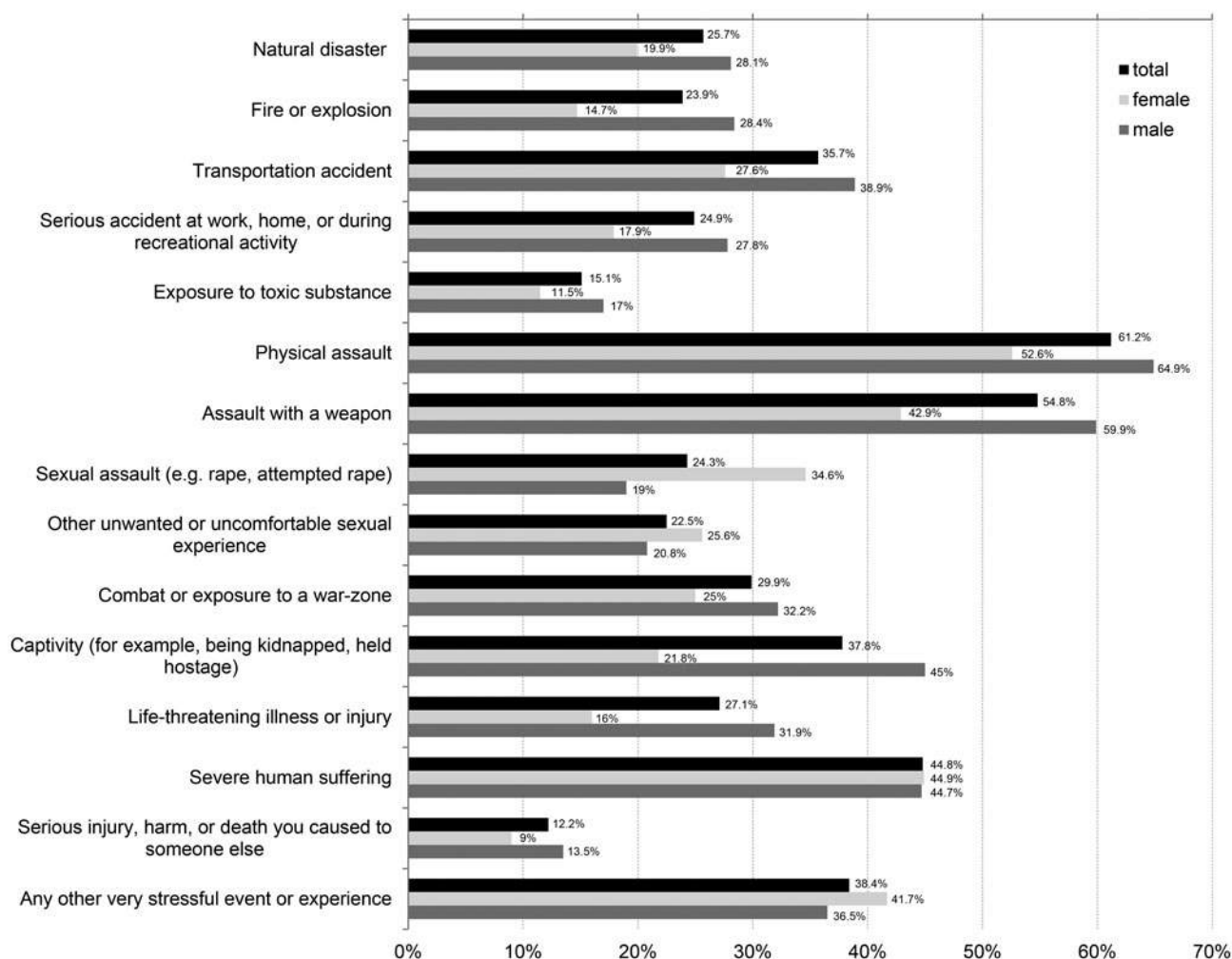


Fig. 2. Prevalence of traumatic events.

the present study focuses on PTSD, depression and somatisation only, although increased prevalence rates of other mental disorders (e.g. anxiety disorders, substance use disorders or schizophrenia and other psychotic disorders) have been reported in different studies in refugee populations (Giacco *et al.*, 2018). Second, due to the heterogeneity of refugee populations, both with regard to their countries of origin as well as with regard to the receiving countries and the conditions provided there, international collaborative research is needed in the future. So far, epidemiologically robust research that has been done on mental health in refugees has been conducted focusing almost solely on refugees residing in Western countries. The vast majority of refugees worldwide however are located either within their countries of origin or in bordering regions. In light of this fact, the generalisability of the detected prevalence rates is compromised, despite the methodological strengths of the present study. Considering the sociodemographic and flight-related characteristics of the study sample, the findings provide prevalence rates on a certain wave of refugees that reflect political crises and/or armed conflicts in specific countries (e.g. subgroups from Cameroon, Syria or Venezuela) on the one hand and possible selection bias due to the federal regulation on allocation of refugees within Germany on the other hand. Third, as no assessment of medical physical

health was made, the detected rate of somatisation may be somehow affected. Finally, there is a general issue of measurement invariance, meaning the equivalence of a measured construct across different cultures, ethnic groups and/or language versions of instruments. The debate about cross-cultural research has long focused on the importance of functional equivalence or the comparability of validity coefficients or optimal cut-off scores Chen (2008). The development of measurement invariance tests and advanced statistical tools has however instigated more rigorous tests of measurement invariance (Dere *et al.*, 2015). As a result, future research should focus on differences in mental health outcomes based on different cultural settings so that a robust frame for development and evaluation of culturally sensitive instruments can be built.

Despite the limitations and the implications for future research discussed and mentioned above, the results of the present study strongly suggest an urgent need to provide refugees with early professional psychosocial support and/or specific intervention programmes. Especially due to several barriers (e.g. language difficulties, lack of interpreters, financial regulations and access to care during the asylum procedure), the mental health care currently provided to refugees in Germany is insufficient (Bozorgmehr *et al.*, 2016). Of an estimated 379 848 refugees in

**Table 2.** Prevalence rates of somatisation, depression and post-traumatic stress disorder by gender and assessment time: weighted and unweighted data

|                         | Weighted by country of origin |          |          |           |              |          |          |           | Unweighted                   |                  |          |                  |                  |                  |          |                  |
|-------------------------|-------------------------------|----------|----------|-----------|--------------|----------|----------|-----------|------------------------------|------------------|----------|------------------|------------------|------------------|----------|------------------|
|                         | Assessed within first 7 days  |          |          |           | Total sample |          |          |           | Assessed within first 7 days |                  |          |                  | Total sample     |                  |          |                  |
|                         | Female (%)                    | Male (%) | $\chi^2$ | Total (%) | Female (%)   | Male (%) | $\chi^2$ | Total (%) | Female                       | Male             | $\chi^2$ | Total            | Female           | Male             | $\chi^2$ | Total            |
| <b>Somatisation</b>     |                               |          |          |           |              |          |          |           |                              |                  |          |                  |                  |                  |          |                  |
| SSS-8 cut-off > 11      | 46.3                          | 21.4     | 39.97**  | 29        | 44.1         | 25.3     | 39.14**  | 31        | 48.9%<br>N = 90              | 21.3%<br>N = 207 | 22.97**  | 29.6%<br>N = 297 | 46.1%<br>N = 154 | 24.8%<br>N = 347 | 22.53**  | 31.3%<br>N = 501 |
| <b>Depression</b>       |                               |          |          |           |              |          |          |           |                              |                  |          |                  |                  |                  |          |                  |
| MDD                     | 10.5                          | 9.9      | 0.06     | 10.1      | 9.4          | 10.7     | 0.43     | 10.3      | 12.2%<br>N = 90              | 10.1%<br>N = 207 | 0.28     | 10.8%<br>N = 297 | 11.8%<br>N = 153 | 10.1%<br>N = 347 | 0.32     | 10.6%<br>N = 500 |
| ODS                     | 21.6                          | 14.5     | 4.80*    | 16.6      | 19.5         | 16.8     | 1.20     | 17.6      | 17.8%<br>N = 90              | 13%<br>N = 207   | 1.13     | 14.5%<br>N = 297 | 18.3%<br>N = 153 | 16.4%<br>N = 347 | .26      | 17%<br>N = 500   |
| PHQ-9 cut-off > 15      | 23.2                          | 22.1     | 0.09     | 22.4      | 22.1         | 21.5     | 0.06     | 21.7      | 24.4%<br>N = 90              | 20.3%<br>N = 207 | 0.64     | 21.5%<br>N = 297 | 24.2%<br>N = 153 | 20.5%<br>N = 347 | 0.87     | 21.6%<br>N = 500 |
| <b>PTSD</b>             |                               |          |          |           |              |          |          |           |                              |                  |          |                  |                  |                  |          |                  |
| PTSD according to DSM-5 | 36.8                          | 23.7     | 11.45**  | 27.7      | 34           | 25.6     | 8.32**   | 28.2      | 36.7%<br>N = 90              | 25.1%<br>N = 207 | 4.09*    | 28.6%<br>N = 297 | 35.1%<br>N = 149 | 25.6%<br>N = 347 | 4.72*    | 28.5%<br>N = 502 |
| PCL-5 cut-off > 33      | 39.8                          | 30.3     | 5.27*    | 33.2      | 37.2         | 33.9     | 1.06     | 34.9      | 39.8%<br>N = 88              | 30.1%<br>N = 206 | 2.61     | 33%<br>N = 294   | 38.9%<br>N = 154 | 32.9%<br>N = 348 | 1.70     | 34.7%<br>N = 496 |

\* $p < 0.05$ ; \*\* $p < 0.01$ .

**Table 3.** Prevalence rates of somatisation, depression and post-traumatic stress disorder by gender and age group: weighted and unweighted data

|                         | Weighted by country of origin |               |                 |               |                 |               |          | Unweighted             |                        |                         |                         |                         |                         |          |
|-------------------------|-------------------------------|---------------|-----------------|---------------|-----------------|---------------|----------|------------------------|------------------------|-------------------------|-------------------------|-------------------------|-------------------------|----------|
|                         | Female                        |               | Male            |               | Total           |               | $\chi^2$ | Female                 |                        | Male                    |                         | Total                   |                         | $\chi^2$ |
|                         | 18–30 years (%)               | >30 years (%) | 18–30 years (%) | >30 years (%) | 18–30 years (%) | >30 years (%) |          | 18–30 years            | >30 years              | 18–30 years             | >30 years               | 18–30 years             | >30 years               |          |
| Somatisation            |                               |               |                 |               |                 |               |          |                        |                        |                         |                         |                         |                         |          |
| SSS-8 cut-off > 11      | 39.9                          | 49.3          | 24.4            | 27.1          | 28.7            | 34.9          | 4.77*    | 39.8%<br><i>N</i> = 83 | 53.5%<br><i>N</i> = 71 | 25.5%<br><i>N</i> = 208 | 23.7%<br><i>N</i> = 139 | 29.6%<br><i>N</i> = 291 | 33.8%<br><i>N</i> = 210 | 1.03     |
| Depression              |                               |               |                 |               |                 |               |          |                        |                        |                         |                         |                         |                         |          |
| MDD                     | 6.4                           | 12.7          | 10.8            | 10.9          | 9.6             | 11.5          | 1.05     | 8.4%<br><i>N</i> = 83  | 15.7%<br><i>N</i> = 70 | 10.6%<br><i>N</i> = 208 | 9.4%<br><i>N</i> = 139  | 10%<br><i>N</i> = 291   | 11.5%<br><i>N</i> = 209 | 0.29     |
| ODS                     | 19.7                          | 19.2          | 18.2            | 14.1          | 18.5            | 15.9          | 1.26     | 21.7%<br><i>N</i> = 83 | 14.3%<br><i>N</i> = 70 | 18.3%<br><i>N</i> = 208 | 13.7%<br><i>N</i> = 139 | 19.2%<br><i>N</i> = 291 | 13.9%<br><i>N</i> = 209 | 2.48     |
| PHQ-9 cut-off > 15      | 22.9                          | 21.2          | 18.7            | 26.4          | 19.8            | 24.7          | 3.70     | 26.5%<br><i>N</i> = 83 | 21.4%<br><i>N</i> = 70 | 19.7%<br><i>N</i> = 208 | 21.6%<br><i>N</i> = 139 | 21.6%<br><i>N</i> = 291 | 21.5%<br><i>N</i> = 209 | 0.001    |
| PTSD                    |                               |               |                 |               |                 |               |          |                        |                        |                         |                         |                         |                         |          |
| PTSD according to DSM-5 | 30.9                          | 38.2          | 26.3            | 24.4          | 27.6            | 29.2          | 0.36     | 31.3%<br><i>N</i> = 83 | 39.4%<br><i>N</i> = 71 | 27.9%<br><i>N</i> = 208 | 22.1%<br><i>N</i> = 140 | 28.9%<br><i>N</i> = 288 | 28%<br><i>N</i> = 208   | 0.05     |
| PCL-5 cut-off > 33      | 32.2                          | 42.2          | 33.7            | 34.3          | 33.7            | 36.8          | 1.09     | 34.6%<br><i>N</i> = 81 | 44.1%<br><i>N</i> = 68 | 33.8%<br><i>N</i> = 207 | 31.4%<br><i>N</i> = 140 | 34%<br><i>N</i> = 291   | 35.6%<br><i>N</i> = 211 | 0.13     |

\**p* < 0.05.

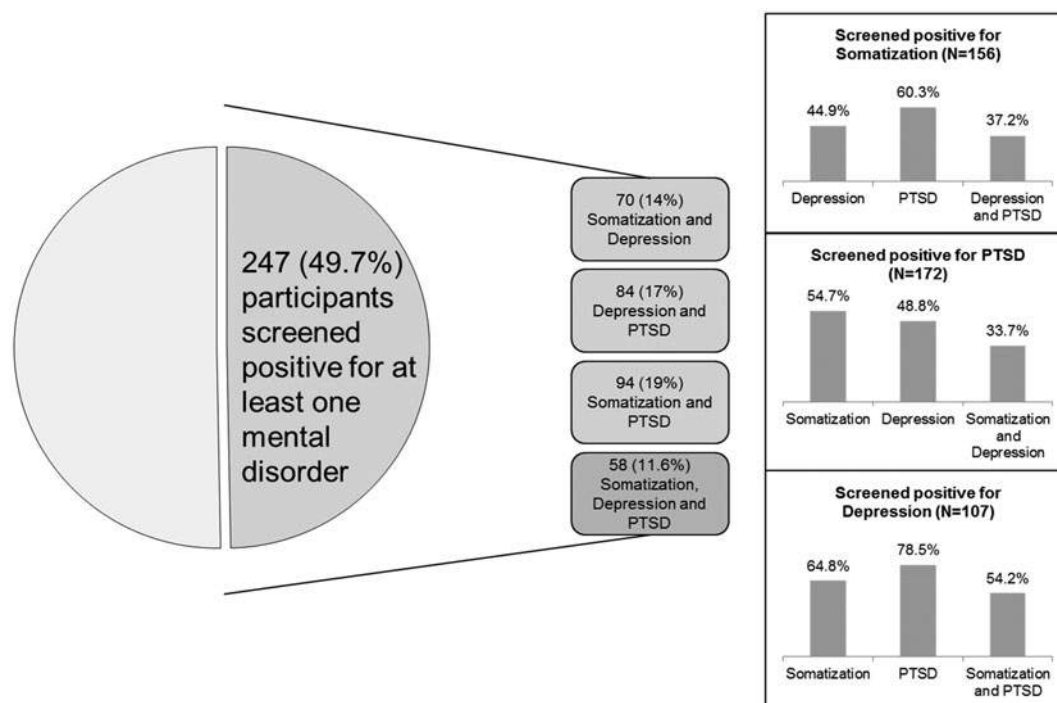


Fig. 3. Comorbidity patterns of PTSD, depression and somatisation in the study sample ( $N = 497$ ).

need of mental health care in 2015, only about 5% received some treatment in Germany (Baff, 2016). Untreated mental health problems can lead to a chronic course resulting in social withdrawal and lack of ability to integrate. Besides the associated problems for those individuals suffering from mental disorders and their families, restricted access to mental health care can also be associated with increased costs of care (Bozorgmehr and Razum, 2015). In light of this, the results of the present study underline the need for early assessment/screening of common mental disorders in refugees due to (1) possible reduction of mental symptoms at an early stage, (2) inform provision of health care for subgroups of urgent need, (3) support access to specialised mental health care and thus (4) reducing the risk of chronic trajectories of mental disorders. Key players in health care systems and among the political authorities of receiving countries need to be aware of the results presented here and their strong implications concerning the necessity of establishing early intervention programmes for refugees suffering from psychological distress. From our point of view, high-income Western countries currently have a specific responsibility to fulfil their humanitarian obligations by ensuring appropriate health care for the refugees they host – the sooner the better.

### Availability of data and materials

The data will not be shared due to ongoing analyses.

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**Conflict of interest.** None.

**Ethical standards.** The study was approved by the Ethics Committee of the Medical Faculty of the University of Leipzig. All procedures performed in the studies were in accordance with the ethical standards of the institutional and/

or national research committee and with the 1964 Helsinki declaration and its later amendments. Informed consent was obtained from all individual participants included in the study. All adult participants provided their written informed consent to participate in this study and for the data to be published.

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RESEARCH

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# Factors predicting symptoms of somatization, depression, anxiety, post-traumatic stress disorder, self-rated mental and physical health among recently arrived refugees in Germany

Yuriy Nesterko\*, David Jäckle, Michael Friedrich, Laura Holzapfel and Heide Glaesmer

## Abstract

**Background:** There is a large body of research indicating increased prevalence rates of mental disorders among refugees. However, the vast majority of the evidence available on risk factors for mental disorders among refugees focuses on post-migration stressors and was collected in surveys that were conducted months and sometimes years after the participants had resettled.

**Objective:** In the present study, we analyze socio-demographic and flight-related characteristics as predictors for symptoms of somatization, depression, anxiety, and post-traumatic stress disorder as well as self-rated mental and physical health in recently arrived refugees (up to 4 weeks after arrival) in Germany.

**Methods:** The study was conducted in a reception facility for asylum-seekers in Leipzig, Germany. A total of 1316 adult individuals arrived at the facility during the survey period; 502 took part in the study. The questionnaire (self-administrated) included socio-demographic and flight-related questions as well as standardized instruments for assessing PTSD (PCL-5), depression (PHQ-9), anxiety (HSCL-10) and somatization (SSS-8). Linear regression models were conducted to predict symptoms of different mental disorders as well as self-rated mental and physical health.

**Results:** Lack of information about family members and subjective need for health care were found to be significantly associated with symptoms of depression, somatization, anxiety, and PTSD. Better self-rated mental health was significantly associated with partnership, childlessness, lower number of traumatic events, and having information about family left behind. No associations were found between flight-related factors and symptom burden.

**Conclusions:** The results provide initial methodologically robust insights for research and health care services, which should aid in better identifying newly arrived refugees in need of psychosocial care. Furthermore, the results might help answering the question of how to provide health care for highly vulnerable groups within refugee populations regardless their residential status.

**Keywords:** Refugee, PTSD, Depression, Anxiety, Somatization, Asylum

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## Background

The number of people who have been forcibly displaced by armed conflicts, political instability and/or economic crises in different parts of the world has been growing for years. In total, millions of people have left their homes and sought asylum in neighboring countries, a relatively small proportion have arrived in high-income Western countries [1]. In light of this, there is no doubt that the wide spectrum of different adverse and/or stressful events most refugees experience before and while leaving their homes is conducive to the development of mental disorders [2], reflecting in many cases high level of human rights violations across the globe. Available evidence on mental health in refugees generally focuses on (I) prevalence rates of different mental disorders, (II) risk factors for developing mental disorders with respect to the process of fleeing, and (III) development and/or evaluation of treatment programs for those in need [3]. In the present study, we focus mainly on possible risk factors for mental distress in newly arrived refugees in Germany considering symptom burden as well as prevalence rates for different mental disorders, reported in detail elsewhere [4].

In general, there is a large body of evidence indicating significantly increased prevalence rates of mental disorders among refugees compared to both native and other migrant populations. Of these disorders, post-traumatic stress disorder (PTSD) and depression have been the most frequently investigated [5–7]. However, a wide range of prevalence rates for PTSD and depression in different refugee populations has been reported during the last decade (e.g. 0–99% for PTSD and 3–85% for depression [8]). Studies reporting robust epidemiological data on mental health among recent refugee populations are still rare [3]. For example, in a 2017 population-based survey by Tinghög et al. [9], weighted prevalence rates of 40.2% for depression, 31.8% for anxiety, and 29.9% for PTSD were reported in Syrian refugees ( $N=1215$ ) who had resettled in Sweden; Steel et al. [10] reported prevalence rates of 47% for PTSD and 20% for depression in refugees from predominantly Sub-Saharan Africa ( $N=420$ ), using stratified quota sampling based on Swedish census data. All in all, it can be assumed that about half of all refugees arriving in Western high-income countries suffer from at least one mental disorder [3, 4].

In contrast to research that have focused on prevalence rates, there are further studies that provide more evidence on specific risk factors for mental disorders. These are characterized however by a variety of methodological specifications, which ultimately hamper their comparability (e.g. sample size, sampling methods, selection bias, instruments used, time of assessment etc.). Nevertheless, it is still possible to break often

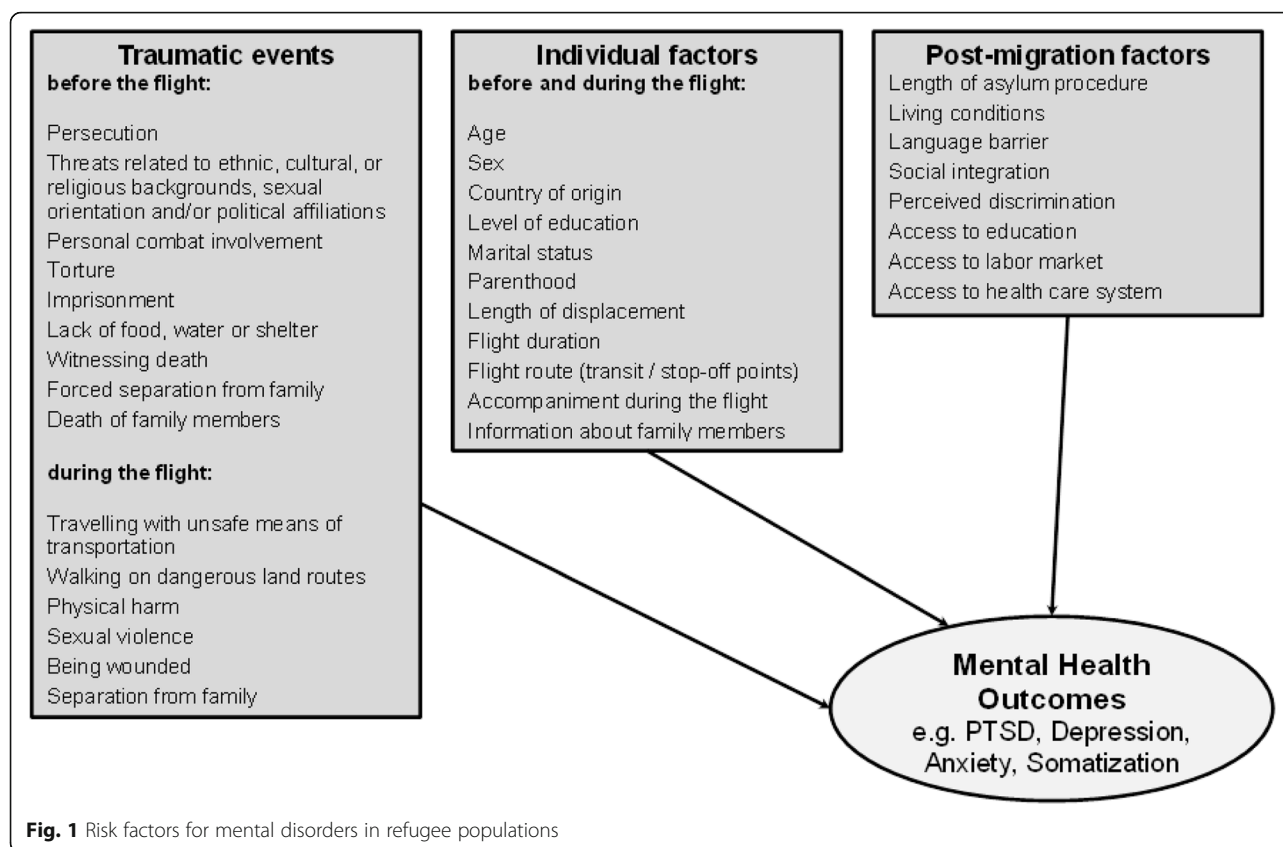
investigated risk factors for mental disorders among refugees into three main categories: (I) traumatic events experienced before or during the flight, (II) individual factors before and/or during the flight (e.g. socio-demographic characteristics, flight duration and/or length of displacement, accompaniment during the flight), and (III) post-migration experiences, as illustrated in Fig. 1 [3, 11–13].

As mentioned above, multiple potential traumas experienced before flight such as persecution, threats related to an individual's ethnic, cultural, or religious background, sexual orientation, and/or political affiliations, personal combat involvement, torture, imprisonment, lack of food, water or shelter, witnessing death, forced separation from family, and death of family members are the most common reasons people flee their home country. Moreover, numerous severe traumatic experiences refugees are likely to face while fleeing have been reported by previous research, e.g.: travelling in unsafe means of transportation, walking on dangerous land routes, experiences of physical harm, sexual violence and exploitation, being wounded, being separated from family members, or witnessing the loss of loved ones. In many cases, these experiences are linked to human trafficking [6–8, 14].

In general, the higher the number of traumatic events a person experiences, the more vulnerable he or she is to developing mental disorders. Compared to non-interpersonal traumatic events, interpersonal traumatic events in particular are more likely to lead to a higher symptom burden [15] of more severe forms of PTSD [16] as well as depression [17]. Moreover, increased suicidality is reported in those affected by interpersonal trauma [18]. The impact of interpersonal traumatic events on mental health symptoms in refugees has been shown in numerous studies [19–21].

The individual factors '*age at arrival*' and '*sex*' have often been analyzed as possible predictors for mental health in different refugee populations. With respect to '*age at arrival*', there are inconsistent results. Some studies report better mental health in younger refugees [22–25], while other studies indicate no age-related differences [26] or clear evidence of age as an influential factor [14]. There are consistent reports indicating higher levels of symptom burden in female refugees that are linked with inherent differences between males and females in general [25, 27–30].

However, the vast majority of the evidence available on risk factors for mental disorders among refugees focuses on post-migration stressors and was collected in surveys that were conducted months and sometimes years after the participants had resettled. According to a recently published review by Giacco, Laxhman and Priebe [3], mental distress in refugees after resettlement



is positively associated with the length of their asylum procedure, poor living conditions, social isolation, unemployment, and acculturation difficulties that stand in the way of their successful integration and accessing mental health care in their host country (e.g. lack of knowledge about local health care systems, distrust in public organizations, and different beliefs about and consequently representations of psychological symptoms).

It is important to emphasize the necessity to see the differentiation between pre-, peri-, and post-migratory traumatic experiences as rather conceptual (e.g. [31]): The adverse events we mention might often be cross-categorical and long-term events interacting with each other. Moreover, the list of events in Fig. 1 is not exhaustive; especially due to post-migration stressors being investigated previously [32]. The present study focuses on potential risk factors for mental distress in newly arrived refugees (up to 4 weeks after arrival), considering the time frame of symptom burden (e.g. last 7 days, last 2 weeks and/or last 4 weeks) as linked to pre- and/or peri-migration experiences and thus not including long-term post-migration stressors in our analyses.

To the best of our knowledge, the present study is the first to provide robust epidemiological data (for more detailed information on the study protocol refer to [4]) with a focus on socio-demographic and flight-related

characteristics as possible predictors for different mental disorders among recently arrived refugees. At the same time, it is worth noting that only studying refugees who have just arrived could result in the impact of post-migration stressors going un- or underreported. Furthermore, there are no methodically sound studies available that report on self-rated health status among refugees. Especially considering the possible development of psychosocial and/or psychotherapeutic interventions, data on subjective health in different groups of refugees right after arrival are an important and necessary source of information for both clinicians and policy makers.

Therefore, the rationale of the present study was to analyze socio-demographic and flight-related characteristics as possible predictors for symptoms of somatization, depression, anxiety, and post-traumatic stress disorder as well as self-rated mental and physical health in recently arrived refugees in Germany based on survey data assessed using an epidemiological approach.

## Methods

### Data collection and study sample

This study was conducted between May 2017 and June 2018 in a primary reception facility operated by the Federal State of Saxony for asylum-seekers in Leipzig, Germany. The study's target population consisted of

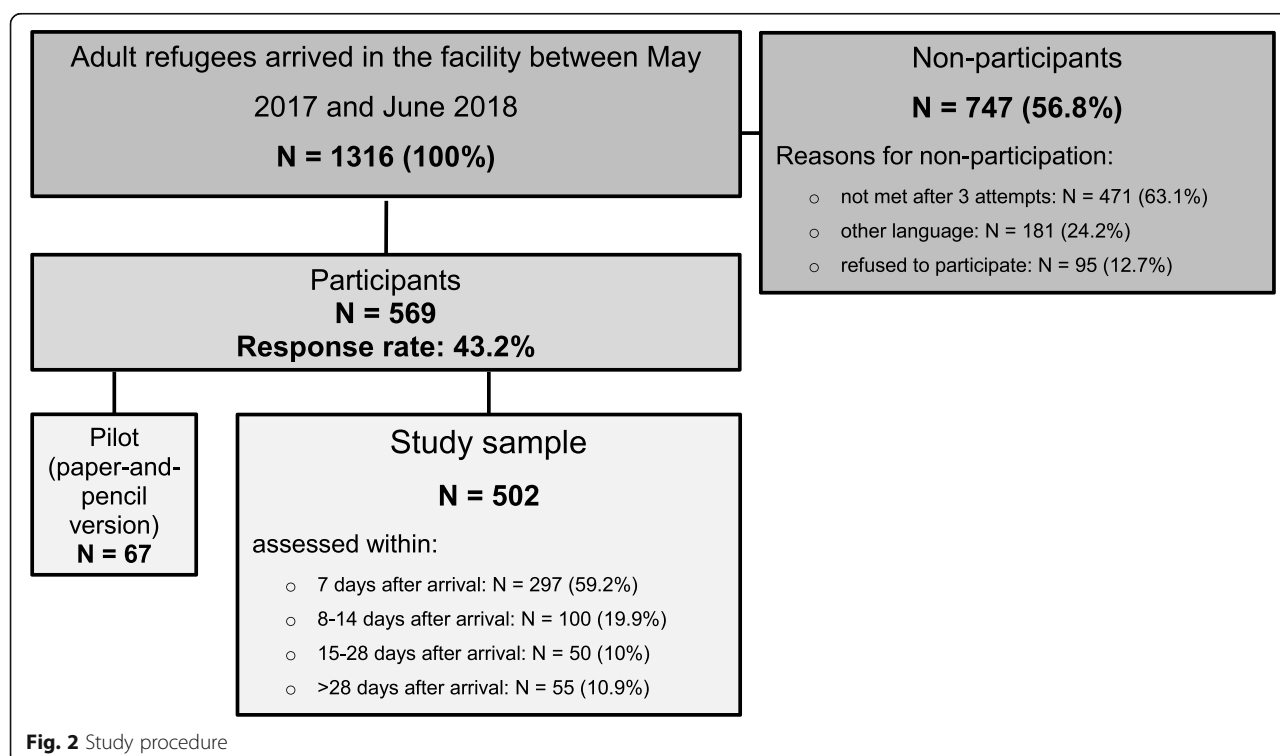
adult individuals ( $\geq 18$  years) residing in the facility during the survey period, with no additional exclusion criteria defined for the recruitment procedure. However, during the recruitment language skills in the following languages become criteria of inclusion: Albanian, Arabic, English, Farsi, French, German, Kurdish, Russian, Spanish, Tigrinya, Turkish and Urdu.

Usually refugees arriving in the facility apply for asylum within the first 2 weeks. Thus, formally all participants of the present study will become asylum-seekers, but due to the date of participation some of them were not asylum-seekers yet. We use the term ‘refugees’ to include all participants. Figure 2 gives an overview of the study procedure.

Based on the facility’s register of all newly arrived residents, potential study participants were approached by members of the project staff in their residential unit, informed about the study objectives as well as data protection policy, and, in the event that they were willing to participate, introduced to the survey procedure. Between May 1st and May 15th of 2017, the participants were asked to fill out a paper version of the questionnaire (pilot study;  $N = 67$ ) to prove the usability of the instruments; after May 17th of 2017, the participants filled out a tablet-based questionnaire in their native language. After information sheets were handed out and consent to participate was given, the participants responded to the questionnaire by themselves (time needed: approximately 45 min). Project staff was available to answer

questions when necessary covering some languages spoken by the residents (e.g. Arabic, Farsi, English, French, Russian, Spanish and Turkish). The assessments took place three times a week, on Mondays, Wednesdays, and Thursdays between 10 a.m. and 1 p.m. Data were electronically transferred and administered consecutively to the ongoing data collection using LimeSurvey Offline-App for android systems. Data control and consistency checks were carried out at monthly intervals and a simple plausibility check was carried out immediately after the entry of a maximum of 30 data sets. Data were stored in anonymous form on a computer at the University of Leipzig network in accordance with the data protection guidelines.

A total of 1316 adult refugees were newly accommodated in the primary reception facility during the survey period, 569 of whom took part in the study. Of these, 67 individuals filled out the paper version of the questionnaire (pilot study) and 502 (study sample) responded via tablet (response rate 43.2%). Within these, about 60% ( $n = 297$ ) were assessed during the first 7 days after the arrival, another 19.9% ( $n = 100$ ) during the second week (between 8 and 14 days) after the arrival, 10% ( $n = 50$ ) during the period of 15–28 days after the arrival, and finally 10.9% ( $n = 55$ ) > 28 days after the arrival. The majority of non-participants (63.1%;  $n = 417$ ) were residents who could not be contacted after three attempts to visit them, 24.2% ( $n = 181$ ) could not be included due to their native language, and 95 individuals (12.7%) refused



participation. Data on all non-participants' age, sex, and country of origin were recorded to identify possible selection bias. Detailed information on age, sex and country of origin of non-participants as well as calculated non-response weights were published previously [4].

The study was approved by the Ethics Committee of the Medical Faculty of the University of Leipzig (446/16-ek). All study procedures were conducted in accordance with the Helsinki Declaration and its later amendments or comparable ethical standards. Written informed consent was obtained from all study participants.

### Measures

The questionnaire used in the present study included socio-demographic and flight-related questions, standardized instruments for assessing PTSD, symptoms of depression, anxiety and somatization as well as questions for assessing self-rated mental and physical health. The German version of the questionnaire (both paper and pencil as well as tablet-version) was translated and back-translated into 10 different languages (Albanian, Arabic, English, Farsi, French, Kurdish, Russian, Spanish, Turkish and Urdu) according to the proportion of refugees arrived in Germany during the year preceding the survey by a professional translation agency (mt-g medical translation GmbH) specialized in medical translations. The Tigrinya version of the questionnaire was translated and back-translated by the same agency based on the English version of the questionnaire. All back-translations were reviewed by the first and last author and, when necessary, returned to the agency for final modification/adjustment.

### Sociodemographic and flight-related characteristics

Participants were asked to provide information about their age, sex, country of origin, marital status, number of children, level of education, last occupation, duration of their flight, accompaniment during the flight, and current access to information about family members who were left behind, as well as present need for support and/or assistance due to the asylum procedure, family reunion request, and/or health care system. Using the global peace index [33], which indicates the relative level of peacefulness in specific nations and regions, a metric variable was built based on participants' countries of origin in order to reflect possible impacts of the conditions in each country of origin on their levels of mental disorder symptom burden.

### Traumatic events

Traumatic events were assessed using the DSM-5 Life Events Checklist (LEC-5) for assessing trauma exposure [34]. The LEC-5 is comprised of 16 items, which address different types of events that can potentially result in

PTSD or distress. The following response categories are given for each type of event: '1' happened to me, '2' witnessed it, '3' learned about it, '4' part of my job, '5' not sure, and '6' doesn't apply. The number of events reported by participants as 'happened to me' was summed up to the category number of traumatic events. In addition, the category experience of at least one interpersonal traumatic event was calculated by considering the events – physical assault, assault with a weapon, sexual assault, other unwanted sexual experience, captivity and serious injury, harm or death being caused by the participant to someone else – being answered as 'happened to me'. In the analysis presented here, we decided to consider the category "happened to me" only to focus on the very strict definition of trauma exposure.

### Post-traumatic stress disorder

PTSD was assessed with the PCL-5 (PTSD-Checklist), a 20-item self-report instrument, which assesses symptoms of PTSD as defined by the DSM-5 [35]. The 20 items of the PCL-5 reflect the frequency with which respondents have experienced the item in question rated on a 5-point Likert-scale ranging from 'not at all' to 'extremely'. A total score (0–80) can be obtained by summing up the scores for each of the 20 items. A score at or above the cut-off score of 33 indicates the presence of PTSD in the respondent. Cronbach's  $\alpha$  in the present study was  $\alpha = .95$  (.93 to .97. for the different language versions).

### Anxiety

Symptoms of anxiety were assessed with the anxiety-subscale of the Hopkins Symptom Checklist (HSCL-25 [36]). The HSCL-25 anxiety-subscale consists of 10 items assessing symptoms experienced within the last week on a 4-point Likert-scale, anchored 'not at all', 'a little', 'quite a bit', and 'extremely'. As recommended by several studies that have used the HSCL-25 to assess anxiety in different refugee populations [37], individuals with a mean score of 1.75 or higher were classified as suffering from clinically relevant symptoms of anxiety. The internal consistency of anxiety-subscale scores across the study was  $\alpha = .91$  (language versions range: .89–.94).

### Depression

Symptoms of depression were assessed with the Patient Health Questionnaire-9 (PHQ-9 [38]). The PHQ-9 contains nine items rated on a scale of 0 ('not at all') to 3 ('nearly every day') which reflect the frequency with which participants have experienced the symptom in question within the previous 14 days. Based on the total sum (0–27), symptom severity can be divided into the categories 'none-minimal' (0–4), 'mild' (5–9), 'moderate'

(10–14), ‘moderately severe’ (15–19), and ‘severe’ (20–27) depression. Participants with a sum score of  $> 14$  were classified as having a depressive disorder. Cronbach’s  $\alpha$  in the present study was  $\alpha = .84$  (.70 to .89 for the different language versions).

### **Somatization**

Somatic symptoms were assessed with the Somatic Symptom Scale-8 (SSS-8 [39]). The SSS-8 is a shortened version of the PHQ-15 questionnaire developed for DSM-5 field trials. Each item can be rated on a 5-point Likert-Scale from ‘not at all’ to ‘very much’ referring to the previous 7 days. The total scores therefore range from 0 to 32, and are subdivided into five categories of severity: ‘none to minimal’ (0–3), ‘low’ (4–7), ‘medium’ (8–11), ‘high’ (12–15), and ‘very high’ (16–32) somatic symptom burden. A cut-off-score of  $> 11$  was used for the present study. The internal consistency was  $\alpha = .84$  (.77 to .93 for the different language versions).

### **Self-rated mental and physical health**

Participants were asked to rate their current mental and physical health on two visual analog scales ranging each from 0 to 100, on which higher scores indicate better health status.

### **Statistical analyses**

Statistical analyses were performed using the IBM SPSS statistical package, version 24.0 for Windows. Descriptive statistics were used to characterize the study sample. Six linear regression analyses using the Enter method were performed to look for potential predictors of somatization, anxiety, depression, PTSD, and self-rated mental and physical health symptoms among socio-demographic and flight-related variables. For all six models the following potential predictor variables were analyzed based on the conceptual framework presented above: (I) socio-demographic characteristics (age, sex, university degree, partnership, parenthood) and (II) flight-related characteristics (global peace index, flight duration, accompaniment during the flight, number of traumatic events, experience of at least one interpersonal traumatic event, current information about family members left behind, need for assistance with asylum application procedures, family reunion request and health care system).

## **Results**

### **Sociodemographic, flight-related and mental health characteristics**

Table 1 gives an overview of the study sample’s socio-demographic and flight-related characteristics. The mean age of the participants in the present study was 29.73 (SD = 8.79) years. The majority of the participants were male ( $n = 348$ , 69.3%). The largest groups were

participants from Cameroon ( $n = 92$ , 18.3%), Venezuela ( $n = 85$ , 16.9%), and Syria ( $n = 52$ , 10.4%); all in all, participants from over 30 different countries took part in the survey. A bit more than half of the participants ( $n = 259$ , 51.9%) reported having a university degree. A total of 290 (57.9%) participants were single, 35.9% ( $n = 180$ ) were married, 4.2% ( $n = 21$ ) divorced, and 2% ( $n = 10$ ) widowed, with 186 (37.1%) participants reporting that they have a partner and 201 (40.1%) that they have children. The mean flight duration was 1.9 years (SD = 3.2), with 44.7% ( $n = 224$ ) of the participants reporting that they had been alone while fleeing. A total of 235 (46.9%) participants reported that they currently have no access to information about their family members. More than two-thirds ( $n = 349$ , 69.5%) of the participants expressed that they needed assistance in navigating the asylum application procedure, 141 (28.1%) said they needed help related to family reunion requests, and 196 (39%) reported needing help navigating the health care system.

Prevalence rates of somatization, depression, anxiety, and PTSD according to cut-off scores as well as mean scores for self-rated mental and physical health in total and stratified by sex are displayed in Table 2. Results on prevalence and comorbidity of somatization, depression and PTBS as well as traumatic events experienced by participants of this sample are described in more detail in Nesterko et al. [4].

### **Predicting symptoms of somatization, depression, anxiety, and PTSD**

Four separate linear regression analyses were performed to test which socio-demographic as well as flight-related factors are associated with symptoms of somatization, depression, anxiety, and PTSD (Table 3). Lack of current information about family members left behind and a subjective need for health care were found to be significant predictors for symptoms of depression ( $\beta = .17$ ,  $p < .001$ ;  $\beta = .15$ ,  $p < .01$ ), somatization ( $\beta = .13$ ,  $p < .001$ ;  $\beta = .24$ ,  $p < .001$ ), anxiety ( $\beta = .17$ ,  $p < .001$ ;  $\beta = .16$ ,  $p < .01$ ) and PTSD ( $\beta = .20$ ,  $p < .001$ ;  $\beta = .14$ ,  $p < .01$ ). Moreover, symptoms of somatization ( $\beta = -.19$ ,  $p < .001$ ), depression ( $\beta = -.10$ ,  $p < .05$ ), and anxiety ( $\beta = -.14$ ,  $p < .01$ ) were significantly associated with female sex. Being single was found to be a significant predictor for symptoms of depression ( $\beta = .10$ ,  $p < .05$ ). The number of different traumatic events experienced was significantly associated with symptoms of anxiety ( $\beta = .11$ ,  $p < .05$ ), and experiences of at least one interpersonal traumatic event were found to be a significant predictor for symptoms of PTSD ( $\beta = -.11$ ,  $p < .05$ ).

### **Predicting self-rated mental and physical health**

Finally, two separate linear regression analyses were conducted to test which factors are associated with self-

**Table 1** Sociodemographic and flight-related characteristics

|  | Participants<br><b>N</b> = 502 |
|--|--------------------------------|
| <b>Age</b>   |                                |
| M/SD/Range   | 29.73/8.79/18–70               |
| 18–29 years  | 293 (58.3%)                    |
| 30–39 years  | 142 (28.3%)                    |
| 40–49 years  | 44 (8.8%)                      |
| > 50 years   | 23 (4.6%)                      |
| <b>Sex</b>   |                                |
| male   | 348 (69.3%)                    |
| female   | 154 (30.6%)                    |
| <b>Country of origin</b>                           |                                |
| Cameroon   | 92 (18.3%)                     |
| Eritrea  | 41 (8.2%)                      |
| Iraq   | 23 (4.6%)                      |
| Nigeria  | 38 (7.6%)                      |
| Syria  | 52 (10.4%)                     |
| Turkey   | 43 (8.6%)                      |
| Venezuela  | 85 (16.9%)                     |
| other <sup>a</sup>                                 | 128 (25.4%)                    |
| <b>University degree<sup>1</sup></b>               |                                |
| yes  | 259 (51.9%)                    |
| no   | 240 (48.1%)                    |
| <b>Last occupational status<sup>2</sup></b>        |                                |
| employed   | 107 (21.4%)                    |
| in retirement                                      | 4 (0.8%)                       |
| military service                                   | 23 (4.6%)                      |
| self-employed                                      | 121 (24.2%)                    |
| studies or training                                | 108 (21.6%)                    |
| no employment                                      | 61 (12.2%)                     |
| other  | 77 (15.4%)                     |
| <b>Marital status<sup>2</sup></b>                  |                                |
| single   | 290 (57.9%)                    |
| married  | 180 (35.9%)                    |
| divorced   | 21 (4.2%)                      |
| widowed  | 10 (2%)                        |
| <b>Partnership<sup>2</sup></b>                     |                                |
| yes  | 186 (37.1%)                    |
| no   | 315 (62.9%)                    |
| <b>Parenthood<sup>2</sup></b>                      |                                |
| yes  | 201 (40.1%)                    |
| no   | 300 (59.9%)                    |
| <b>Flight duration in years</b>                    |                                |
| M/SD/Range   | 1.9/3.2/0–27                   |
| <b>Accompaniment during the flight<sup>2</sup></b> |                                |

**Table 1** Sociodemographic and flight-related characteristics (Continued)

|   | Participants<br><b>N</b> = 502 |
|---|--------------------------------|
| alone                                       | 224 (44.7%)                    |
| strangers                                   | 127 (25.3%)                    |
| friends                                     | 50 (10%)                       |
| family members                              | 100 (20%)                      |
| <b>Information about family<sup>2</sup></b> |                                |
| yes   | 266 (53.1%)                    |
| no  | 235 (46.9%)                    |
| <b>Support in Asylum Procedure</b>          |                                |
| yes   | 349 (69.5%)                    |
| no  | 153 (30.5%)                    |
| <b>Support in Family Reunion</b>            |                                |
| yes   | 141 (28.1%)                    |
| no  | 361 (71.9%)                    |
| <b>Support in Health Care System</b>        |                                |
| yes   | 196 (39%)                      |
| no  | 306 (61%)                      |

<sup>1</sup>N = 499; <sup>2</sup>N = 501; <sup>a</sup> Country of origin other (N): Afghanistan (6), Algeria (2), Armenia (2), Belarus (1), Colombia (1) Ethiopia (20), Ghana (3), Georgia (7), India (2), Iran (5), Jordan (2), Kosovo (1), Kuwait (1), Lebanon (7), Liberia (1), Libya (13), Morocco (3), Myanmar (3), Palestine (10), Pakistan (7), Russian Federation (9), Senegal (2), Somalia (7), Sri Lanka (1), Tunisia (4), Ukraine (1), stateless (7)

rated mental and physical health (Table 4). Better self-rated physical health was significantly associated with male sex ( $\beta = .11, p < .05$ ), university level education ( $\beta = -.11, p < .05$ ), having a partner ( $\beta = -.12, p < .01$ ), childlessness ( $\beta = .20, p < .001$ ), lower number of different traumatic events experienced ( $\beta = -.12, p < .05$ ), having current information about family members left behind ( $\beta = -.14, p < .01$ ), and not having a subjective need for health care ( $\beta = -.10, p < .05$ ). Better self-rated mental health was significantly associated with having a partner ( $\beta = -.15, p < .01$ ), childlessness ( $\beta = .17, p < .01$ ), lower number of different traumatic events experienced ( $\beta = -.15, p < .01$ ), and having current information about family members left behind ( $\beta = -.18, p < .001$ ).

## Discussion

Socio-demographic and flight-related characteristics were analyzed as possible predictors for symptoms of PTSD, anxiety, depression, and somatization as well as self-rated physical and mental health in recently arrived refugees in Germany. First, the findings on mental distress in the present study are in line with previous research revealing high prevalence rates of common mental disorders in different refugee populations [9, 10, 26]. The regression analyses identified several risk factors that predict higher PTSD, anxiety, depression, and

**Table 2** Symptom burden of anxiety, depression, somatization, and PTSD as well as self-rated mental and physical health in recently arrived refugees

|   | Female <b>N</b> = 154   | Male <b>N</b> = 347 | Total <b>N</b> = 501     |
|---|-------------------------|---------------------|--------------------------|
| <b>Somatization</b>                       |                         |                     |                          |
| SSS-8 cut off > 11                        | 71 (46.1%)              | 86 (24.8%)          | 157 (31.3%)              |
| <b>Depression</b>                         |                         |                     |                          |
| PHQ-9 cut-off > 14                        | 37 (24.2%) <sup>1</sup> | 71 (20.5%)          | 108 (21.6%) <sup>4</sup> |
| <b>Anxiety</b>                            |                         |                     |                          |
| HSCL-25 (subscale Anxiety) cut-off > 1.75 | 72 (47.7%) <sup>2</sup> | 136 (39.2%)         | 208 (41.8%) <sup>5</sup> |
| <b>Symptoms of PTSD</b>                   |                         |                     |                          |
| PCL-5 cut-off > 32                        | 58 (38.9%) <sup>3</sup> | 114 (32.9%)         | 172 (34.7%) <sup>6</sup> |
|   | <b>Female M / SD</b>    | <b>Male M / SD</b>  | <b>Total M / SD</b>      |
| <b>Self-rated Mental Health</b>           |                         |                     |                          |
| range 0–100                               | 50.99 / 32.29           | 57.56 / 33.06       | 55.54 / 32.93            |
| <b>Self-rated Physical Health</b>         |                         |                     |                          |
| range 0–100                               | 42.14 / 33.04           | 48.55 / 33.64       | 46.58 / 33.86            |

<sup>1</sup>N = 153; <sup>2</sup>N = 151; <sup>3</sup>N = 149; <sup>4</sup>N = 500; <sup>5</sup>N = 498; <sup>6</sup>N = 496

somatization symptom burdens and poorer self-rated mental and physical health. One of the strongest predictors for the different disorders studied was ‘*lack of current information about family members left behind*’, being also positively associated with lower scores of self-rated physical and mental health. This result, which first does not seem surprising, can be understood in varying or rather interacting ways. First, the lack of knowledge about the situation of loved ones indicates an ongoing worry about their lives, especially in conflict and post-conflict settings, that may trigger own traumatic experiences, thus leading to symptom burden. Second, separation from family members and supportive networks, in many cases forced, reduces social support and puts people at risk of social isolation. These constitute risk factors for mental distress in refugees [3, 6]. Future research is needed to investigate the relationship of mental distress and information about family members in refugees as well as to reveal the severity of such relationships for different mental disorders separately.

Traumatic events as risk factor for developing different mental disorders being extensively investigated in previous research [8], the present study found a comparatively small impact of traumatic experiences. ‘*Number of traumatic events*’ was positively associated with symptom burden for anxiety only and negatively associated with self-rated mental and physical health. ‘*Experiences of at least one of interpersonal traumatic events*’ were found to be a significant predictor for symptoms of PTSD in line with previous research [15–17]. These few interactions might be explained by the great heterogeneity of participants regarding their country of origin, and consequently flight route and flight duration (e.g.

participants from Cameroon vs. participants from Venezuela might have had different kinds and numbers of traumatic experiences throughout their flight).

Another significant predictor for all disorders investigated and for self-rated physical health was ‘*need for support in health care system*’. This result is important because the assessment of subjective needs of refugees is still rarely carried out, both in research and in practice. Our analyses, however, constitute a clear indication of a significant correlation between subjective needs for health care and symptoms of different mental disorders which were assessed according to diagnostic criteria. In addition, especially in light of no such correlation with self-rated mental health, there is still need for in-depth investigation of symptom representations among mentally ill refugees from different cultural backgrounds. Also, socio-demographic characteristics were found to be significant predictors for self-rated health status in participants of the present study. For example, ‘*having a partner*’ and ‘*childlessness*’ were positively associated with better self-rated mental and physical health, possibly indicating the presence of social support provided by the partner and the absence of responsibility and ongoing worries for children under difficult conditions. In light of this, it remains unclear why these aspects are directly related to self-rated health and do not interact with symptom burden of the different mental disorders studied. Thus, research focusing on the relationship between subjective and rather objective mental health status in refugees is needed.

All in all, the factors included in the models explained a relatively small proportion of total variance in the present study. On the one hand, some important risk

**Table 3** Linear regression models predicting symptoms of somatization, depression, anxiety and PTSD

|  | Somatization (N = 484) |            |                      |                | Depression (N = 483) |            |                     |               | Anxiety (N = 481) |            |                     |               | Symptoms of PTSD (N = 479) |             |                      |               |
|--|------------------------|------------|----------------------|----------------|----------------------|------------|---------------------|---------------|-------------------|------------|---------------------|---------------|----------------------------|-------------|----------------------|---------------|
|  | B                      | SE         | 95% CI               | $\beta$        | B                    | SE         | 95% CI              | $\beta$       | B                 | SE         | 95% CI              | $\beta$       | B                          | SE          | 95% CI               | $\beta$       |
| Age  | -.01                   | .04        | -.09–.07             | -.01           | -.02                 | .04        | -.10–.05            | -.03          | -.04              | .04        | -.12–.04            | -.05          | -.06                       | .11         | -.29–.17             | .03           |
| Sex <sup>1</sup>                             | <b>-2.77</b>           | <b>.65</b> | <b>-4.05 – -1.48</b> | <b>-.19***</b> | <b>1.39</b>          | <b>.62</b> | <b>-2.60 – -.17</b> | <b>-.10*</b>  | <b>2.07</b>       | <b>.65</b> | <b>-3.35 – -.79</b> | <b>-.14**</b> | -2.88                      | 1.89        | -6.60 – .84          | -.07          |
| University degree <sup>2</sup>               | .81                    | .64        | -.44–2.06            | .06            | .19                  | .60        | -.99–1.36           | .02           | -.02              | .63        | -1.26 – 1.22        | -.001         | 1.55                       | 1.83        | -2.06 – 5.15         | .04           |
| Partnership <sup>3</sup>                     | .67                    | .67        | -.64–1.98            | .05            | <b>1.31</b>          | <b>.63</b> | <b>.08–2.55</b>     | <b>.10*</b>   | 1.13              | .66        | -.17–2.43           | .08           | 2.01                       | 1.92        | -1.77 – 5.78         | .05           |
| Parenthood <sup>4</sup>                      | -1.25                  | .76        | -2.75 – .25          | -.09           | -.83                 | .72        | -2.25 – .58         | -.06          | -1.32             | .76        | -2.81 – .18         | -.09          | -1.37                      | 2.21        | -5.71 – 2.97         | -.03          |
| Global Peace Index                           | 1.00                   | .76        | -.49–2.50            | .06            | -.23                 | .71        | -1.63 – 1.18        | -.01          | -.02              | .75        | -1.50 – 1.46        | -.001         | -.88                       | 2.18        | -5.17 – 3.41         | -.02          |
| Flight duration                              | -.06                   | .10        | -.25–.13             | -.03           | .10                  | .09        | -.08–.27            | .05           | .05               | .10        | -.14–.24            | .02           | .48                        | .28         | -.06–1.03            | .08           |
| Accompaniment during the flight <sup>5</sup> | -.43                   | .68        | -1.76–.91            | -.03           | .22                  | .64        | -1.03 – 1.48        | .02           | .59               | .67        | -.74–1.91           | .04           | -.05                       | 1.95        | -3.89 – 3.79         | -.001         |
| Number TE <sup>a</sup>                       | .06                    | .10        | -.13–.26             | .03            | .16                  | .09        | -.03–.35            | .09           | <b>.20</b>        | <b>.10</b> | <b>-.001–.39</b>    | <b>.11*</b>   | .34                        | .29         | -.24–.91             | .06           |
| Interpersonal TE <sup>6</sup>                | -1.09                  | .89        | -2.85 – .66          | -.07           | -.71                 | .84        | -2.37 – .94         | -.05          | -.95              | .89        | -2.70 – .80         | -.06          | <b>-5.22</b>               | <b>2.59</b> | <b>-10.31 – -.14</b> | <b>-.11*</b>  |
| Information Family <sup>6</sup>              | <b>1.86</b>            | <b>.62</b> | <b>.64–3.08</b>      | <b>.13***</b>  | <b>2.15</b>          | <b>.59</b> | <b>.99–3.30</b>     | <b>.17***</b> | <b>2.30</b>       | <b>.62</b> | <b>1.09–3.52</b>    | <b>.17***</b> | <b>7.82</b>                | <b>1.80</b> | <b>4.29–11.35</b>    | <b>.20***</b> |
| Support in Asylum procedure <sup>7</sup>     | .34                    | .70        | -1.04 – 1.71         | .02            | .23                  | .66        | -1.06 – 1.52        | .02           | .59               | .69        | -.77–1.95           | .04           | 2.78                       | 2.02        | -1.18 – 6.74         | .06           |
| Support in Family Reunion <sup>7</sup>       | -.99                   | .75        | -2.46 – .49          | -.06           | .12                  | .71        | -1.29 – 1.51        | .008          | .46               | .75        | -1.01 – 1.93        | .03           | .08                        | 2.17        | -4.19 – 4.34         | .002          |
| Support in Health Care System <sup>7</sup>   | <b>3.38</b>            | <b>.70</b> | <b>2.00–4.77</b>     | <b>.24***</b>  | <b>1.96</b>          | <b>.66</b> | <b>.65–3.26</b>     | <b>.15**</b>  | <b>2.18</b>       | <b>.70</b> | <b>.81–3.56</b>     | <b>.16**</b>  | <b>5.48</b>                | <b>2.03</b> | <b>1.49–9.47</b>     | <b>.14**</b>  |
| R <sup>2</sup>                               | <b>.141</b>            |            |                      |                | <b>.110</b>          |            |                     |               | <b>.136</b>       |            |                     |               | <b>.135</b>                |             |                      |               |
| Adjusted R <sup>2</sup>                      | <b>.115</b>            |            |                      |                | <b>.084</b>          |            |                     |               | <b>.110</b>       |            |                     |               | <b>.109</b>                |             |                      |               |
| F  | <b>5.492***</b>        |            |                      |                | <b>4.153***</b>      |            |                     |               | <b>5.224***</b>   |            |                     |               | <b>5.188***</b>            |             |                      |               |

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ ; <sup>1</sup>female = 1, male = 2; <sup>2</sup>yes = 1; no = 2; <sup>3</sup>partnership = 1, no partnership = 2; <sup>4</sup>children = 1, no children = 2; <sup>5</sup>unaccompanied = 1, accompanied = 2; <sup>6</sup>yes = 1, no = 2; <sup>7</sup>yes = 1, no = 0; <sup>a</sup>Traumatic events

factors were shown to identify refugees who are suffering from symptoms of different mental disorders upon arrival and, on the other hand, the results indicate that some other relevant factors not investigated in the present study may have even more of an impact on symptoms of PTSD, anxiety, depression, and somatization. So far, the research available on the mental health in different refugee populations is based on data collected in high-income Western countries, making asylum-seekers living in those countries for month and even years the key study population. Unfortunately, there appears to be no other study available that has used a methodology similar to that of this study, which makes it difficult to discuss our results with respect to previous research. Moreover, we do not know of any epidemiologically robust study so far, that has focused on self-rated mental and physical health in refugees.

Although the present study has some major strengths – (I) epidemiological approach, (II) assessment of

recently arrived refugees, considering the time frame of symptom burden and excluding long-term post-migration stressors, (III) application of standardized instruments that have been translated and back-translated into 11 different languages, and (IV) assessment of self-rated physical and mental health status, something which hasn't been investigated in a comparable population before – there are some factors that limit the generalizability and interpretation of our results and consequently shed light on some implications for future research. The analyses conducted in the present study are based on cross-sectional data. Consequently, despite methodological strengths, the generalizability of the findings is somewhat limited due to the fact that: (I) the data reflect a specific wave of refugees recently arrived in Germany at the time of data collection (e.g. refugees from Venezuela, Cameroon, and Syria) whereas the vast majority of refugees worldwide are located in camps within their countries of origin or bordering regions and

**Table 4** Linear regression models predicting self-rated mental and physical health

|  | Self-rated Physical Health (N = 484) |             |                       |               | Self-rated Mental Health (N = 484) |             |                       |                |
|--|--------------------------------------|-------------|-----------------------|---------------|------------------------------------|-------------|-----------------------|----------------|
|  | B                                    | SE          | 95% CI                | $\beta$       | B                                  | SE          | 95% CI                | $\beta$        |
| Age  | .23                                  | .19         | -.14–.61              | .06           | .21                                | .20         | -.19–.60              | .05            |
| Sex <sup>1</sup>                             | <b>7.70</b>                          | <b>3.15</b> | <b>1.51–13.89</b>     | <b>.11*</b>   | 6.38                               | 3.28        | .07–12.82             | .09*           |
| University degree <sup>2</sup>               | <b>-7.06</b>                         | <b>3.07</b> | <b>-13.08 – -1.04</b> | <b>-.11*</b>  | -1.78                              | 3.19        | -8.05 – 4.48          | -.03           |
| Partnership <sup>3</sup>                     | <b>-8.09</b>                         | <b>3.21</b> | <b>-14.40 – -1.78</b> | <b>-.12**</b> | <b>-10.30</b>                      | <b>3.34</b> | <b>-16.86 – -3.74</b> | <b>-.15**</b>  |
| Parenthood <sup>4</sup>                      | <b>13.40</b>                         | <b>3.68</b> | <b>6.18–20.63</b>     | <b>.20***</b> | <b>11.49</b>                       | <b>3.82</b> | <b>3.97–19.01</b>     | <b>.17**</b>   |
| Global Peace Index                           | -.65                                 | 3.66        | -7.84 – 6.55          | -.01          | -1.93                              | 3.81        | -9.42 – 5.55          | -.02           |
| Flight duration                              | -.33                                 | .46         | -1.23 – .58           | -.03          | .12                                | .48         | -.83–1.06             | .01            |
| Accompaniment during the flight <sup>5</sup> | 1.58                                 | 3.27        | -4.84 – 8.01          | .02           | -.92                               | 3.40        | -7.61 – 5.77          | -.01           |
| Number TE                                    | <b>-1.08</b>                         | <b>.49</b>  | <b>-2.04 – -.12</b>   | <b>-.12*</b>  | <b>-1.35</b>                       | <b>.51</b>  | <b>-2.35 – -.36</b>   | <b>-.15**</b>  |
| Interpersonal TE <sup>5</sup>                | -3.09                                | 4.31        | -11.56 – 5.37         | -.04          | -4.17                              | 4.48        | -12.98 – 4.64         | -.05           |
| Information Family <sup>5</sup>              | <b>-9.11</b>                         | <b>3.00</b> | <b>-15.00 – -3.23</b> | <b>-.14**</b> | <b>-12.48</b>                      | <b>3.12</b> | <b>-18.60 – -6.35</b> | <b>-.18***</b> |
| Support in Asylum procedure <sup>6</sup>     | 2.80                                 | 3.37        | -3.82 – 9.41          | .04           | 1.10                               | 3.50        | -5.78 – 7.99          | .01            |
| Support in Family Reunion <sup>6</sup>       | 4.93                                 | 3.62        | -2.18 – 12.05         | .07           | 2.85                               | 3.77        | -4.56 – 10.26         | .04            |
| Support in Health Care System <sup>6</sup>   | <b>-6.98</b>                         | <b>3.39</b> | <b>-13.64 – -.31</b>  | <b>-.10*</b>  | 2.26                               | 3.53        | -4.67 – 9.20          | .03            |
| <b>R<sup>2</sup></b>                         | <b>.116</b>                          |             |                       |               | <b>.099</b>                        |             |                       |                |
| <b>Adjusted R<sup>2</sup></b>                | <b>.089</b>                          |             |                       |               | <b>.072</b>                        |             |                       |                |
| <b>F</b>                                     | <b>4.379***</b>                      |             |                       |               | <b>3.663***</b>                    |             |                       |                |

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ ; <sup>1</sup>female = 1, male = 2; <sup>2</sup>yes = 1; no = 2; <sup>3</sup>partnership = 1, no partnership = 2; <sup>4</sup>children = 1, no children = 2; <sup>5</sup>unaccompanied = 1, accompanied = 2 <sup>6</sup>yes = 1, no = 2; <sup>7</sup>yes = 1, no = 0

(II) no information can be derived with respect to long-term impact of the risk factors analyzed. Thus, future research is needed which focuses on refugees in different host countries using a longitudinal approach. In addition, future research should focus on differences in mental health outcomes due to different cultural settings, participants' ethnic and/or religious affiliations, as well as with respect to possible measurement invariance across different language versions of instruments [40–43]. Moreover, future research is needed using both self-reported scales and clinical interviews as well as functional assessments to better detect those in urgent need for treatment.

## Conclusions

The results of the present study provide initial methodologically robust insights for research and health care services, which should aid in better identifying newly arrived refugees in need of psychosocial care. The refugees with the highest symptom burdens are those who currently have no information about family left behind, female refugees, and those who report needing health care. Moreover, the findings of the present study indicate no link between symptom burden and need for assistance with submitting a family reunion request or navigating the asylum procedure. It is therefore all the more urgent, also in the sense of fulfilling humanitarian obligations by the host countries, on the one hand, to

address the question of how to provide health care for highly vulnerable groups within refugee populations as quickly as possible regardless their residential status and, on the other hand, to provide accurate and useful data on these topics to inform current debates taking place in politics and the media.

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## Authors' contributions

YN and HG originated the idea. YN and MF performed the statistical analyses. YN, DJ and LH contributed to data collection. YN and HG wrote the manuscript draft. All authors contributed in the interpretation of the results, the writing and critical reviewing of the final manuscript. All authors read and approved the final manuscript version.

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## Availability of data and materials

The datasets generated and analyzed during the current study are not publicly available due to ongoing analyses in respect to other research questions, but are available from the corresponding author on reasonable request.

## Ethics approval and consent to participate

The study was approved by the Ethics Committee of the Medical Faculty of the University of Leipzig (446/16-ek). All study procedures were conducted in accordance with the Helsinki Declaration and its later amendments or comparable ethical standards. Written informed consent was obtained from all study participants.

## Consent for publication

Not applicable.

**Competing interests**

The authors declare that they have no conflict of interest.

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# *Health care needs among recently arrived refugees in Germany: a cross-sectional, epidemiological study*

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ORIGINAL ARTICLE

# Health care needs among recently arrived refugees in Germany: a cross-sectional, epidemiological study

Yuriy Nesterko<sup>1</sup> · David Jäckle<sup>1</sup> · Michael Friedrich<sup>1</sup> · Laura Holzapfel<sup>1</sup> · Heide Glaesmer<sup>1</sup>

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## Abstract

**Objectives** The purpose of the present study is to investigate current needs for physical and/or mental health treatment in recently arrived refugees' by considering socio-demographic, flight, and mental health-related characteristics as well as different social care needs based on epidemiological data.

**Methods** The study was conducted in a reception facility for asylum-seekers in Leipzig, where 569 newly arrived adult residents participated. The questionnaire included socio-demographic and flight-related questions as well as standardized instruments for assessing mental health symptoms. Logistic regression models were conducted to predict current needs for treatment of self-rated physical and mental health status.

**Results** Greater numbers of traumatic events, positive screening results for at least one mental disorder, and a current need for assistance navigating the health care system were found to be significant predictors for current mental and physical health treatment needs. In addition, males are more likely to report current treatment needs for mental health symptoms.

**Conclusions** Health-related characteristics do predict newly arrived refugees' treatment needs, and socio-demographic and flight-related characteristics do not. The results provide both academia and policy makers with first implications for improving health care for refugees in need as quickly as possible.

**Keywords** Refugees · Health care needs · PTSD · Depression · Somatization · Asylum

## Abbreviations

|         |   |
|---------|---|
| AsylbLG | Asylum-Seekers' Benefits Act                  |
| PTSD    | Posttraumatic stress disorder                 |
| UNHCR   | United Nations High Commissioner for Refugees |

## Introduction

Migration rates are on the rise worldwide, a trend that has been gaining momentum over the last few decades in particular. There are many reasons to migrate, the most important being the desire for a better quality of life—in many cases caused by economic crises, political instability and/or armed conflicts currently present in many parts of the world. Besides voluntary migration, the number of forcibly displaced people seeking asylum has been dramatically growing in recent years. According to the Office of the United Nations High Commissioner for Refugees (UNHCR), by the end of 2018, 70.8 million people were forcibly displaced worldwide, including 25.9 million acknowledged refugees, and 3.5 million registered asylum-seekers, who were awaiting a decision on their asylum application, many of them in developing regions (United Nations High Commissioner for Refugees 2019).

By now, there is no doubt that the experiences people have while migrating impact their health status, even though the direction, type, and level of severity of this relationship are very complex and may consequently result

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in substantial health-related differences between different groups of immigrants (Nesterko et al. 2019). Especially forcibly displaced persons and/or refugees experiencing a broad spectrum of different adverse and/or stressful events before, during, and/or after fleeing have often been described as a high-risk population for developing mental disorders (Giacco et al. 2018), of which, post-traumatic stress disorder and depression have been the most frequently investigated (Bogic et al. 2015; Fazel et al. 2005; World Health Organization 2018). Thus, most high-income, Western countries are now dealing with increasing numbers of asylum-seekers, some of whom have complex health care needs and are consequently facing exceptional challenges addressing those needs appropriately within existing health care structures.

In general, available evidence on refugees' health care needs is primarily focused on needs related to mental health problems (Giacco et al. 2018; Nesterko et al. 2020), as well as chronic (Goosen 2014) and infectious diseases (Yun et al. 2012). However, despite numerous reports indicating higher symptom burden, and in consequence increased needs for health care in different refugee populations, data on refugees' health care needs and/or utilization remains inconsistent (Wetzke et al. 2018; Yang and Hwang 2016). This might be attributable to the great heterogeneity within refugee populations (e.g., due to countries of origin, flight route and duration, exposure to different traumatic events before, during, and/or after the flight) on the one hand, and differences in health policies towards asylum-seekers in different host countries on the other. In Germany, currently the leading destination for refugees and the country with the highest number of asylum applications in Europe, legal restrictions on access to health care were set up for asylum-seekers in 1993 (and were last revised in 2019). During the first 18 months after arrival, services including emergency medicine, care for acute and/or pain conditions, as well as pregnancy and child birth care are covered by the so-called Asylum-Seekers' Benefits Act (AsylbLG). What is more, with the exception of emergencies, every health care utilization request made by asylum-seekers is subjected to review by the welfare agency staff after a personal application has been submitted by the asylum-seeker, a practice beholden to the subjective judgment procedure of local authority staff, who in many cases have no medical expertise and make their decisions based on asylum-seekers' subjective competence as well as language skills in applying for such services (Bozorgmehr et al. 2015). Consequently, language barriers and knowledge gaps concerning the health care system, both on the part of asylum-seekers and local authorities' staff, lead to asylum-seekers experiencing restricted access to the health care system (Wängdahl et al. 2018), a state of affairs that has been widely criticized by

researchers, health care providers, activists, and policy makers (Borgschulte et al. 2018). This applies in German federal states that reject electronic health cards for asylum seekers right after arrival, including Mecklenburg-Western Pomerania, Saxony-Anhalt, Hessen, Saarland, Baden-Württemberg, Bavaria and Saxony as well as parts of Lower Saxony, North Rhine-Westphalia and Rhineland-Palatinate. To the best of our knowledge, only six of 16 German federal states provide such cards for asylum seekers without restrictions (Medical care for refugees e.V. 2020).

In addition to the legal and bureaucratic barriers described above, there are factors on the individual level such as age and sex that influence health care needs and utilization in different refugee populations. In Germany, Wetzke et al. (2018) found higher healthcare utilization in refugee children age 10 and under as well as in refugees age 60 and older. Moreover, reports fairly consistently indicate that female refugees utilize health care more often than males do (Bozorgmehr et al. 2015; Gerritsen et al. 2006; Henjum et al. 2012). In their review on service utilization and barriers to accessing care for asylum-seekers, Hadgkiss and Renzaho (2014) identify and summarize some further factors more directly related to immigration, which may lead to reduced use of health care among refugees: poor health literacy and knowledge about the health care system in the host country, mistrust due to quality and confidentiality of care (e.g., quality of translation provided by interpreters, perceived connections between the immigration/asylum process and health systems, resulting in fear of possible deportation), educational, cultural and/or ethnic specifics in perception and expression of pain, as well as perceived discrimination by health care professionals. As a result, there are reports of overutilization of emergency services occurring due to underutilization of preventive and specialized health care services among various immigrant and refugee populations (Kiss et al. 2013; Sarria-Santamera et al. 2016), potentially also explained by the restrictions mentioned above. In general, the existing evidence reveals that, despite their higher level of needs (number of diagnoses, severity of symptoms, poor self-rated health status), asylum-seekers receive relatively few medical consultations and shorter durations of care compared to natives and other groups of immigrants (Bischoff and Denhaerynck 2010). This underscores the notion that access to health care does not automatically equal appropriate care (Newbold 2009). For example, in a population-based study Bidde et al. (2019) report about 30% of unmet health care needs stated by refugees and asylum seekers reflecting on the health care in Germany received during the last 12 months. In summary, different health care needs, resulting health care utilization, and existing barriers to the health care system among

asylum-seekers should be seen as a complex interaction between the health care system, legal regulations, and the individual characteristics of refugee populations at risk.

Altogether, the existing evidence mentioned above primarily reflects the health care needs and health care utilization of immigrants and asylum-seekers, who had already been in their host country for a longer period of time. As a result, it reflects health care needs, which might be influenced by post-migration stressors (e.g., perceived discrimination, restricted access to the labor market, long-termed asylum procedure etc.). To the best of our knowledge, there are no studies available, which report about refugee's health care needs upon their arrival in host countries. Therefore, the aim of the present study was to examine current needs for treatment of mental and physical health in recently arrived refugees. The analyses were conducted based on survey data collected in an epidemiological study, focusing on (1) socio-demographic and (2) flight-related characteristics, (3) mental health problems, as well as (4) different social care needs as potential predictors for self-rated current needs for treatment of physical and mental health in refugees of different origins upon their arrival in Germany.

## Methods

### Data collection and study sample

The study was conducted between May 2017 and June 2018 in a primary reception facility operated by the Federal State of Saxony for asylum-seekers in Leipzig, Germany. The study's target population consisted of adult individuals ( $\geq 18$  years) who were currently being accommodated in the facility during the survey period. Based on the facility's registration data of all newly arrived residents, potential study participants were approached by members of the project staff in their accommodation unit, informed about the study objectives as well as data protection policy, and, in the event that they were willing to participate, introduced to the survey procedure. Between May 1st and May 15th of 2017, the participants were asked to fill out a paper version of the questionnaire (pilot study;  $N = 67$ ), after May 17th of 2017, the participants filled out a tablet-based questionnaire in their respective native language. After information sheets and consent were handed out and consent to participate was given, the participants responded to the questionnaire by themselves (time needed approximately: 45 min). Project staff was available to answer questions when necessary. The assessments took place three times a week, on Mondays, Wednesdays, and Thursdays between 10 a.m. and 1 p.m. Data were electronically transferred and administered consecutively to the

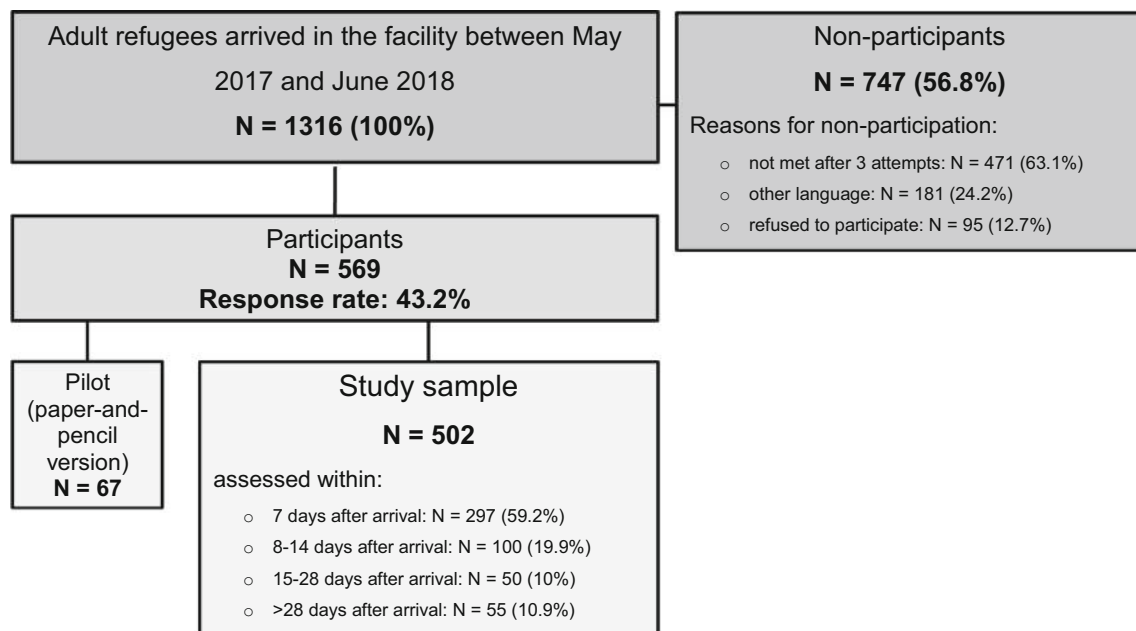
ongoing data collection using LimeSurvey Offline-App for android systems. Data control and consistency checks were carried out at monthly intervals and a simple plausibility check was carried out immediately after the entry of a maximum of 30 data sets. Data were stored in anonymous form on a computer at the University of Leipzig network in accordance with the data protection guidelines.

A total of 1316 adult individuals were newly accommodated in the primary reception facility during the survey period, 569 of whom took part in the study (response rate 43.2%). Of these, 67 individuals completed the paper version of the questionnaire and 502 responded via tablet. Generally, about 60% ( $n = 297$ ) were assessed during the first seven days after the arrival, another 19.9% ( $n = 100$ ) during the second week (between 8 and 14 days) after the arrival, 10% ( $n = 50$ ) during the period of 15 and 28 days after the arrival, and finally 10.9% ( $n = 55$ ) > 28 days after the arrival. Data on all non-participants' age, sex, and country of origin were recorded to identify possible selection bias. Detailed information on age, sex and country of origin of non-participants as well as calculated non-response weights were published previously (Nesterko et al. 2020). Figure 1 gives an overview of the study procedure.

The study was approved by the Ethics Committee of the Medical Faculty of the University of Leipzig (446/16-ek). All study procedures were conducted in accordance with the Helsinki Declaration and its later amendments, or comparable ethical standards. Written informed consent was granted by all study participants.

### Measures

The questionnaire used in the present study included (1) socio-demographic, flight-related questions and questions addressing different social care needs, (2) standardized instruments for assessing PTSD, depression, and somatization, as well as (3) questions assessing self-rated mental and physical health, and current treatment needs for mental and physical health. The German version of the questionnaire was translated and back-translated into 10 different languages (Albanian, Arabic, English, Farsi, French, Kurdish, Russian, Spanish, Turkish and Urdu) by a professional translation agency (mt-g medical translation GmbH) specialized in medical translations. The Tigrinya version of the questionnaire was translated and back-translated by the same agency based on the English version of the questionnaire. All back-translations were reviewed by the first and last author and, when necessary, returned to the agency for final modification/adjustment.



**Fig. 1** Study procedure; Leipzig (Germany), May 2017–June 2018

### Sociodemographic and flight-related characteristics as well as social care needs

Participants were asked to provide information about their age, sex, country of origin, marital status, number of children, level of education, the duration of their flight, accompaniment during their flight, as well as their present needs for support and/or assistance due to the asylum procedure, access to the labor market and education system, family reunion requests, assistance in navigating health care system, German language training, and/or private housing, each with “yes” or “no” response options. Finally, participants’ length of stay in the cooperating facility was assessed using registration data provided by the facility staff.

### Symptoms of somatization, depression, and post-traumatic stress disorder

Somatic symptoms were assessed with the Somatic Symptom Scale-8 (SSS-8) (Gierk et al. 2014). The SSS-8 is a shortened version of the PHQ-15 questionnaire developed for DSM-5 field trials. Each item can be rated on a 5-point Likert-Scale from “not at all” (0) to “very much” (4) referring to the previous 7 days. The total scores, therefore, range from 0 to 32, and are subdivided into five categories of severity: “none to minimal” (0–3), “low” (4–7), “medium” (8–11), “high” (12–15), and “very high” (16–32) somatic symptom burden. A cut-off-score of > 11 was used for the present study. The internal consistency

was  $\alpha = 0.84$  (0.77 to 0.93 for the different language versions).

Depression symptoms were assessed with the Patient Health Questionnaire-9 (PHQ-9) (Kroenke et al. 2001). The PHQ-9 contains nine items rated on a scale of 0 (“not at all”) to 3 (“nearly every day”) which reflect the frequency with which participants have experienced the symptom in question within the previous 14 days. Based on the total sum (0–27), symptom severity can be divided into the categories “none-minimal” (0–4), “mild” (5–9), “moderate” (10–14), “moderately severe” (15–19), and “severe” (20–27) depression. Participants with a sum score of > 14 were classified as having depressive disorder. Cronbach’s  $\alpha$  in the present study was  $\alpha = 0.84$  (0.70 to 0.89 for the different language versions).

PTSD was assessed with the PCL-5 (PTSD-Checklist), a 20-item self-report instrument, which assesses symptoms of PTSD as defined by the DSM-5 (Blevins et al. 2015). The 20 items of the PCL-5 reflect the frequency with which respondents have experienced the item in question rated on a 5-point Likert-scale ranging from “not at all” (0) to “extremely” (4). A total score (0–80) can be obtained by summing up the scores for each of the 20 items. A score at or above the cut-off score of 33 indicates the presence of PTSD in the respondent. Cronbach’s  $\alpha$  in the present study was  $\alpha = 0.95$  (0.93 to 0.97 for the different language versions).

## Traumatic events

Traumatic events were assessed using the revised DSM-5 (LEC-5) Life Events Checklist for assessing trauma exposure (Weathers et al. 2013). The LEC-5 is comprised of 16 items, which address types of events that can potentially result in PTSD or distress. The following response categories exist for each type of event: (1) happened to me, (2) witnessed it, (3) learned about it, (4) part of my job, (5) not sure, and (6) does not apply. The LEC-5 was used in combination with the PCL-5 (Posttraumatic stress disorder Checklist as defined by DSM-5) for the purpose of establishing exposure to a PTSD A-Criterion, with the response option “happened to me”, “witnessed it” and “part of my job” being used in the present study.

## Self-rated mental and physical health status and current needs for treatment

Participants were asked to rate their current mental and physical health status on a visual analog scale ranging from 0 to 100, with higher scores indicating better health status. In addition, current treatment needs for mental and/or physical health were assessed separately using two items (“Do you currently need treatment for physical problems?”/“Do you currently need treatment for mental/emotional problems?”) with “yes” or “no” response options (Fig. 2).

For the purposes of the present study, focusing on newly arrived refugees’ mental and physical treatment needs, we made a distinction between participants who had no clinically significant symptoms of somatization, depression and PTSD, and those who screened positive for at least one of mental disorders investigated. Results on prevalence and comorbidity of somatization, depression and PTSD, as well as traumatic events experienced in participants of this sample are described in more detail previously (Nesterko et al. 2020).

## Statistical analyses

Statistical analyses were performed using the IBM SPSS statistical package, version 24.0 for Windows. Descriptive statistics including frequencies, means, and standard deviations were used to characterize the study sample. The symptom burden levels of the mental disorders investigated were calculated according to the cut-off scores of each questionnaire. Two logistic regression analyses were conducted using the Enter method—consisting of the same set of predictor variables (age, sex, university degree, partnership, parenthood, flight duration, accompaniment during flight, number of traumatic events, positive screening result for at least one mental disorder under consideration, self-rated mental and physical health, assessment time after arrival, need for assistance in respect to asylum procedure, labor market, education system, family reunion requests, navigating the health care system, German language training, and private housing)—to look for potential predictors among (1) socio-demographic, (2) flight and (3) health related factors as well as (4) participants’ social care needs on their current treatment needs for mental and physical health.

## Results

Table 1 gives an overview of the sample’s socio-demographic and flight-related characteristics. The mean age of the participants in the present study was 29.84 (SD = 9.13) years. The majority of the participants were male ( $n = 395$ , 69.4%). The largest groups were refugees from Cameroon ( $n = 92$ , 16.2%), Venezuela ( $n = 85$ , 14.9%), and Syria ( $n = 55$ , 9.7%); all in all, participants from over 30 different countries took part in the survey. Almost half of the participants ( $n = 277$ , 49%) reported having a university degree. A total of 325 (57.2%) participants were single, 35.7% ( $n = 203$ ) were married, 5.1% ( $n = 29$ ) divorced, and 1.9% ( $n = 11$ ) widowed, with 212 (37.3%) participants

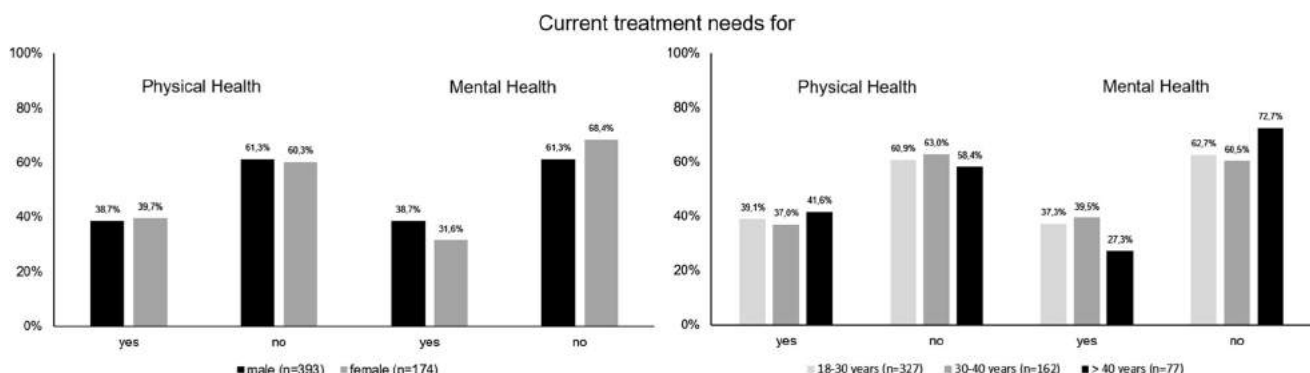


Fig. 2 Current treatment needs for physical and mental health stratified by sex and age groups; Leipzig (Germany) May 2017–June 2018

**Table 1** Sociodemographic and flight-related characteristics of the study sample; study conducted in Leipzig (Germany) between May 2017 and June 2018

|  | Participants<br><i>N</i> = 569 |
|--|--------------------------------|
| Age <sup>1</sup>                             |                                |
| M/SD/Range                                   | 29.84/9.13/18–70               |
| Sex  |                                |
| Male   | 395 (69.4%)                    |
| Female                                       | 174 (30.6%)                    |
| Country of origin                            |                                |
| Cameroon                                     | 92 (16.2%)                     |
| Eritrea                                      | 49 (8.6%)                      |
| Iraq   | 28 (4.9%)                      |
| Nigeria                                      | 38 (6.7%)                      |
| Syria  | 55 (9.7%)                      |
| Turkey                                       | 52 (9.1%)                      |
| Venezuela                                    | 85 (14.9%)                     |
| Other <sup>a</sup>                           | 170 (29.9%)                    |
| University degree <sup>2</sup>               |                                |
| Yes  | 277 (49%)                      |
| No   | 288 (51%)                      |
| Marital status <sup>1</sup>                  |                                |
| Single                                       | 325 (57.2%)                    |
| Married                                      | 203 (35.7%)                    |
| Divorced                                     | 29 (5.1%)                      |
| Widowed                                      | 11 (1.9%)                      |
| Partnership <sup>1</sup>                     |                                |
| Yes  | 212 (37.3%)                    |
| No   | 356 (62.7%)                    |
| Parenthood <sup>1</sup>                      |                                |
| Yes  | 222 (39.1%)                    |
| No   | 346 (60.9%)                    |
| Flight duration in years <sup>3</sup>        |                                |
| M/SD/Range                                   | 1.9/3.1/0–27                   |
| Accompaniment during the flight <sup>1</sup> |                                |
| Alone  | 251 (44.2%)                    |
| Strangers                                    | 141 (24.8%)                    |
| Friends                                      | 57 (10%)                       |
| Family members                               | 119 (21%)                      |
| Social care needs due to:                    |                                |
| Finding work <sup>4</sup>                    |                                |
| Yes/no                                       | 307 (55.3%)/248 (44.7%)        |
| Asylum procedure <sup>4</sup>                |                                |
| Yes/no                                       | 381 (68.6%)/174 (31.4%)        |
| Education <sup>4</sup>                       |                                |
| Yes/no                                       | 234 (42.2%)/321 (57.8%)        |
| Family reunion <sup>4</sup>                  |                                |
| Yes/no                                       | 145 (26.1%)/410 (73.9%)        |
| Navigating within HCS <sup>b,4</sup>         |                                |
| Yes/no                                       | 217 (39.1%)/338 (60.9%)        |

**Table 1** (continued)

|                                       | Participants<br><i>N</i> = 569 |
|---------------------------------------|--------------------------------|
| German language training <sup>4</sup> |                                |
| Yes/no                                | 354 (63.8%)/201 (36.2%)        |
| Finding apartment <sup>4</sup>        |                                |
| Yes/no                                | 225 (40.5%)/330 (59.5%)        |
| Current need for:                     |                                |
| Physical health care <sup>5</sup>     |                                |
| Yes/no                                | 217 (39.2%)/337 (60.8%)        |
| Mental health care <sup>5</sup>       |                                |
| Yes/no                                | 202 (36.5%)/352 (63.5%)        |

<sup>a</sup>Country of origin other (*N*): Afghanistan (11), Algeria (4), Armenia (3), Belarus (1), Colombia (1) Ethiopia (20), Ghana (3), Georgia (9), India (2), Iran (7), Jordan (2), Kosovo (1), Kuwait (1), Lebanon (7), Liberia (1), Libya (25), Morocco (5), Myanmar (3), Palestine (13), Pakistan (7), Russian Federation (12), Senegal (2), Somalia (7), Sri Lanka (1), Tunisia (7), Ukraine (1), stateless (11)

<sup>b</sup>Health care system; <sup>1</sup>*N* = 568; <sup>2</sup>*N* = 566; <sup>3</sup>*N* = 544; <sup>4</sup>*N* = 555; <sup>5</sup>*N* = 554

reporting that they currently have a partner, and 222 (93.1%) that they have children. The mean flight duration was 1.9 years (SD = 3.1), reflecting a wide range spanning from 0 to 27 years, with 44.2% (*n* = 251) of the participants reporting that they had been alone while fleeing. More than two-thirds (*n* = 381, 68.7%) of the participants expressed needing assistance with respect to their asylum procedure, the most infrequently mentioned need being that of assistance due to a family reunion request (*n* = 145, 26.1%). Current treatment needs for physical and mental health were reported by 217 (39.2%) and 202 (36.5%) participants, respectively.

Prevalence rates of somatization, depression, and PTSD as well as mean scores for self-rated mental and physical health, both stratified by sex and in total, are displayed in Table 2. The highest prevalence rate was found for symptoms of PTSD (35.7%), followed by symptoms of somatization (31.3%), and depression (21.3%). The mean number of different traumatic events was 4.8 (SD = 3.7). All in all, half of the participants (*n* = 278, 50.1%) screened positive for at least one mental disorder. More details about prevalence and comorbidity of somatization, depression, and PTBS, as well as traumatic events experienced in participants from this sample are described elsewhere (Nesterko et al. 2020).

Two separate logistic regression analyses were performed to test which socio-demographic, flight-related, mental health-related factors, and social care needs are

**Table 2** Symptom burden of somatization, depression, and posttraumatic stress disorder as well as number of traumatic events and self-rated mental and physical health in recently arrived refugees; study conducted in Leipzig (Germany) between May 2017 and June 2018

|  | Female <i>N</i> (%) | Male <i>N</i> (%) | Total <i>N</i> (%) |
|--|---------------------|-------------------|--------------------|
| Somatization <sup>1</sup>  |                     |                   |                    |
| SSS-8 cut off > 11   | 77 (45)             | 97 (25)           | 174 (31.3)         |
| Depression <sup>2</sup>  |                     |                   |                    |
| PHQ-9 cut-off > 14   | 41 (23.7)           | 79 (20.3)         | 120 (21.3)         |
| PTSD <sup>3</sup>  |                     |                   |                    |
| PCL-5 cut-off > 32   | 66 (39.3)           | 133 (34.2)        | 199 (35.7)         |
| Screened positive for at least one mental disorder investigated <sup>4</sup> | 101 (59.8)          | 177 (45.9)        | 278 (50.1)         |
|  | Female M/SD         | Male M/SD         | Total M/SD         |
| Number of traumatic events <sup>5</sup>                                      |                     |                   |                    |
| Range 0–15   | 4.14/3.56           | 5.08/3.75         | 4.8/3.7            |
| Self-rated Mental Health <sup>6</sup>  |                     |                   |                    |
| Range 0–100  | 42.02/34.28         | 48.10/34.59       | 46.23/34.58        |
| Self-rated Physical Health <sup>7</sup>                                      |                     |                   |                    |
| Range 0–100  | 51.58/32.71         | 57.55/33.54       | 55.71/33.37        |

<sup>1</sup>*N* = 559 (female *n* = 171, male *n* = 388); <sup>2</sup>*N* = 563 (female *n* = 173, male *n* = 390); <sup>3</sup>*N* = 557 (female *n* = 168, male *n* = 389); <sup>4</sup>*N* = 555 (female *n* = 169, male *n* = 386); <sup>5</sup>*N* = 569 (female *n* = 174, male *n* = 395); <sup>6</sup>*N* = 563 (female *n* = 173, male *n* = 390); <sup>7</sup>*N* = 566 (female *n* = 174, male *n* = 392)

associated with current treatment needs for physical and mental health (Table 3). In both models, participants with a higher number of traumatic events (OR: 1.06, 95% CI: 1.00–1.13; OR: 1.07, 95% CI: 1.01–1.13), those who screened positive for at least one mental disorder (OR: 4.52, 95% CI: 2.76–7.40; OR: 2.73, 95% CI: 1.73–4.31), and participants who reported a current need for support with respect to the navigating the health care system (OR: 2.14, 95% CI: 1.21–3.77; OR: 3.25, 95% CI: 1.92–5.50) were found to be more likely to report current treatment needs for mental and physical health. Participants with worse self-rated physical health are more likely to have current treatment need for physical health (OR: 0.97, 95% CI: 0.96–0.98). Similarly, participants with worse mental health are more likely to state mental health treatment needs (OR: 0.98, 95% CI: 0.97–0.99). In addition, male participants were more likely than females to report current treatment needs for mental health problems (OR: 2.36, 95% CI: 1.39–4.02).

## Discussion

In the present study, socio-demographic and flight-related characteristics, as well as mental health problems and social care needs were analyzed as predictors for self-rated current needs in treatment for physical and mental health problems among newly arrived refugees in Germany.

Participants who: reported a higher number of traumatic events, screened positive for at least one mental disorder, and/or had a current need for support navigating the health care system were more likely to report current treatment needs for mental and physical health. In addition, worse self-rated physical and mental health, were found to be predictors for physical and mental health treatment needs. A rather unexpected association was found between mental health treatment needs and sex, whereby male participants were found to report a greater need for treatment of their mental health. In contrast to our findings, previous studies have frequently observed higher symptom burden, suggesting higher rates of health care needs, and in consequence, higher health care utilization among female refugees (Yang and Hwang 2016). When examining the existing evidence on mental health care needs, no conclusive statement on sex differences can be made; there are some studies that report more use (Kerkenaar et al. 2013; Nielsen et al. 2015) and some that indicate less use of mental health services by female immigrants and refugees in comparison to their male counterparts (Durbin et al. 2014, 2015; Straiton et al. 2014, 2016). In a population-based, cross-sectional study examining access to health care among asylum-seekers in Germany (Bozorgmehr et al. 2015), higher rates of health care utilization in female participants were partly explained by greater medical needs in women with respect to pregnancy and childbirth. Moreover, there is some evidence suggesting cultural and/

**Table 3** Logistic regression analyses predicting mental and physical treatment needs in newly arrived refugees; study conducted in Leipzig (Germany) between May 2017 and June 2018

| Predictor*                                   | Current need for mental health care ( <i>N</i> = 524) |           |          | Current need for physical health care ( <i>N</i> = 524) |           |          |
|--|---|-----------|----------|---|-----------|----------|
|  | Adjusted OR   | 95% CI    | <i>p</i> | Adjusted OR   | 95% CI    | <i>p</i> |
| Age  | 0.99  | 0.96–1.02 | 0.434    | 1.01  | 0.98–1.04 | 0.454    |
| Sex <sup>1</sup>                             | 2.36  | 1.39–4.02 | 0.002    | 1.28  | 0.79–2.05 | 0.313    |
| University degree <sup>2</sup>               | 1.03  | 0.64–1.65 | 0.906    | 1.03  | 0.67–1.59 | 0.890    |
| Partnership <sup>3</sup>                     | 1.00  | 0.61–1.64 | 0.999    | 1.01  | 0.64–1.59 | 0.974    |
| Parenthood <sup>4</sup>                      | 0.75  | 0.43–1.33 | 0.330    | 1.20  | 0.71–2.04 | 0.492    |
| Flight duration                              | 1.02  | 0.95–1.10 | 0.575    | 1.03  | 0.97–1.10 | 0.337    |
| Accompaniment during the flight <sup>5</sup> | 0.73  | 0.44–1.21 | 0.226    | 0.92  | 0.58–1.46 | 0.731    |
| Number traumatic events                      | 1.06  | 1.00–1.13 | 0.048    | 1.07  | 1.01–1.13 | 0.023    |
| At least one MD investigated <sup>6</sup>    | 4.52  | 2.76–7.40 | < 0.001  | 2.73  | 1.73–4.31 | < 0.001  |
| Self-rated mental health                     | 0.98  | 0.97–0.99 | < 0.001  | 1.01  | 1.00–1.02 | 0.146    |
| Self-rated physical health                   | 0.99  | 0.98–1.00 | 0.070    | 0.97  | 0.96–0.98 | < 0.001  |
| Time of assessment <sup>7</sup>              | 0.83  | 0.67–1.04 | 0.114    | 0.94  | 0.77–1.14 | 0.535    |
| Social care needs due to                     |   |           |          |   |           |          |
| Finding work <sup>6</sup>                    | 1.26  | 0.74–2.14 | 0.385    | 0.79  | 0.48–1.31 | 0.369    |
| Asylum procedure <sup>6</sup>                | 0.99  | 0.57–1.71 | 0.967    | 1.23  | 0.75–2.03 | 0.407    |
| Education <sup>6</sup>                       | 1.36  | 0.82–2.26 | 0.233    | 0.66  | 0.41–1.07 | 0.093    |
| Family reunion <sup>6</sup>                  | 0.75  | 0.42–1.35 | 0.332    | 0.86  | 0.50–1.47 | 0.583    |
| Health care system <sup>6</sup>              | 2.14  | 1.21–3.77 | 0.009    | 3.25  | 1.92–5.50 | < 0.001  |
| German language training <sup>6</sup>        | 1.30  | 0.75–2.25 | 0.356    | 1.07  | 0.65–1.77 | 0.797    |
| Finding apartment <sup>6</sup>               | 0.59  | 0.34–1.05 | 0.074    | 0.64  | 0.38–1.10 | 0.107    |
| Model fit indices                            |   |           |          |   |           |          |
| $\chi^2/df/p$                                | 201.49/19/ < 0.001                                    |           |          | 137.99/19/ < 0.001                                      |           |          |
| – 2 Log-Likelihood                           | 482.549   |           |          | 559.760   |           |          |
| Nagelkerkes $R^2$                            | 0.436   |           |          | 0.315   |           |          |
| Cox and Snell $R^2$                          | 0.319   |           |          | 0.232   |           |          |

<sup>1</sup>Female = 1, male = 2; <sup>2</sup>yes = 1, no = 2; <sup>3</sup>partnership = 1, no partnership = 2; <sup>4</sup>children = 1, no children = 2; <sup>5</sup>unaccompanied = 1, accompanied = 2; <sup>6</sup>yes = 1, no = 0; <sup>7</sup>within first 7 days after arrival = 1, between 8 and 14 days = 2, between 15 and 28 days = 3, after 28 days = 4

\*The lower category represents the reference category

MD mental disorder

or ethnic differences resulting in varying perceptions of mental health problems and consequently mental health care needs across different groups of immigrants and refugees (Kohrt et al. 2014; Nesterko et al. 2017). However, by controlling self-rated health status and different mental health outcomes of the ethnically quite heterogeneous study sample we found current treatment needs for mental, but not physical health problems differing between men and women, revealing higher rates by males. One possible explanation might be related to the higher number of traumatic events reported by men. Future research into this aspect is warranted (e.g., exposure to war-related traumatic events like captivity or torture leading to higher treatment needs). It should investigate how sex differences are associated with mental health treatment needs in refugees by considering possible impacts of both ethnic

characteristics (e.g., analyses on more homogeneous groups) as well as specific flight-related traumatic exposure in male and female refugees.

In summary, with the exception of the sex differences in current treatment needs for mental health discussed above, health-related rather than socio-demographics, flight-related characteristics and social care needs were found to be associated with current treatment needs for mental and physical health problems among the participants in the present study.

Although the present study has some major strengths—(1) epidemiological approach, (2) assessment of recently arrived refugees, considering the time frame of symptom burden and excluding long-term post-migration stressors, (3) use of instruments that have been translated and back-translated into 11 different languages and (4) assessment of

self-rated physical and mental health status, as well as needs due to numerous social requests right after arrival, something that has not been investigated in a comparable population before—there is a number of limitations requiring some critical reflection. First, the analyses conducted in the present study are based on cross-sectional data. Consequently, the generalizability of the findings is somewhat restricted due to the fact that (1) the data reflect a specific wave of refugees who had recently arrived in Germany at the time of data collection (e.g., refugees from Venezuela, Cameroon, and Syria) and (2) no information can be derived with respect to the long-term impact of the predictors analyzed. In addition, no conclusions can be drawn concerning the trajectories of subjective needs among this study's participants or their health care utilization. Thus, future research should focus on refugee's health care and treatment needs and health care utilization using a longitudinal approach. Due to the methodological approach used in the present study, the examination of health care utilization in recently arrived refugees was not possible, something which should be addressed in future research as well. Moreover, future research focusing on differences in mental health outcomes due to different cultural and/or ethnic affiliations of the participants as well as with respect to possible measurement invariance across different language versions of instruments is needed (Dere et al. 2015; Haroz et al. 2016; Kohrt et al. 2014; Schnyder et al. 2015). Third, due to the heterogeneity of refugee populations, both with regard to their countries of origin as well as with regard to different health care systems provided by the receiving countries, an international collaborative study on health care in refugee populations should be initiated by researchers in different receiving countries. Beyond that, in the vein of theoretical models on health service utilization in general populations (e.g., Andersen's health behavior model; Andersen 1995), there is an urgent need for a specific theoretical framework explaining health care utilization in refugees, although some first suggestions addressing immigrant populations are already available (Yang and Hwang 2016).

Despite the limitations and implications for future research mentioned above, the results of the present study provide first insights into health care and treatment needs in newly arrived refugees for both academia and policy makers to, on the one hand, identify those in need, and on the other, to provide appropriate health care as soon as possible. In contrast to some debates in politics and the media arguing for more restrictions on asylum procedures—including costs and qualifying conditions for health care—with respect to would-be financial claims refugees are looking for, no such relation between different requests or rather different social and health care needs just after their arrival were found. What is more, there is research

indicating that higher costs are imposed on the health care system as result of this population underutilizing health care services in general, and consequently over-utilizing emergency health services (Yang and Hwang 2016; Bauhoff and Göppfarth 2018), the method of treatment delivery provided for by the Asylum-Seekers' Benefits Act (AsylbLG). In conclusion, from our point of view, providing appropriate health care for refugees in need, a humanitarian obligation that western high-income countries must not shirk, is hardly possible without appropriate policy changes enacted by politically responsible representatives.

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## Compliance with ethical standards

**Conflict of interests** The authors declare that they have no conflict of interest.

**Ethical approval** The study was approved by the Ethics Committee of the Medical Faculty of the University of Leipzig (446/16-ek). All study procedures were conducted in accordance with the Helsinki Declaration and its later amendments, or comparable ethical standards.

**Informed consent** Written informed consent was granted by all study participants.

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## KORRESPONDENZ

## Kurzzusammenfassung

## Erfahrungen von sexualisierter Gewalt und psychische Belastungen bei männlichen und weiblichen neuankommenden Geflüchteten in Deutschland

Sexualisierte Gewalt im Kontext von Krieg und Vertreibung ist eine der schwerwiegendsten Menschenrechtsverletzungen, die häufig Traumafolgestörungen bei den Betroffenen auslöst (1). Sexualisierte Gewalt ist ein Tabuthema, das häufig zur Stigmatisierung der Betroffenen führt und folglich sowohl von diesen als auch vom sozialen Umfeld, in dem die Gewalt stattfindet oder die Betroffenen leben, umfassend verschwiegen wird (2). Sexualisierte Gewalt umfasst jegliche Art psychischer und physi-

scher Gewalt, die Geschlechtsmerkmale beziehungsweise Sexualität einer oder mehrerer Personen angreift. Insbesondere in Konflikt- und Postkonfliktregionen wird zwischen Vergewaltigung und/oder Gruppenvergewaltigung, sexualisierten Folterpraktiken, Genitalverstümmelungen, sexualisierter Erniedrigung und den Androhungen von sexualisierter Gewalt unterschieden (1). Nach dem derzeitigen Kenntnisstand ist die überwiegende Mehrheit der Betroffenen weiblich, in letzter Zeit hat jedoch eine wachsende Anzahl von Berichten die Existenz und das Ausmaß sexualisierter Gewalt gegen Männer und Jungen im Kontext von Krieg und Vertreibungen dokumentiert (3, 4). Wissenschaftliche Arbeiten, die systematisch sexualisierte Gewalterfahrungen und die möglichen Folgen für die psychische Gesundheit bei Geflüchteten untersuchen, fehlen bislang.

## Methode

Deskriptive Analysen zu psychischen Belastungen von Geflüchteten mit Erfahrungen von sexualisierter Gewalt werden anhand der Daten einer Querschnittstudie in einer Erstaufnahmeeinrichtung für Asylsuchende in Sachsen vorgestellt. Im Zeitraum Mai 2017 bis einschließlich Juni 2018 wurden von insgesamt 1 316 neu aufgenommenen erwachsenen Bewohnern 562 Personen (Rücklaufquote: 42,7 %) zu Erfahrungen von sexualisierter Gewalt, depressiven (PHQ-9), somatoformen (SSS-8) und posttraumatischen Belastungssymptomen (PCL-5) befragt. Der Fragebogen lag in zehn verschiedenen Sprachen (Albanisch, Arabisch, Englisch, Farsi, Französisch, Kurdisch, Russisch, Tigrinya, Türkisch und Urdu) hin- und rückübersetzt vor. Detaillierte Informationen zum Studienablauf finden sich bei Nesterko et al. (5). Erfahrungen von sexualisierter Gewalt wurden mit zwei Items der Life-Events-Checklist „Sexueller Übergriff (Vergewaltigung, versuchte Vergewaltigung, zu irgendeiner Art von sexueller Handlung durch Gewalt oder Androhung von Gewalt gezwungen werden)“ und/oder „Andere unerwünschte sexuelle Erfahrungen“ erfasst.

## Ergebnisse

Soziodemografische und fluchtbezogene Charakteristika der Gesamtstichprobe sowie der Subgruppen mit und ohne Erfahrungen von sexualisierter Gewalt sind *Tabelle 1* zu entnehmen. Insgesamt gaben 206 (36,7 %) Personen (128 von 392 Männern [32,6 %] und 78 von 170 Frauen [45,9 %]) an, sexualisierte Gewalt (81,6 % selbst erfahren [n = 168; 66 Frauen

TABELLE 1

## Soziodemografische und fluchtbezogene Charakteristika von Befragten mit und ohne Erfahrungen von sexualisierter Gewalt

|                                      | mit<br>Erfahrungen<br>N = 206 | ohne<br>Erfahrungen<br>N = 356 | gesamt<br>N = 562 |
|--------------------------------------|-------------------------------|--------------------------------|-------------------|
| <b>Alter</b>                         |                               |                                |                   |
| M/SD/-Spanne                         | 28,60/8,62/18–66              | 30,61/9,39/18–70 <sup>*1</sup> | 30,07/9,01/18–70  |
| 18–29 Jahre                          | 129 (62,6 %)                  | 195 (54,8 %)                   | 324 (57,7 %)      |
| 30–39 Jahre                          | 55 (26,7 %)                   | 105 (29,5 %)                   | 160 (28,5 %)      |
| 40–49 Jahre                          | 14 (6,8 %)                    | 37 (10,4 %)                    | 51 (9,1 %)        |
| > 50 Jahre                           | 8 (3,9 %)                     | 19 (5,3 %)                     | 27 (4,8 %)        |
| <b>Geschlecht</b>                    |                               |                                |                   |
| männlich                             | 128 (62,1 %)                  | 264 (74,2 %)                   | 392 (69,8 %)      |
| weiblich                             | 78 (37,9 %)                   | 92 (25,8 %)                    | 170 (30,2 %)      |
| <b>Herkunftsland</b>                 |                               |                                |                   |
| Kamerun                              | 62 (30,1 %)                   | 30 (8,4 %)                     | 92 (16,4 %)       |
| Eritrea                              | 16 (7,8 %)                    | 33 (9,3 %)                     | 49 (8,7 %)        |
| Irak                                 | 7 (3,4 %)                     | 20 (5,6 %)                     | 27 (4,8 %)        |
| Nigeria                              | 16 (7,8 %)                    | 19 (5,3 %)                     | 35 (6,2 %)        |
| Syrien                               | 9 (4,4 %)                     | 44 (12,4 %)                    | 53 (9,4 %)        |
| Türkei                               | 9 (4,4 %)                     | 43 (12,1 %)                    | 52 (9,3 %)        |
| Venezuela                            | 36 (17,5 %)                   | 49 (13,8 %)                    | 85 (15,1 %)       |
| andere <sup>*4</sup>                 | 51 (24,6 %)                   | 118 (33,1 %)                   | 169 (30,1 %)      |
| <b>Universitätsabschluss</b>         |                               |                                |                   |
| ja                                   | 89 (43,2 %)                   | 187 (52,5 %)                   | 276 (49,1 %)      |
| nein                                 | 116 (56,3 %)                  | 167 (46,9 %)                   | 283 (50,4 %)      |
| keine Angabe                         | 1 (0,5 %)                     | 2 (0,6 %)                      | 3 (0,5 %)         |
| <b>Fluchtdauer in Jahren</b>         |                               |                                |                   |
| M/SD/-Spanne                         | 1,84/2,69/0–21 <sup>*2</sup>  | 1,93/3,26/0–27 <sup>*3</sup>   | 1,9/3,1/0–27      |
| <b>Begleitung während der Flucht</b> |                               |                                |                   |
| allein                               | 103 (50,0 %)                  | 146 (41,0 %)                   | 249 (44,3 %)      |
| mit Fremden                          | 59 (28,6 %)                   | 82 (23,0 %)                    | 141 (25,1 %)      |
| mit Freunden                         | 19 (9,2 %)                    | 38 (10,7 %)                    | 57 (10,1 %)       |
| mit Angehörigen                      | 25 (12,1 %)                   | 90 (25,3 %)                    | 115 (20,5 %)      |

<sup>\*1</sup>N = 355; <sup>\*2</sup>N = 198; <sup>\*3</sup>N = 340; <sup>\*4</sup>Herkunftsland andere (N, gesamt):

Afghanistan (11), Algerien (4), Armenien (3), Äthiopien (20), Belarus (1), Kolumbien (1), Ghana (3), Georgien (9), Indien (2), Iran (7), Jordanien (2), Kosovo (1), Kuwait (1), Libanon (7), Liberia (1), Libyen (25), Mazedonien (2), Marokko (5), Myanmar (3), Palästina (13), Pakistan (7), Russische Föderation (12), Senegal (2), Somalia (7), Sri Lanka (1), Tunesien (7), Ukraine (1), staatenlos (11).

und 102 Männer] und 18,4 % [ $n = 38$ ; 12 Frauen und 26 Männer] ausschließlich Zeugenschaft) erlebt zu haben. Im Vergleich zu den Befragten ohne Erfahrungen von sexualisierter Gewalt wurden bei den Befragten mit solchen Erfahrungen höhere Prävalenzen für depressive Symptome (27 % versus 18 %; Odds Ratio [OR]: 1,6, 95%-Konfidenzintervall: [1,1; 2,5],  $p = 0,021$ ) und Symptome für posttraumatische Belastungsstörungen (PTBS) (45,1 % versus 30,3 %; OR: 1,8, [1,3; 2,6],  $p = ,001$ ) ermittelt (Tabelle 2). Darüber hinaus wurden Unterschiede zwischen weiblichen und männlichen Betroffenen geprüft. Es wurde eine höhere Prävalenz für somatoforme Beschwerden bei Frauen im Vergleich zu Männern (50 % vs. 29,8 %;  $\chi^2(1) = 8,2$ ,  $p = 0,004$ ) ermittelt, jedoch keine Geschlechtsunterschiede für Depressions- und PTBS-Symptome.

### Diskussion und Ausblick

Die Ergebnisse der vorliegenden Untersuchung liefern erstmals Daten zur Häufigkeit und den möglichen psychischen Folgen sexualisierter Gewalt bei weiblichen und männlichen Geflüchteten, die in Deutschland Asyl suchen. Die ermittelten Prävalenzen sollten jedoch vor dem Hintergrund eines möglichen Selektionsbias betrachtet werden: Sowohl eine Überschätzung aufgrund der Selektivität der Stichprobe, als auch eine Unterschätzung aufgrund der starken Tabuisierung des Phänomens sind denkbar. Aufgrund einer explorativen Herangehensweise wird die Notwendigkeit weiterer systematischer und differenzierter Auseinandersetzung mit dem Thema deutlich. Aus methodischen Gründen war es im Rahmen dieser Studie nicht möglich, die verschiedenen Formen sowie Zeitpunkte des Auftretens der sexualisierten Gewalt zu erfassen und entsprechend zu analysieren. Weiterführende Forschung sollte diesem Aspekt deshalb detaillierter nachgehen. Hierbei sollte weiterhin die Geschlechtsspezifität im Fokus stehen.

Die Ergebnisse der Studie zeigen, dass männliche Geflüchtete zwar seltener als weibliche, aber dennoch im vergleichbar erheblichen Ausmaß betroffen sein können. Die Vermutung liegt nahe, dass die Form des Gewaltaktes (zum Beispiel Vergewaltigung versus sexualisierte Folter), Anzahl der Übergriffe (wiederholt versus einmalig) sowie Angaben zu Zeitpunkten und Orten der Tat (vor, während, nach der Flucht beziehungsweise im Herkunftsland, in Transitländern, im sicheren Aufnahme-land) nützliche Informationen zum besseren Verständnis von psychischen Folgen und deren Behandlung bei den Betroffenen liefern würden. Zukünftige Forschung soll sich darüber hinaus störungsspezifisch auf mögliche Schutz- und Risikofaktoren sowie Symptomverläufe fokussieren. Darüber hinaus wäre es wünschenswert, dass die Thematik insgesamt mehr Aufmerksamkeit auch in der somatischen Medizin bekommt, da die betroffenen Patientinnen und Patienten dort oft mit anderen initialen Behandlungsanliegen gesehen werden, sexualisierte Gewalt aber sowohl ursächliche Bedeutung haben kann als auch im Sinne einer traumasensiblen Versorgung bekannt und beachtet werden sollte.

TABELLE 2

#### Somatoforme Beschwerden, Depressions- und PTBS-Symptome bei Befragten mit und ohne Erfahrungen von sexualisierter Gewalt

| Ohne Erfahrungen<br>n/N (%)                         | Mit Erfahrungen<br>n/N (%)                                  | OR<br>[95%-KI] <sup>*1</sup> |
|---|---|------------------------------|
| <b>somatoforme Beschwerden</b> (SSS-8 cut-off > 11) |   |                              |
| 97/354 (27,4 %)                                     | 75/200 (37,5 %)   | 1,4 [0,9; 2,1] <sup>*2</sup> |
|   | Frauen n/N: 38/76 (50 %)      Männer n/N: 37/124 (29,8 %)   | $\chi^2 = 8,2^{*3}$          |
| <b>Depressionssymptome</b> PHQ-9 cut-off > 14       |   |                              |
| 64/355 (18,0 %)                                     | 55/204 (27,0 %)   | 1,6 [1,1; 2,5] <sup>*4</sup> |
|   | Frauen n/N: 26/78 (33,3 %)      Männer n/N: 29/126 (23 %)   | $\chi^2 = 2,6^{*5}$          |
| <b>PTBS-Symptome</b> PCL-5 cut-off > 32             |   |                              |
| 106/350 (30,3 %)                                    | 92/204 (45,1 %)   | 1,8 [1,3; 2,6] <sup>*6</sup> |
|   | Frauen n/N: 37/78 (47,4 %)      Männer n/N: 55/126 (43,7 %) | $\chi^2 = 0,30^{*7}$         |

<sup>\*1</sup> kontrolliert für Alter und Geschlecht; <sup>\*2</sup>  $p = 0,053$ ; <sup>\*3</sup>  $p = 0,004$ ; <sup>\*4</sup>  $p = 0,021$ ;

<sup>\*5</sup>  $p = 0,107$ ; <sup>\*6</sup>  $p = 0,001$ ; <sup>\*7</sup>  $p = 0,598$ ;

OR, Odds Ratio; PTBS, posttraumatische Belastungssymptome; 95%-KI, 95%-Konfidenzintervall;

Die übergeordnete Aufgabe für klinisch und wissenschaftlich Tätige besteht darin, sexualisierte Gewalt zu enttabuisieren, das heißt, gezielt danach zu fragen, männliche Betroffenen mehr in den Fokus zu rücken, die Betroffenen allgemein zu entstigmatisieren und spezifische Versorgungsangebote zu entwickeln und entsprechend anzubieten.

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