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DISSERTATION

Evaluation of Needs and Development of a Diagnostic Tool for the Mental Health and Well-being of Arabic-Speaking Refugees

Untersuchung der Bedürfnisse und Entwicklung eines diagnostischen Instruments für die psychische Gesundheit und das Wohlbefinden arabischsprachiger Geflüchteter

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LIST OF ABBREVIATIONS

DSM	Diagnostic and Statistical Manual for Mental Disorders
HTQ	Harvard Trauma Questionnaire
IDP	Internally Displaced People
IOM	International Organization for Migration
ISMI-10	The Brief Internalized Stigma of Mental Illness Scale
KRI	The Kurdistan Region of Iraq
MADRS	Montgomery-Åsberg Depression Rating Scale
MENA	Middle East and North Africa
MHPSS	Mental Health and Psychosocial Support
M.I.N.I.	M.I.N.I. International Neuropsychiatric Interview
M.I.N.I.-AR	M.I.N.I. International Neuropsychiatric Interview in Modern Standard Arabic
MSA	Modern Standard Arabic
NGO	Non-Governmental Organization
PSQ	Patient Satisfaction Questionnaire
PHQ-9	Patient Health Questionnaire-9
PHQ-15	Patient Health Questionnaire-15
SCID	The Structured Clinical Interview
SPSS	Statistical Package for Social Science
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
WHO	World Health Organization

ABSTRACT ENGLISH

In the last decade, the number of distressed Arabic-speaking refugees and displaced persons has risen significantly as a result of ongoing political turmoil, war, and conflict in their homes. Pre, during and post- migratory stressors have led to an increase in untreated psychological symptoms that contrast only with limited culturally-sensitive research output and available mental health care services. Furthermore, this specific population have been identified as at-risk due to substantial cultural, linguistic, economic, and social challenges, leading to their marginalization, which further hampers their ability to access and benefit from effective and efficient culturally relevant mental health care systems. As far as the author's knowledge, the present dissertation represents the first comprehensive project aiming to address an existing gap in the understanding, access to and delivery of mental health care services for Arabic-speaking refugees in three host settings (Germany, Jordan and the Kurdistan Region of Iraq). The current thesis summarizes the work carried out in five separate publications, each with its own set of research questions touching upon the psychosocial needs of Arabic-speaking refugees in three different host settings. While some of the selected studies explore unique, first-hand perspectives and experiences of Arabic-speaking refugees, symptom representations, mental health stigma, and their evaluation of existing services, others shed light on specific dimensions of Arabic-speaking refugee mental health that deepen our understanding of their cultural and religious needs.

Furthermore, this thesis also offers insights, clinical applications, and diagnostic solutions, which can address several barriers to the access and effectiveness of mental healthcare by making the process easier for all beneficiaries within the system. Each publication covers a different aspect of refugee mental health; however, combined all studies can inform mental health providers and address the needs of struggling refugee communities and burdened healthcare systems alike. Our findings can promote the culturally specific needs of Arabic-speaking refugees and lead to a more cost-efficient use of available services and resources in refugee host countries and humanitarian aid settings that need assistance.

ZUSAMMENFASSUNG DEUTSCH

Im vergangenen Jahrzehnt konnte aufgrund von anhaltenten politischen Turbulenzen, Krieg und Konflikten in den jeweiligen Heimatländern, ein signifikanter Anstieg der Anzahl arabischsprachiger Geflüchteter und Vertriebener verzeichnet werden. Stressoren vor, während oder nach der Migration führten zu einer hohen Anzahl unbehandelter, psychiatrisch relevanter Symptome in dieser Population. Erschwert wird die Behandlung besonders durch unzureichende, kultursensible Forschungsvorhaben und -erkenntnisse sowie die geringe Verfügbarkeit und Erreichbarkeit von spezialisierten Einrichtungen der psychischen Gesundheitsversorgung. Zudem führen erhebliche kulturelle, linguistische, ökonomische und soziale Herausforderung zu einer zunehmenden Marginalisierung, welche die Möglichkeiten für eine effektive und effiziente Nutzung bestehender Gesundheitsversorgungssysteme erschwert und so das Risiko schwerer Krankheitsverläufe für diese Population deutlich erhöht. Nach dem Wissensstand der Autorin kann die vorliegende Dissertation als das erste, umfassende Projekt verstanden werden, welches zum Ziel hat, die bestehenden Lücken bei Erkenntnissen, Verfügbarkeit und Angebot von psychischer Gesundheitsversorgung für arabischsprachige Geflüchtete in drei Aufnahmegesellschaften (Deutschland, Jordanien und die irakische Region Kurdistan) zu adressieren. Hierfür werden in dieser Arbeit fünf separate Publikationen zusammengefasst, die mit ihren individuellen Forschungsfragen die psychosozialen Bedürfnisse arabischsprachiger Geflüchteter in verschiedenen Ländern thematisieren. Während einige dieser Studien die Perspektiven und Erfahrungen der arabischsprachigen Geflüchteten selbst in den Mittelpunkt stellen und Erkenntnisse über die Repräsentation psychischer Symptome, Stigmatisierung und die Einschätzung von verfügbaren Diensten liefern, werden in anderen die spezifischen Dimensionen der psychischen Gesundheit von arabischsprachigen Geflüchteten untersucht und leisten so einen Beitrag zu einem besseren Verständnis ihrer kulturellen und religiösen Bedürfnisse.

Darüber hinaus liefert diese Dissertation Einblicke, klinische Anwendungen und diagnostische Lösungen, um bestehende Barrieren bei Zugang und Effektivität von psychischer Gesundheitsversorgung abzuschwächen, indem Prozesse für alle im System beteiligten vereinfacht werden. Zwar adressiert jede Studie einen anderen Aspekt psychischer Gesundheit arabischsprachiger Geflüchteter, doch zusammen können alle Studien wichtige Informationen für psychische Gesundheitsdienstleistende liefern und sowohl die Bedürfnisse belasteter Flüchtlingsgemeinschaften als auch überlasteter Gesundheitssysteme in den Blick nehmen. Unsere Erkenntnisse tragen dazu bei, die kulturspezifischen Bedürfnisse arabischsprachiger Geflüchteter zu fördern und ebnen damit den Weg für die kosteneffiziente Nutzung verfügbarer

Dienstleistungen und Ressourcen in Aufnahmegesellschaften und zur Unterstützung humanitärer Hilfsangebote.

1. INTRODUCTION

The Arab world consists of 22 countries, representing a total of 423 million people globally (World Population Review, 2021). Arabic is one of the most spoken languages worldwide (Eberhard et al., 2020), with 25 countries calling it their official national language. Nowadays, Arabs not only reside in the Middle East, but due to forced migration and displacement, many Arabic-speakers reside in global settings, having relocated to neighboring countries or European host countries (Bajbouj et al., 2018; Georgiadou et al., 2018). Ongoing political conflicts and high unemployment rates, poverty, illiteracy, coupled with poor education, corruption, and struggling healthcare systems, have led to an increase in psychosocial problems and a poor overall quality of life for Arabic speakers (United Nations Development Program, 2016). Some literature has even estimated a higher occurrence of mental health burden in comparison with Western counterparts (Karam et al., 2006; Pocock, 2017). Moreover, the Arab region has one of the largest youth segments in the world (UNDP, 2016), many of which have grown up to witness different types of political turmoil and violence.

Among the most challenging obstacles in understanding Arab mental health is the dearth of updated literature and reports on prevalence rates and available resources in the region (Zeinun, 2020; Jaalouk et al., 2012). In the last published comprehensive report summarizing the mental health care services within the Arab region, it was reported that there is an average of 1 to 5 psychiatrists for every 100,000 inhabitants in all 22 countries – an insufficient number of clinical experts (Okasha et al., 2012). In contrast, there is a significantly wider range within the EU countries, with more recent reports claiming about 8 to 27 psychiatrists for every 100,000 inhabitants, with Germany in the lead (Eurostat, 2018). The lack of research output, updated statistics and information regarding available resources in the Arab world hinders the region's psychological growth and mental health competence (Jaalouk et al., 2012; Pockock, 2017; Okasha, 2012; Zeinun, 2020). Although specific conditions vary depending on the country and region, there is a general scarcity in the availability of epidemiological studies and national data concerning the current situation, even before the COVID-19 pandemic. This has led to an even wider gap in the availability of specialized psychological services and a general overall understanding of the needs and expectations of individuals coming from an Arab cultural background.

For this reason, Arab mental health care professionals (psychiatrists and psychologists) rely heavily on Western training methods and treatment approaches, often leading to misdiagnoses, culturally incongruent interpretations and treatment guidelines (Jaalouk et al.,

2012; Pocock, 2017). Compared to the West, publications appearing from the Arab world are significantly less in terms of output than the rest of the world (Jaalouk et al., 2012; Zeinun, 2020). There is also a gap in structured diagnostic assessment tools in Arabic, as evidenced by how several unvalidated, translated assessments are being used instead (Zeinun, 2020; Blackmore, 2020; Jaalouk et a., 2012; Bajbouj et al., 2018). Furthermore, there are currently no diagnostic assessments available in Modern Standard Arabic (MSA) corresponding to the DSM-5 criteria, which can be conducted by non-specialized interviewers offering benefits that promote resource-saving, accuracy, speed and precision in diagnosis (Zeinun, 2020). Nonetheless, over the last years, there has been a steady increase in research output and local training facilities in the region (Zeinun, 2020).

Within the context of Arabic-speaking communities, asylum seekers and refugees represent the highest number of displaced people since the Second World War (Cetorelli et al., 2017; Ibrahim & Hassan, 2017). The long-term effects of the 2003 Iraq war, the Arab Spring and the Syrian conflict have had impacts that continue to be felt today. An extensive history of conflict has led to several waves of forced migration within the Middle East and Western world, leading to more than 8.7 million resettled Arabic-speaking refugees globally (International Organization for Migration, 2018). It has been estimated that most individuals from conflict zones in the Middle East have experienced at least one traumatic event in their life (Fasfous, 2013). Furthermore, every one in five people who have been exposed to war or conflict suffers from depression, anxiety, post-traumatic stress disorder, bipolar disorder, or schizophrenia (Charlson, 2019). Coupled with difficulties integrating into host countries, asylum seekers and refugees are at risk for developing severe mental illnesses (Blackmore, 2020).

Whereas some Arabic-speaking asylum seekers and refugees have been temporarily internally displaced within their country, others are tasked with the difficult decision of whether they will move to a neighboring country (Spinks, 2013), where language and professional skills are more transferable or venture into the unknown West in search for stability and a new permanent home. Arabic-speaking populations now represent the largest proportion of displaced individuals within Europe's refugee population (Bundesamt für Migration und Flüchtlinge, 2018), leading them to face great difficulty in reconciling differences of culture, language, status, social support, religious practices and lifestyle (Jefee-Bahloul et al., 2016). Host settings cause disruptions in the familial ties and social support networks that individuals commonly access. Several advantages and disadvantages are associated with moving to a neighboring Arab country versus deciding to go to Europe. Sociodemographic variables, such

as age, gender and marital status, have been found to play a role in the relocation process and choice of destination (Spinks, 2013). Neighboring countries offer cultural proximity and familiar social networks and possibly family support. For women, traditional cultural norms play a crucial role (Al Krenawi, 2005), especially with regards to marriage prospects and child-rearing practices

Both Jordan and the Kurdistan Region of Iraq (a semi-autonomous region within Iraq) are relatively small, predominantly Muslim, Arabic-speaking countries located in the Middle East. Although both countries have faced substantial political turmoil, conflict, sectarian violence, and high poverty and unemployment rates, they have hosted large amounts of Internally Displaced Persons (IDP) and Syrian refugees. Some of the highest rates of psychological distress have been reported by internally displaced persons in the KRI region (Cetorelli et al., 2017). Official reports indicate low amounts of resources contrasting with an extensive treatment gap. In the whole of Iraq, there are an estimated 0.33 psychiatrists for every 100,000 inhabitants (Sadik, 2010). Jordan has similarly low rates with a reported 0.27 psychiatrists for every 100,000 inhabitants (United Nations Report, 2017).

Furthermore, healthcare systems are mostly centralized and not easily accessible to the entire population (Al-Salihy & Rahim, 2013). These numbers are not nearly enough to meet the psychiatric needs of both the host and refugee communities residing there. Furthermore, as mentioned above, an absence of epidemiological studies and prevalence rates of psychiatric illness further hamper an objective view of the situation on the ground. Due to a scarcity of resources, there is a heavy focus on refugee communities' essential and physical needs (Mental Health & Psychosocial Support Working Group, 2017). Nonetheless, several international organizations and NGOs have supported local organizations by training personnel, conducting needs assessments, offering diagnostic tools in Arabic and financial support. In 2013, the Charité launched several programs (Charité Help 4 Syria) in Jordan and KRI in order to support local initiatives.

In contrast, Germany is a high-income country with highly developed medical and educational structures. In 2015, Germany opened its doors to over 1 million refugees (Nicolai et al., 2015). Among the most prevalent psychiatric disorders diagnosed in Germany’s refugee population are anxiety, depression and PTSD (Hoell et al. 2021). Furthermore, according to official reports, Arabic is the most spoken language within its refugee population, demonstrating strong evidence for the need for culturally relevant treatment options and language-support services. Despite Germany’s inclusive and robust healthcare system, several cultural and language barriers hinder refugee groups from accessing psychiatric care (Bajbouj

et al. 2018). Although there are trained medical personnel, it is challenging, financially straining and resource-draining to depend on interpreters and cultural brokers to be present within the clinical context.

While the specific challenges for all three host countries (Germany, Jordan and Iraq) are different, one common denominator is the increased demand for effective and resource-saving psychiatric services. These needs contrast with low amounts of available, culturally congruent and evidence-based mental health services and diagnostic resources that are available in Arabic for this population (Bajbouj et al. 2018; Hassan et al., 2016). Although there has been a call for the development of services that promote the mental health and psychosocial wellbeing of refugees, the treatment gap remains high and the demand for services is met with several economic, linguistic and cultural barriers that hinder access to and effectiveness of psychotherapeutic services (Hassan et al., 2016), leading to the further marginalization of groups of refugees and an increasing toll of psychological distress. All of these factors have heavily burdened healthcare systems, leaving refugee communities at a great disadvantage in access to efficient and effective psychosocial care and adding more financial pressures. Therefore, it is clear that there is a need for services that can benefit Arabic speakers in the region and host settings alike.

Cultural beliefs shape how most Arabs view mental illness and choose to cope with it (Ahmed & Amer, 2012; Hassan et al., 2015). Prejudice and biases prevent individuals from the Arab cultural background from accessing and receiving quality mental health care in both the Arab region and in the Western world (Hassan et al., 2015). Mental health representations are grounded in deep-rooted cultural and religious beliefs and coping mechanisms, highlighting unique differences in the conceptualization and symptom representation within Arab cultural groups compared with Western biopsychosocial models (Hassan et al., 2015). Negative attitudes and beliefs about mental illness are embedded within a fear of being labeled as ‘crazy,’ a term that carries a heavy weight for Arabs (Rayan & Jaradat, 2016; Hassan et al., 2015). Traditionally, treatment approaches were sought to drive away evil spirits (the jinn) or the evil eye. Mental illness is also believed to result from distancing from God or even, at times, a direct punishment from God (Ahmed & Amer, 2012. Within the literature, it has been hypothesized that psychosomatic symptoms disguise emotional distress to avoid stigma, negative stereotyping, or discrimination. The current dominant narrative holds that psychological and emotional distress is often communicated through somatic complaints changing the picture of well-known disorders, such as anxiety or depression, to bodily aches or gastrointestinal concerns (Hassan et al., 2015).

Many psycho-socio-cultural factors influence help-seeking behaviors and the therapeutic process (Heath et al., 2016; Bolton, 2013; Awad and Amer, 2012). Public stigma, self-stigma and biases towards mental health are among the leading barriers to seeking psychological support in the Arab region (Bolton, 2013; Okasha et al., 2012; Angermeyer, 2003). Intricate familial and social ties also play an important role in forming this distance (Sadik et al., 2010). Because the wellbeing of the family is promoted over that of the individual, it is more challenging for patients from an Arab cultural background to access the mental health care system out of fear of shame. Strong attachments to traditional cultural norms, gender roles and values are favored over individual attitudes and beliefs (Rayan & Jaradat, 2016). Even within the therapeutic process, Arabs may be reluctant to share personal family issues or shameful feelings with mental health professionals who may be perceived as strangers (Almazeedi & Alsuwaida, 2014; Nasir & Al-Qutob, 2004). These attitudes and biases cause distrust and shape the way patients from an Arab cultural background interact with the mental health care system. Nonetheless, in recent years, there have been many Arab countries that have drafted national legislation and policies concerning mental health acts. Efforts have also been made to raise public awareness on the importance of positive wellbeing and deconstructing myths regarding the religious and cultural interpretations of mental illness.

In an effort to reconcile mental health with religious beliefs, many Arabs (Muslim and Christian) use religion as a form of psychological coping (Ahmed & Amer, 2012). Although the topic remains largely under-researched, existing literature confirms the benefits of religious coping on positive mental wellbeing and alleviating stress (Thomas & Barbato, 2020; Walker et al., 2012). During the early peak of the COVID-19 pandemic, reported rates of depression and anxiety were soaring internationally. According to a meta-analysis by Thomas and Barbato (2020), in the year of 2020, words such as “God,” “Allah,” and “prayer” were more searched than any other time in Google history. This may provide preliminary evidence for religious coping in times of great uncertainty. Nonetheless, negative religious coping has been associated with increased feelings of shame and guilt. These insights can support the development of mental health programs and encourage the integration of religious support within the umbrella of psychological support. Awareness of religious coping mechanisms and gaining an understanding of the myths, misconceptions and cultural representations within the Arab culture may give mental health professionals strategies and tools to effectively improve treatment outcomes and ensure that resources are used efficiently and sparingly.

Current rapid transformations, massive international collaborations and funds are dedicated to addressing this existing gap and finding solutions that can overcome multiple

barriers simultaneously. Now more than ever, in the wake of the COVID-19 pandemic, health care systems face even more challenges and increased burdens of disease, which threaten the stability of health care systems and the availability of resources even more. Several research efforts exist to offer scalable mental health services that directly target refugees groups (MEHIRA, STRENGTHS, Self-Help+, among others) (de Graaff et al., 2020; Böge et al. 2019). Many of them are also integrative hybrid models that offer practical solutions and low threshold interventions to address stigma and lack of specialized personnel. These projects aim to investigate the needs of Arabic-speaking refugees and offer evidence-based solutions that are culturally sensitive, resource-saving and easy to implement which can support many people at the same time. Combining action research with needs assessments is important so that projects like these make sure they are helpful and that resources are being used appropriately.

RESEARCH OBJECTIVES

The objective of this dissertation project was to address an existing gap in the understanding, access to and delivery of mental health care services for Arabic-speaking refugees in three host settings. The current thesis summarizes the work carried out in five separate publications, each with its own set of research questions touching upon the psychosocial needs of Arabic-speaking refugees in three different host settings (Germany, Jordan and the Kurdistan Region of Iraq). Some of the selected studies explore unique dimensions of Arabic-speaking refugee mental health that deepen our understanding of their needs, while others offer solutions and possible alternatives to some of the aforementioned barriers to healthcare. Each publication covers a separate aspect of refugee mental health. However, combined all studies can be used to address mental health providers by promoting the culturally-specific needs of Arabic-speaking refugees and leading to more effective and cost-efficient use of available services and resources.

A summary of the main objectives of each publication can be found below:

Publication One "Psychotherapy in Jordan: An investigation of the Host-and Syrian Refugee Community's Perspectives"

- Gain preliminary insights into the mental health services from the perspective of the beneficiary (Jordanian host and Arab refugee community)
- Evaluate the psychotherapeutic needs of refugee and host community members in Jordan

- Investigate the perceptions, preferences and expectations of refugee and Jordanian host communities regarding psychotherapy

Publication Two "Psychotherapy in the Kurdistan Region of Iraq (KRI): Preferences and Expectations of the Kurdish Host Community, Internally Displaced- and Syrian Refugee Community"

- Gain preliminary insights into the mental health services from the perspective of the beneficiaries (Kurdish host community, Internally Displaced Persons (IDPs) and Syrian refugees)
- Evaluate the psychotherapeutic needs of all these communities
- Investigate the perceptions, preferences and expectations of the three communities

Publication Three "Exploring the Representation of Depressive Symptoms and the Influence of Stigma in Arabic-Speaking Refugee Outpatients"

- Explore the representation of depressive symptoms in Arabic-speaking refugee outpatients
- Examine whether internalized mental health stigma is positively associated with somatic (physical) complaints
- Investigate the possibility of a relationship between psychological stress and somatic complaints

Study Four "Faith-based coping among Arabic-speaking refugees seeking mental health services in Berlin, Germany: An exploratory qualitative study"

- Explore faith-based coping strategies among Muslim, Arabic-speaking refugees who have relocated to Germany
- Investigate the impact of the migration and integration on the participants' religious identities and changes in practice that may have taken place
- Collect recommendations from the participants that aim to improve the German mental health care system for Arabic-speaking refugee outpatients

Study Five "Development of a Culturally Sensitive Arabic Version of the Mini International Neuropsychiatric Interview (M.I.N.I.-AR) and Validation of the Depression Module"

- Translate and develop a culturally-sensitive Arabic version of the M.I.N.I. 7.0.2 into Standard Modern Arabic (an initial pilot study was also conducted by our research group (see Churbaji et al. 2019)
- Validate the depression module of the M.I.N.I-AR

2. METHODS AND RESULTS

Only key methods and results are outlined in this section. Further details are presented in the publications found in the appendix.

STUDIES ONE AND TWO

For the first two studies, we worked in close collaboration with the Jiyan Foundation for Human Rights and local mental health providers with the initiative CH4S (CharitéHelp4Syria)

• 2.1 PUBLICATION ONE •

Karnouk, C., Böge, K., Hahn, E., Strasser, J., Schweininger, S., & Bajbouj, M. (2019). Psychotherapy in Jordan: An Investigation of the Host and Syrian Refugee Community's Perspectives. Frontiers in Psychiatry; 10:556. doi: 10.3389/fpsyt.2019.00556. PMID: 31456702; PMCID: PMC6700211.

Methods

Ethics Approval

The study is in accordance with the Declaration of Helsinki. The study protocol was approved by the Ministry of the Hashemite Kingdom of Jordan.

Participants and Procedure

In total, 100 participants took part in this study. Since recruitment of a randomized sample was not possible, convenience sampling took place. In order to ensure a balance in sociodemographic characteristics, patient groups were selected based on gender and whether they were from the host or refugee community. Several local partners cooperated with the Charité on this project and contacted suitable patients via telephone. The interview began after participants gave their consent. Several clinics across Jordan were involved in recruitment including, Al Hashimi Clinic, Bright-Future, Caritas Jordan and Center for Victims of Torture.

Inclusion Criteria

Inclusion criteria were as follows: (1) aged between 18-75 (2) from Syrian refugee community or local host community (3) currently receiving psychotherapy at one of the sites (4) having had at least 5 sessions (6) medication was allowed.

Questionnaires

For this study, an adapted version of the well-known Patient Satisfaction Questionnaire (PSQ) (Ware et al., 1983) was selected. The questionnaire was culturally adapted in collaboration with the NGO Miseror and revised in order to evaluate specific needs and perceptions regarding psychotherapy of psychiatric patients from the Middle East and North Africa (MENA) region. The PSQ is a self-report assessment, which contains 26 items divided into four subscale themes: (1) patient satisfaction, (2) bias, (3) effects of therapy and (4) stigma. All items are scored on a 5-point Likert scale. The Cronbach's alpha scores for all four subscales ranged from poor to excellent consistency measures at 0.64, 0.67, 0.91 and 0.92.

Statistical Analysis

The analysis included descriptive and inferential statistics for the PSQ and was performed with SPSS (Statistical Package for Social Science). Furthermore, the central tendencies of continuous measures were displayed in frequencies, percentages, means, variabilities in standard deviations, and the ranges for variables presented in the publication. Independent t-tests or a non-parametric test (Mann-Whitney U test) were used in order to detect differences between host- and refugee community

Results

39 males and 61 females were included in this study. 98% indicated that they were of Arab ethnic origin and that they were Muslim. 65% of the respondents were Syrian refugees, whereas 35% belonged to the Jordanian host community. No significant differences were detected between both subsamples across all four subscales.

Patient Satisfaction

Satisfaction was rated on an eight-item subscale concerning the consultation and therapist skills. Overall results showed high levels of satisfaction with an average mean of 4.71 (0.59). 94.1% rated their satisfaction with treatment as "very good" or "good," whereas only 5.6% rated their satisfaction as either "very poor" or "poor."

Bias

Attitudes and biases towards therapists were rated on a six-item subscale. Overall, the average response was 3.45 (1.14), indicating high rates of acceptability towards therapists. 52.1% reported that they accept differences in gender, religious affiliation, ethnicity and

political attitudes towards their therapist. The remaining 30.3% were undecided, while about 10.4% expressed disagreements with the statement.

Effects of Therapy

Effects of therapy were rated on a seven-item subscale. The average response was 4.44 (SD=0.80), indicating a general feeling of satisfaction with the treatment outcome. Results were mostly positive, with a total of 88% of respondents “agreeing” or “somewhat agreeing” with the positive effects of therapy. Only 3.1% reported non-favorable effects of therapy.

Stigma

The 4 items on the stigma subscale were reversed; therefore, lower approval rates point towards lower degrees of stigma. A mean score of 2.45 (SD=1.44) indicated moderate levels of self-stigma, indicating an ambivalence in some items.

• 2.2 PUBLICATION TWO •

Böge, K., Hahn, E., Strasser, J., Schweininger, S., Bajbouj, M. & Karnouk, C. (2021). Psychotherapy in the Kurdistan region of Iraq (KRI): Preferences and expectations of the Kurdish host community, internally displaced- and Syrian refugee community. International Journal of Social Psychiatry: 20764021995219. doi: 10.1177/0020764021995219. PMID: 33583235.

Methods

Ethics Approval

The study is in accordance with the Declaration of Helsinki and was approved by this ethics committee of the Charité - Universitätsmedizin Berlin.

Participants and procedure

101 participants were recruited in the Kurdistan region of Iraq from October to December 2017. At the time of recruitment, all participants were receiving psychotherapy from one of the Charité's local partner organizations. All assessments were given in Arabic, Sorani, or Kurmanji, depending on the participant's cultural background. Interviews were conducted by psychologists and psychiatrists who were not linked to the participant's treatment.

Inclusion criteria were as following: (1) aged between 17 and 75 years; (b) either from the Kurdish community, the Syrian refugee community, or internally displaced persons; (c) attended at least 4 sessions of psychotherapy within the past 6 months; (d) pharmacological medication was allowed.

In most cases, young adults or women were seeking psychotherapy and interested in participating in the study, making it a non-representative sample. Participants were selected based on sociodemographic variables such as gender and background (Syrian refugee-, Kurdish- or internally-displaced communities) to balance the three patient groups.

Recruitment took place through various local and international partner organizations within the KRI, particularly within the governate of Duhok. Candidates who met the study criteria were given an information sheet and signed the informed consent.

Interviewers spoke the mother-tongue of the participants; however, gender matching was not always possible due to a lack of resources. Furthermore, participant travel costs were covered; however, no financial compensation was rewarded for participation in the study.

Questionnaires

For this study, the same adapted PSQ instrument as in study one was used (see Karnouk et al. 2019). In this study, Cronbach's alpha ranged from unacceptable to good at 0.897, 0.419, 0.880 to 0.705, respectively.

Statistical Analysis

Descriptive and inferential statistics were calculated, followed by the central tendency of continuous measures and presented in the form of frequencies, percentages, means, standard deviations and variable ranges. A non-parametric Kruskal-Wallis one-way sub-analysis of variance test was used to detect possible differences between all three patient groups. Further details and tables are presented in the publication.

Results

61.5 % of the sample identified as female and 39.5 % as male. 98% indicated that they were of Arab ethnic origin and that they were Muslim. 86.1% of the respondents identified themselves as Kurds and 69.3% were Muslim. About half of the sample represented the host community (47.9%), while 29.8% were internally displaced community members (IDP) and 23.3% were Syrian refugees. The non-parametric Kruskal-Wallis one-way measure of variance showed no significant differences in responses across all three subsamples. Tables illustrating answer patterns and average scores on all items are available in the publications.

Patient Satisfaction

Satisfaction was rated on an eight-item subscale concerning the consultation and therapist skills. Overall results showed high levels of satisfaction with an average mean of 4.47 (0.79). 89.9% rated their satisfaction with treatment as "very good" or "good," whereas only 3.3% rated their satisfaction as either "very poor" or "poor."

Bias

Attitudes and biases towards therapists were rated on a six-item subscale. Overall, the average response was 2.45 (1.56), showing moderate levels of biases towards mental health providers 58.9% reported that they would "totally disagree" or "somewhat" disagree to differences in gender, religious affiliation, ethnicity and political attitudes between them and their therapist. Only 34% showed acceptability in differences.

Effects of Therapy

Effects of therapy were rated on a seven-item subscale. The average response was 4.27% (SD=0.79), indicating feeling satisfied with the treatment outcome. Results were mostly positive, with a total of 83.5% of respondents "totally agreeing" or "somewhat agreeing" with the positive effects of therapy. Only 7% reported non-favorable treatment effects.

Stigma

The four items on the stigma subscale were reversed; therefore, lower approval rates point towards lower degrees of stigma. A mean score of 2.37 (SD=1.45) indicated moderate to low levels of stigma. While 47% rejected items concerning self-stigma, answer patterns were distributed equally on the items covering family planning and public stigma.

STUDIES THREE, FOUR AND FIVE

The following three studies were carried out in tandem with the MEHIRA (Mental Health of Asylum Seekers and Refugees) study, a multicenter randomized controlled trial evaluating the effectiveness and cost-efficiency of a stepped care and collaborative model for the treatment of depressive symptoms in refugees (see Böge et al., 2019). All study participants were invited to participate in these studies after completing the baseline interview for the MEHIRA study, including several assessments evaluating aspects of refugee characteristics, mental health and psycho-socio-cultural factors.

Recruitment Pathways and Ethics Approval

All studies used the same recruitment pathways as the MEHIRA study design and received approval from the ethics committee of the Charité Universitätsmedizin Berlin (EA2/070/17). Recruitment sites included refugee accommodation, language schools, the Central Clearing Clinic, an outpatient clinic catering specifically to refugees and a psychiatric outpatient clinic for Arabic-speakers run by the Charité Benjamin Franklin Campus.

Inclusion and Exclusion Criteria

Inclusion criteria were identical across all three studies and defined as following: (a) age range between 18 and 65 years old, (b) native Arabic-speakers, (c) refugee or asylum seeker status, (d) showing depressive symptoms as measured by reporting psychological distress on "several days" or higher on at least 5 items on the PHQ-9. Furthermore, study exclusion criteria included: (a) missing informed consent, (b) presence of a psychotic disorder or suicidality based on the clinical interview and M.I.N.I. Neuropsychiatric Interview and (c) a score of four or more on the MADRS.

Assessments

All participants signed informed consent forms prior to the MEHIRA study begin. Administered questionnaires and interviews were selected for their cultural sensitivity and availability in Arabic. Either an Arabic-speaking psychologist or interpreter was present during the assessment process in the case of insufficient literacy or need for additional support. All data were collected in Berlin, Germany, between October 2018 and March 2020.

• 2.3 PUBLICATION THREE •

Lindheimer, N., Karnouk, C., Hahn, E., Churbaji, D., Schilz, L., Rayes, D., Bajbouj, M., & Böge K. (2020). Exploring the Representation of Depressive Symptoms and the Influence of Stigma in Arabic-Speaking Refugee Outpatients. *Frontiers in Psychiatry; 11*:579057. doi: 10.3389/fpsyt.2020.579057. PMID: 33281643; PMCID: PMC7689084.

Methods

Participants and procedure

A sample of 100 Arabic-speaking refugees were recruited in this cross-sectional study. After exclusion due to missing information, the total sample size was N=95. Study participants received a baseline assessment, including a comprehensive battery of tests lasting a total of about 90 minutes for completion.

Questionnaires

General sociodemographic information alongside the following four self-report questionnaires were included: The Patient Health Questionnaire-9 (PHQ-9) (Kroenke et al., 2001; Sawaya et al., 2016), the Patient Health Questionnaire-15 (PHQ-15), the Internalized Stigma of Mental Illness Scale-10 (ISMI-10) (Boyd et al., 2014) and the Harvard Trauma Questionnaire (HTQ) (Mollica, 1992). (For more in-depth information regarding each questionnaire, including description, scoring instructions, reliability, validity, cross-cultural sensitivity, and other psychometric properties, please refer to the published paper.)

Patient Health Questionnaire-15 (PHQ-15)

A 15-item, brief and commonly used multi-purpose screening instrument that covers over 90% of somatic symptoms (for example, stomach and back pain, headaches etc.) seen in primary care settings. Diagnostic criteria for this assessment are derived from the DSM-IV.

Patient Health Questionnaire-9 (PHQ-9)

A 9-item diagnostic instrument used for the detection of depressive symptom severity in primary care settings. Diagnostic criteria are derived from the DSM-IV.

The Brief Version of the Internalized Stigma of Mental Illness Scale (ISMI-10)

A subscale of the original long-form questionnaire including 10 of the items with the most robust psychometric qualities assessing internalized stigma of mental illness, such as reduced self-esteem, increased depression, reduced empowerment and perceived discrimination.

The Harvard Trauma Questionnaire (HTQ)

The HTQ is among the most widely used screening instruments for the detection of trauma-related symptoms, specifically among refugee populations. For this study, only the first 16 items of the last subscale were used, which assess the criteria for PTSD corresponding to the DSM-IV criteria.

Statistical Analysis

For this study, data was anonymized and stored in a spreadsheet. Descriptive statistics were used to analyze the data, such as sociodemographic variables and an overview of agreements on some of the items in the PHQ-15 and PHQ-9. In a next step, multiple regression analyses were performed in order to test for associations between stigma, somatic complaints and psychological distress while controlling for trauma. Finally, explanatory factor analysis was conducted, which identified culture-specific clusters that were present in the PHQ-15.

Results

A total of 95 participants (54 males and 41 females) were included in this study. The average age was 33.80 years, with an standard deviation of 9.69, ranging between 19 and 64 years. The majority of the respondents were Syrian, followed by respondents from Iraq and Palestine. Detailed sociodemographic characteristics, analyses and results are shown in table form in the manuscript.

Symptom Representation

The mean score for the PHQ-15 was 13.24 (SD=5.58), indicating moderate levels of somatic symptoms. The most common physical symptoms were *feeling tired or having low energy* (M=1.53; SD=0.70), *trouble sleeping* (M=1.44; SD=0.74), and *back pain* (M=1.26; SD=0.75).

The mean score for the PHQ-9 was 26.28 (SD=5.67), indicating moderate levels of psychological symptoms. The most common psychological symptoms *were feeling tired or*

having little energy (M=2.25; SD=0.89), *trouble falling asleep or staying asleep, or sleeping too much* (M=2.21; SD=1.01), and *feeling down, depressed, or hop*eless (M=2.18; SD=0.84).

A moderate, significant positive correlation was revealed between *psychological* and *somatic* complaints ($r = 0.54$, $p < 0.001$).

Influence of Stigma on Symptom Representation

The average score on the ISMI scale was 2.25 (SD=0.50), showing mild internalized levels of stigma. Furthermore, a mean score of 2.58 (SD=0.61) showed that, on average, study respondents had clinically relevant symptoms of PTSD according to the DSM-VI criteria.

In a next step, a multiple regression analysis with these two variables as predictors and the PHQ-15 and PHQ-9 as the dependent variables was performed.

Results for the PHQ-15 showed the HTQ as the only significant predictor for the PHQ-15 score ($\beta = 0.51$, $p < 0.001$), whereas the ISMI did not reach statistical significance($\beta = 0.09$, $p < 0.16$).

Results for the PHQ-9 showed significantly positive associations with both ISMI ($\beta = 0.25$, $p = 0.002$) and the HTQ ($\beta = 0.57$, $p < 0.001$).

Our study findings do not support the initial hypothesis and general opinion in the literature on Arab mental health stating that internalized stigma is associated with more somatic forms of psychological expression.

Factor Structure of the PHQ-15

For the factor structure of all PHQ-15 items, the Kaiser-Meyer-Olkin test for sampling adequacy was 0.724 (above the recommended 0.5 value). Barlett's test of sphericity was significant($\chi^2(105) = 334.36$, $p < 0.001$). Five distinct factors were revealed and labeled by an Arabic-speaking psychologist*: (1) symptoms of sadness, (2) pain-induced fatigue, (3) head-body-related symptoms, (4) indigestion and (5) sleep problems in males.*

• 2.4 PUBLICATION FOUR •

Rayes, D., Karnouk, C., Churbaji, D., Walther, L., & Bajbouj, M. (2021). Faith-Based Coping Among Arabic-Speaking Refugees Seeking Mental Health Services in Berlin, Germany: An Exploratory Qualitative Study. Frontiers in Psychiatry; 12:595979. doi: 10.3389/fpsyt.2021.595979. PMID: 33633605; PMCID: PMC7901912.

Methods

Participants and procedure

A purposive sample of 17 Arabic-speaking refugees were recruited, aiming to include representative gender and age groups. In this study, recruitment was limited to only one of MEHIRA's recruitment sites, an outpatient central clearing clinic catering only to refugees in Berlin, Germany. All interviews were conducted with an Arabic-speaking person and audio-recorded with the consent of participants. The interviews were conducted at the same clinic as recruitment and lasted an average of 36 minutes.

Interviews

A semi-structured interview was developed using a mix of a grounded-theory approach and adaptations from already existing questionnaires covering elements of religious coping (HOPE Approach to Spiritual Development). Participant sociodemographic information and other socio-cultural factors were collected. Furthermore, aspects related to refugee mental health pre, during, and post-flight were explored, emphasizing coping mechanisms, specifically religious coping..

Qualitative Analysis

All interviews were anonymized, transcribed and subsequently translated into English and entered into MAXQDA (20.0.8), a software for data coding and categorizing into distinct themes by use of a grounded theory approach. Code categories were then organized by topic and emerging ideas and themes were discussed and analyzed among a group of Arabic-speaking mental health professionals.

Results

A total of 17 participants (11 males and six females) were interviewed in this study. The average age was 34.7 years. While 12 of the respondents were Syrian, 5 were from Iraq. All participants identified as Muslim. Reasons for relocation ranged from political and religious

persecution to fleeing war and conflict. More detailed sociodemographic variables are presented in the paper.

The study findings were categorized into four overarching themes described below. While the first two themes cover general coping strategies and changes in religious practice from pre-migration to the present, the two final themes offer direct insights into the respondents' needs from the German mental health care system.

Faith-Based Coping During Flight

In this theme, participants recounted periods and situations where they utilized faith-based coping mechanisms (prayer, talking to God, thanking God, among others) that helped them overcome challenging circumstances.

Changes in Faith Practices Upon Arrival

In this theme, participants shared how relocating to Germany allowed them to freely reflect on their religious, cultural, and personal beliefs while gaining exposure to several cultural taboos and other religious and non-religious views. Most participants reported holding on to their Muslim identity; however, two respondents shared that they became more non-practicing after arrival. Several participants felt like they were more committed to religious practices in their country of origin. Although there are Muslim communities and institutions in Germany, one concern was that not all Muslim clerics come from the same countries and may have different religious views.

Faith-Based Coping Methods to Address Distress During Integration

In this theme, most respondents felt that their faith was a positive source of support for them throughout their journey and helped elicit feelings of comfort and reassurance during integration. Participants reported that taking part in activities such as attending religious services, prayer, consulting a religious leader etc. had a calming effect on them. Associations between positive wellbeing and closeness to God were frequently made.

Advice for German Mental Health Providers

When interviewees were asked what they thought was important for mental health providers in Germany to know, they mentioned that they preferred an Arabic speaker, someone who understands the Arab/Muslim culture, specific symptom expressions, the war and trauma they experienced and the importance of family and community to them.

• 2.5 PUBLICATION FIVE •

Karnouk, C., Böge, K., Lindheimer, N., Churbaji, D., Abdelmagid, S., Mohamad, S., Hahn, E., & Bajbouj M. (2021). Development of a culturally sensitive Arabic version of the Mini International Neuropsychiatric Interview (M.I.N.I.-AR) and validation of the depression module. International Journal of Mental Health Systems;15(1):24. doi: 10.1186/s13033-021-00447-1. PMID: 33736659; PMCID: PMC7977598

Methods

Participants and procedure

A sample of 102 Arabic-speaking refugees were recruited in this cross-sectional study. Two research assistants with a background in psychology received in-depth training in the M.I.N.I. Neuropsychiatric Interview and were supervised by two senior psychologists.

Questionnaires and Clinical Diagnosis

Participant symptoms were assessed by use of the M.I.N.I. Neuropsychiatric Interview, the PHQ-9 and HTQ. In parallel, all participants also visited a psychiatrist for a clinical diagnosis. Both interviewers and psychiatrists were blind to the diagnosis of the other. In total, the assessment lasted between 60-90 minutes.

M.I.N.I. Translation and Cultural Adaptation

Our research team initially adapted the M.I.N.I. 5.0.0 version and published the results in a pilot trial since no diagnostic assessment tools exist in Modern Standard Arabic (see Churbaji et al., 2019). The same multilingual, interdisciplinary team later expanded out of a need for a translated version and a culturally-sensitive version of this tool in the original MEHIRA study. All team members were Arabic speakers from different Arabic-speaking countries and had extensive experience in the mental health sector. The translation and adaptation process followed the guidelines of the World Health Organization. Further details regarding translation steps, challenging phrases, cultural idioms of distress, back-translation procedure, and final revisions are extensively discussed in the original papers (Churbaji et al., 2019; Karnouk et al. 2021). The papers also include examples of adaptations.

Questionnaires

Besides the clinical diagnosis made by psychiatrists, two other questionnaires (PHQ-9 and HTQ) were used to assess concordance with the M.I.N.I., particularly in the case of depressive and trauma-related symptoms.

Statistical Analysis

Descriptive analyses, frequencies and percentages of the sample were summarized. Furthermore, criterion validity for the M.I.N.I was assessed by comparing the M.I.N.I. diagnosis with that of the psychiatrist and also checking its concordance with the PHQ-9 and HTQ.

Results

In total, data from 102 participants (57 females and 45 males) was analyzed. The average age was 35.29 years (SD=9.66; range 19-61). Participants named six countries of origin: Syria (81%), Iraq (7.8%), Lebanon (4.5%), Egypt (3.9%), Palestine (2.9%) and Morocco (1.1%). Tables representing clinical and sociodemographic characteristics are illustrated in the publication.

M.I.N.I.-AR concordance with clinical diagnoses

96 participants received a diagnosis from a clinical expert and by the M.I.N.I.-AR. Only major depressive episodes, post-traumatic stress disorders, and generalized anxiety disorders had a prevalence rate of >5% in screening and clinical diagnosis; therefore, all other diagnoses were excluded from the validity assessment. Kappa values were moderate for depressive episodes (0.54) and showed slight agreement for both post-traumatic stress disorder (0.2) and generalized anxiety disorder (0.12).

M.I.N.I-AR concordance with the PHQ-9 and the HTQ

102 participants received the M.I.N.I.-AR, PHQ-9 and the HTQ. Kappa values indicated moderate agreements between the M.I.N.I.-AR and the PHQ-9 (0.58) and between the M.I.N.I.-AR and the HTQ (0.53).

3. INTEGRATIVE DISCUSSION, CLINICAL APPLICATIONS & FUTURE IMPLICATIONS

To the author's best knowledge, this is the first comprehensive attempt to explore the psychiatric needs, perspectives, perceptions, cultural manifestations and religious beliefs of Arabic-speaking refugees in three different host settings: Germany, Jordan and KRI. Furthermore, the publications presented in this dissertation offer in-depth insights into the coping styles and satisfaction levels of Arabic-speaking refugee community members who are currently seeking or have sought psychiatric treatment. Results from the five publications address an existing gap in the understanding, access to and delivery of psychiatric services for Arabic-speaking refugees worldwide and can help inform policy-makers, mental health professionals and humanitarian-aid workers by offering unique glimpses into the overall quality of services that are being provided. The findings reported in all five publications can improve existing psychiatric services and promote efficiency in treatment strategies by ensuring that resources are both efficiently allocated and culturally relevant to this specific population. While some study results give new insights into dimensions of Arabic-speaking refugee mental health, further deepening our understanding of their needs, help-seeking behaviors and coping mechanisms, others offer solutions and possible alternatives to barriers that hamper the efficient and effective delivery of mental healthcare in diverse host settings. Combined, all studies offer valuable considerations that can be used to securely develop and incorporate tangible, evidence-based strategies that promote culturally specific and religious psychosocial support strategies that can be put in place for Arabic-speaking refugees, eventually leading to a more favorable outcome for all beneficiaries.

Both sister studies (Jordan and KRI) revealed a trend towards more acceptance and less stigma in psychotherapy than previously indicated in the literature (Bolton, 2013; Almazeedi & Alsuwaidan, 2014; Gearing et al., 2012; Heath et al., 2016). Furthermore, both studies represent primary exploratory attempts of capturing patient perspectives and expectations based on their experience accessing mental health care services in both host countries. Although only refugee- and host community members were included in the Jordanian cohorts, in KRI, IDP community members were also a part of the study participants, reflecting the reality on ground. Moreover, both study cohorts included either Muslim Arab or Kurdish participants with similar cultural backgrounds, who were mostly female and within the same age group, making it easier to compare between studies. No significant differences were detected between the sample groups (refugee-, host- and/or IDP community members) in either study.

In the literature and medical practice, including the psychological service industry, high levels of patient satisfaction have been shown to indicate the quality of available care and accessible treatment services (Ghuloum et al., 2010; Hasler at al., 2004). This is why anonymous patient feedback and evaluations in most medical fields are being considered at an increasing rate to improve the quality of existing care services, as well as developing new treatment protocols that are both needs- and evidence-based (Hasler et al., 2004).

Overall, respondents in both the Jordan and KRI studies gave positive evaluations of the therapeutic process, as indicated by *high levels of satisfaction* with the consultations as represented by the subscale measuring patient satisfaction. Study participants in both cohorts reported being happy with available services and rated items, such as feeling heard, understood, and feeling in control, as high. These results indicate an increased acceptance and openness towards psychotherapy within Arabic-speaking communities, and although they need to be interpreted with caution, they may show signs of a positive change in attitude towards therapy. Furthermore, results are similar across both studies, with only minor differences appearing in ratings across both cohorts.

Similarly, with regards to the *effects of therapy* subscale, study findings also showed that patients rated the effects of therapy as relatively high in both studies, indicating therapy benefits. These results lead us to the conclusion that the psychological treatment they were offered resulted in subjective symptom alleviation and feeling good, demonstrating the general effectiveness of therapy in all subsamples of both studies.

Together, both of these findings show evidence towards the demand and usefulness of psychotherapy within Arabic-speaking populations and its potential effectiveness at supporting underprivileged communities who require psychological and humanitarian care. Nonetheless, several other reasons may have played a role in the reported positive ratings, such as short waiting periods (1-7 days) (Hasler et al., 2004; Shipley et al., 2000), a dire need for psychological care (Bogic et al., 2015), especially since the political climates in both host countries are relatively affected from ongoing war and conflict in nearby regions. Finally, another possible explanation is the existence of the "Dodo Bird's Verdict" (Luborsky et al., 2002; Ahn & Wampold, 2001; Budd & Hughes, 2009; Drisko, 2004). This phenomenon indicates that certain active ingredients within the therapeutic process, such as being validated, feeling heard, accepted and understood, all play a major role in patient satisfaction in therapy, thus influencing overall patient satisfaction.

In contrast to both subscales mentioned above, with regards to the 'bias towards therapist' subscale, there were differences in respondent ratings observed in both studies. In

the Jordan publication, there were no major biases towards psychotherapists observed in our study. Respondents seemed to accept a difference in religion, country of origin and ethnic background between therapist and patient. Nonetheless, two biases were revealed with regards to gender and a difference in opinion regarding national politics. With regards to gender, the findings are not surprising given the Arab cultural context and that the majority of the study participants were females. The study results rather confirm that within the Arab culture, there is a clear preference towards matching gender between therapist and patient (Awad & Amer, 2013; Heath et al., 2016). Furthermore, as the literature indicates, traditional gender roles seem to make it more acceptable for women to take on a nurturing and caring role (Al-Krenawi, 2005). Concerning the bias towards therapists with a different opinion regarding national politics, a general trend towards being undecided and disapproval was observed. Because most participants were either refugees fleeing war and conflict or community members hosting a large number of refugees and having limited resources, it may be understandable why patients would want a therapist who shares their opinions on matters that concern national politics and their wellbeing.

Furthermore, the overall *bias* subscale in the KRI publication was rated more ambivalently. Whereas gender was also revealed to be an important aspect of therapist acceptance (similar as in the Jordan cohort), 57% of the sample did not find it acceptable for the therapist to be a man and around 76% did not find it acceptable for a woman to be a therapist either. This is a much more pronounced bias, especially compared with only 30% with biases towards men and 6% with biases towards women in the Jordan sample. Particularly, both Jordan and KRI samples include predominantly Muslim female respondents with similar cultural norms and social fabrics. Therefore, results from the KRI study show an interesting contradiction that should be investigated further in future research. Previous research in Arab, Muslim countries has shown a clear preference and acceptance towards female therapists (Heath et al. 2016). Nonetheless, this contradiction may reflect changes in gender stereotypes and norms (Petty et al., 2006), or maybe simpler yet, an indication that the phrasing/wording in the questionnaire were misunderstood. Because levels of education or years of schooling were not collected as a part of this research, posing a limitation, it is difficult to interpret this hypothesis any further. Moreover, respondents in the KRI sample preferred the therapist sharing the same nationality, ethnic and or/religious group as the client. This is not surprising given the political climate and existence of minority groups (Kurds and Yazidis) (Cetorelli et al., 2017) in the sample.

Stigma has often been identified as one of the leading obstacles and social barriers, which hampers the access to and delivery of mental health care services in the Arab world (Okasha et al., 2012; Pocock, 2017; Nasir & Al-Qutob, 2004; Sadik, Bradley, Al Hasoon & Jenkins, 2010; Dalky, 2012, Rayan & Jaradat, 2016). Both Jordan and KRI studies showed low to moderate levels of stigma and more variability in patient respondents compared to the rest of the subscales in the PSQ. Within the Jordan study, participants showed ambivalence with regard to public stigma. Responses also showed ambivalence with regards to feelings such as shame and overall fear of judgment in both cohorts. Although our study findings report an ambivalence and variability in responses, study results still somewhat indicate a reduced overall stigma when compared with the existing literature from the Middle East and Arab world (Okasha et al., 2012; Almazeedi & Alsuwaidan, 2014; Nasir & Al-Qutob, 2004). According to Henderson (2013), increased use of services and an engagement with psychological services may have led to lower rates of public stigma (Henderson et al., 2013). Therefore, it is possible that due to ongoing public efforts, changes in mental health policies and availability of services, that the stigma is currently being addressed and decreasing. This is particularly interesting for the KRI cohort, especially since stigma in Iraq has been known to be even higher than in other parts of the Arab world (Bolton, 2013). Nonetheless, with regards to the item on family planning, within both samples, responses indicated ambivalence. This is understandable, given that family life and marriage are an integral part of the Arab culture and a person/family's reputation may negatively affect marriage prospects and the choice of a partner (Heath et al., 2016; Al-Krenawi, 2005).

Overall, Jordan and KRI studies make significant contributions to the literature by providing evidence that can support and promote improving the access and quality of mental health care services in regions where political climates are tense, treatment gaps remain high and infrastructures are missing valuable information. In return, necessary improvements can lead to an even more positive impact on patient satisfaction, biases, and public stigma. Another important aspect of Arab mental health is the growing evidence of the cultural manifestations of psychological/psychiatric symptom representations in Arabic-speaking populations. In the third publication presented in this thesis (Lindheimer et al. 2020), we aimed to explore the representation of depressive symptoms in a group of Arabic-speaking refugees who are based in Berlin. Since most literature to date reports the unique expressions of psychological symptoms and somatic complaints in this population (Al-Krenawi & Graham, 2000, Rohlof et al., 2014), this data was collected to inform mental health practitioners working with similar populations on the most common symptoms that are present in Germany's largest refugee

community. Another goal of this study was to analyze whether there was a relationship between somatic symptom expression and stigma. Especially since within the literature, it is commonly hypothesized that due to feelings of shame and guilt, Arabic-speaking communities tend to express their psychological distress in the form of somatic complaints, which are considered to be more socially acceptable. Results from this study are valuable since they make contributions that are particularly clinically relevant to a population that has become dispersed globally due to conflict and war and remains severely unresearched.

The main study findings revealed that Arabic-speaking refugees in the present sample showed moderate levels of both somatic and psychological symptoms. Similar to other studies (Al-Krenawi & Graham, 2000, Rohlof et al., 2014), these results add to existing literature, which reports a high level of physical complaints within Arabic-speaking communities and refugees. A detailed analysis of specific overlapping items between the PHQ-9 and the PHQ-15 revealed that the most prevalent psychological complaints were a "feeling of energy loss" and "sleep disturbances." Although both of these items are considered to be commonly associated with depressive symptoms, they still have a somatic base, highlighting the prevalence of physical complaints in the expression of psychological distress. Furthermore, there also seemed to be a moderately positive correlation between both psychological and somatic symptoms within the study.

For this reason, these findings support evidence collected in China, possibly showing similarities in collectivist cultures in the importance of merging issues related to the mind and body, as opposed to their clear separation in most Western cultures (Ryder et al., 2008; Hinshaw, 2007). Our study findings can inform mental health professionals, especially in Western countries, on specific symptoms to pay attention to when servicing clients from Arabic-speaking communities. These results can also have clinical benefits since it is very likely that Arabic-speakers go back and forth between medical professionals with physical complaints that remain unattended that could have originated from psychological distress. For example, "sleep disturbances" and nightmares are commonly experienced by both clients who suffer from depression and PTSD (American Psychiatric Association, 2014; Sandahl et al., 2017). For this reason, focusing on improving sleep in such populations may have positive clinical benefits that help alleviate symptoms and decrease the risk for other associated adverse outcomes, such as cognitive deficits, the risk for suicidality, pain and decreased social interactions, which can help promote a more positive overall wellbeing.

Study results also revealed that contrary to indications in the literature regarding Arab mental health (Al-Krenawi, 2005; Ma-Kellams, 2014), no relationship could be determined

between internalized stigma and somatic complaints, but rather with psychological symptoms. Moreover, rates of internalized stigma were fairly low in this sample. These findings are similar to both the Jordan and KRI studies mentioned above. Several reasons may be playing a role in this, such as increased public efforts in battling stigma and normalizing the access of mental health care services, increased interaction with the mental health care system and higher levels of education, which have all been shown to lower levels of stigma (Henderson et al., 2013). Because these treatments were offered within the context of a study, it may be possible that participants who agreed to join the study had decreased levels of stigma compared with those who declined. These findings highlight the need for future research to focus on the role of stigma within this population and a more in-depth investigation of factors contributing to the lowered levels of internalized stigma in different settings.

Furthermore, five independent factors were identified, with the support of Arabic-speaking psychologists, in the PHQ-15: (1) symptoms of sadness, (2) pain-induced fatigue, (3) head-body-related symptoms, (4) indigestion, and (5) male sleep problems. Interestingly, three of these factors were similarly identified in a qualitative study of Arabic-speakers in Dubai (Sulaiman et al., 2001). The purpose of the study was to identify common terms and descriptions that were used to describe depressive symptoms. In summary, the symptom clusters shed light on a reciprocal relationship between cultural explanatory mental health models within the Arab, symptom expression, and language use. Within the Arabic language, emotions and idioms of distress are usually described by the use of metaphors and poetic expressions that can only be understood by someone who understands the culture or comes from a similar cultural background. These findings can have clinical implications, especially since they present a need for cultural knowledge and awareness when Western therapists are matched with clients. This can help avoiding misdiagnoses and possibly lead to a faster and more accurate clinical diagnosis.

Only a few studies address issues related to the Muslim faith or faith-based coping among refugee communities within European host contexts. Our unique qualitative study used a grounded theory approach and aimed to analyze the major religious themes that arise pre, during, and post-refugee journeys, shedding light on what was before and the changes that took place throughout displacement during the integration in their new host country. These were summarized in three main themes that emerged as a part of this study: (1) faith-based coping during flight, (2) changes in faith practices upon arrival, and (3) faith-based coping methods to address distress during integration. The fourth and final theme (4) focused on advice for German mental health providers from the first-hand perspective of community members.

First Three Themes (during flight, upon arrival and during integration)

Most participants in this sample originated from either Syria or Iraq and had experienced ongoing conflict and traumatic events in their homes, leading them to seek refuge in several host countries before landing in Germany. Not only were they exposed to challenging circumstances before their flight, but for many of them, the journey itself (by land or boat) and their arrival to Europe posed severe risks and threats to their lives and that of their loved ones. Once participants arrived in Germany, they were faced with the further challenge of social, legal, and economic integration. Several cultural and linguistic barriers, coupled with pre-migratory stressors, led to negative psychological impacts, resulting in increased numbers of community members seeking mental health treatment at specialized clinics. In our sample, the relationship to faith informed us whether respondents were more likely to seek faith-based support instead of traditional psychiatric models of treatment. Participants' relationship to faith, prior to their displacement coupled with their personal experience with the integration process (whether they felt that they belonged or not), informed whether they sought out religious coping mechanisms (seeking guidance from local religious leaders or institutions) and whether they found them to be helpful at alleviating psychological distress. These findings were similar to those found in Syrian cohorts in the Netherlands (Safak et al., 2020).

Interestingly, differences were found between male and female participants within this study. Whereas females were more likely to show a greater commitment towards religious coping (attending religious lectures, support groups and seeking support from religious leaders), male participants shared more distrust towards religious entities and reported a less likely engagement or attendance of religious activities. These findings are also consistent with similar studies covering the topic (Hassan et al., 2015, McMichael, 2002; Grupp et al., 2019). Similar to our Jordan and KRI studies mentioned above, traditional gender roles and cultural norms appear to be a lot more pronounced and expected from female Arabs than their male counterparts. Several issues may be playing a role here, such as family pride, reputation, and an unwillingness to possibly tarnish future marriage prospects. Moreover, female refugees may be more likely to be residing with their families for cultural reasons, whereas it is more acceptable for males to lead a more independent lifestyle for males.

Fourth Theme (Advice for German Mental Health Providers)

In summary, it was clear from the interviews that participants wished for overall more acceptance and greater empathy and awareness of their cultural backgrounds from German mental health care providers. A crucial point was for mental health providers to understand the

reasons for their stress and also apply culturally relevant interpretations to their struggles. These results are also confirmed by the study above (Lindheimer et al., 2020), showing the unique symptom expressions and linguistic nuances associated with this particular cultural group. Furthermore, participants also highlighted the importance for mental health providers in understanding the social and familial fabrics associated with the Arabic culture, most commonly the importance of family and the community in the healing process. Finally, it was also crucial for the participants that mental health providers accepted and respected their faith-based coping mechanisms. It would be useful in this case for German mental health care providers to develop more training on cultural competence (cultural awareness, skills and knowledge), as well as take the opportunity to engage with local religious leaders that may be a good access point to this community and possibly lead to a beneficial and resource-saving outcome for all if a coalition was to be built between them.

The translation and cultural adaptation of the M.I.N.I.-AR emerged from a need to address an existing gap in available translated and culturally-sensitive diagnostic tools, which can be used with Arabic-speaking refugee communities in Modern Standard Arabic, corresponding to the latest DSM-5 diagnosis. This gap was not only evident in German research (Böge et al., 2020). However, it can also greatly contribute to the scarcity of existing diagnostic tools available for Arabic-speakers seeking an accurate diagnosis in mental health care settings globally. Because our sample mainly consisted of refugees of community members, the study results did not have sufficient evidence to support the validation of all diagnostic modules in the instrument, except for the depression module. The main reason for this was that most prevalent disorders found in refugee populations were depression and PTSD, which often overlap in symptoms (Georgiadou et al., 2018). Nonetheless, findings from the study showed a moderate agreement between the depression module (A) and the expert diagnosis and the PHQ. Moreover, slight to moderate agreements were found between the M.I.N.I-AR, expert diagnoses and the HTQ with regards to PTSD.

Study findings are similar to our initial pilot study (Churbaji et at., 2020) and other validation studies using the same method (Otsubo et al., 2005). In the original M.I.N.I publication (Sheehan et al., 1998), the authors had reported relatively poor agreements between clinical diagnoses and the M.I.N.I. One reason which was given for this discrepancy was that the M.I.N.I is oversensitive, meaning that it is more likely to overdiagnose. Initially, overdiagnosis was seen as possibly less harmful than missing a diagnosis. Because experts are humans and exposed to limited information, they may also be likely to overlook certain

diagnoses (Mueller & Segal, 2014) or even ignore them based on clinical judgment and experience. Furthermore, the M.I.N.I. is a relatively comprehensive tool that has several benefits, including its general accuracy, efficiency, and ability to be administered by trained non-specialists. This is particularly relevant to Western host countries in which timely, fast diagnoses are needed and culturally sensitive human resources are less available and may be costly to hire additional personnel. Nonetheless, it would be of great clinical interest for the other modules in the M.I.N.I.-AR to be validated in future research in order for it to be used more accurately and widely in both clinical and research settings.

Strengths and Limitations

All of the presented studies give rich, detailed accounts of the first-hand perceptions and perspectives of Arabic-speaking host- and refugee communities. This participatory approach promotes the empowering involvement of community members in treatment plans and each unique study summarizes efforts that can be made towards improving culturally sensitive mental health care in its own way. One of the major noticeable strengths in most studies was the presence of an Arabic-speaking team comprised of Arabic-speaking psychologists to help with the data collection and interpretation of the findings, ensuring professionalism and cultural relevance. Furthermore, one of the main identifiable limitations of all studies below is the lack of randomized sampling procedure, resulting in a convenience sample, thus making it challenging for our results to represent the general Arabic-speaking refugee population. Therefore, our findings should be interpreted with caution and future research is recommended to follow up on our results.

Both Jordan and Kurdistan studies collect information regarding patient satisfaction and therapeutic effects, which are essential in improving services, their access, and more accurate allocation of resources. In the data collection process of both studies, the Charité team was not on-ground to directly supervise or assist. The main reason for this was because we worked directly in collaboration with the Jiyan Foundation, our research partner, who had the main task of collecting data. Therefore, although we had ongoing online meetings and calls with them, any information or limitations regarding recruitment on-ground was reported to our research team by our local partners. In both studies, although the sample was recruited from several hospitals, clinics and institutions and it was not randomized. Nonetheless, the study design attempted to create a balance between all subsamples. For this reason, study results should be interpreted with caution. Furthermore, although both studies included subsamples, no differences were detected within the subsamples. It would, however, be interesting to see

future research conduct a larger-scale study in order to confirm that there are, in fact, no differences detected among local-, refugee- and IDP community members in both host countries. Another limitation in both studies was that no data was collected with regards to clinical diagnosis, length of treatment, or educational level. It would be great for future research to investigate these factors in greater detail in order to be able to make more accurate interpretations and observations about the presented data.

With regards to the study on symptom representation in Arabic-speakers, all selected questionnaires were validated and came as highly recommended with regards to cultural sensitivity in the literature (Zijlema et al., 2013). This study also represents among the first attempts to understand the unique symptom representations in Arabic-speaking refugee groups, laying a good foundation for future research, as well as valuable input with regards to its clinical uses. Nonetheless, several limitations are also present in this study. Besides the limitation of convenience sampling mentioned above, because our sample was made up of mostly Syrian refugees, representing the largest group of Arabic-speaking refugees in Germany, the generalizability of study results to the Arab world should be made with caution.

The qualitative study covering religious coping should also be seen in the light of several strengths, especially regarding the cultural interpretations and psychosocial support needs that the interviewers directly expressed. Because there is little research available on the faith-based strategies utilized by Arabic-speaking refugees in European host countries, this study offers unique insights that can be used as a foundation to inform future larger and more comprehensive quantitative studies. Furthermore, the interviews were directly conducted in Arabic by a psychologist, making it less likely for any biases to be present and creating a safe space for participants to express themselves freely in their native tongue. Nonetheless, this was the only qualitative study presented in this dissertation and therefore, some limitations emerged. Due to time constraints, only a limited number of interviews took place, making it more challenging to generalize these findings to the general Arabic-speaking refugee population. Furthermore, although respondents reported feeling safe and more comfortable expressing themselves in Arabic, the topic of religion is still sensitive, especially given the political and religious climates in the participant's country of origin, especially for participants who were victims of religious persecution. Furthermore, all participants were also receiving individual psychiatric support or group psychotherapy at the clinic where the interviews were taking place, possibly making them warier in their responses. Finally, gender matching between interviewer and participant was not always possible.

Finally, the M.I.N.I.-AR study has several strengths, particularly regarding the existing gap in the lack of availability of diagnostic tools catering to the Arab world. The M.I.N.I-AR is the first diagnostic tool available corresponding to the DSM-5 and available in Modern Standard Arabic. This is especially useful since MSA is pluralistic and can be understood by all Arabic speakers alike. Furthermore, the instrument can be used to address existing barriers in research and clinical practice (Miranda et al., 2005), as well as increase the access of minorities in mental health care settings, particularly in Western host settings. Finally, the M.I.N.I.-AR was developed by a multilingual and multi-disciplinary research team made up of Arabic speakers from different Arab countries who followed the WHO translation guidelines, making it highly culturally relevant and applicable.

Regarding its limitations, one of the major concerns was that to conduct a sound and robust validation, a gold standard structured interview is needed (such as the SCID) and a clinically diverse sample. This was not possible due to the limited resources in our clinic and the prevalence of certain psychiatric disorders (depression and PTSD). Furthermore, study results also show that expert diagnosis often diagnosed adjustment disorder to patients, whereas this disorder is not available in the M.I.N.I. It may be the case that this diagnosis was given in order to avoid over-stigmatizing the population and also as a time buffer before a more severe diagnosis was given.

Conclusion

In conclusion, the present comprehensive dissertation, including its five unique publications, gives preliminary insight into the psychosocial needs of Arabic-speaking refugees from the mental health care services in three of the largest host countries: Jordan, the Kurdistan Region of Iraq, and Germany. The findings from each publication can be used to address existing social, linguistic, and cultural barriers and aim to improve the access, effectiveness, and cultural sensitivity of mental health care services for Arabic-speaking refugees not only in these host countries but also within a global and larger humanitarian context. This dissertation also arms German mental health providers with direct recommendations, clinical applications, and a diagnostic manual, which can effectively improve psychiatric care and be used as soon as possible. Moreover, the findings from these publications can promote the culturally-specific needs of Arabic-speaking refugees, as well as a cost-efficient use of available services and resources in all settings. Finally, this thesis aims to tackle issues through several different ecological levels of analysis (the individual, community, institutional, national and policy level), making it applicable to key players and stakeholders who are seeking immediate

systemic change and are interested in promoting the most optimal results for all involved beneficiaries.

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5. STATUTORY DECLARATION

"I, **Carine Karnouk**, by personally signing this document in lieu of an oath, hereby affirm that I prepared the submitted dissertation on the topic "**Evaluation of Needs and Development of a Diagnostic Tool for the Mental Health and Well-being of Arabic-Speaking Refugees" - "Untersuchung der Bedürfnisse und Entwicklung eines diagnostischen Instruments für die psychische Gesundheit und das Wohlbefinden arabischsprachiger Geflüchteter"** independently and without the support of third parties, and that I used no other sources and aids than those stated.

All parts which are based on the publications or presentations of other authors, either in letter or in spirit, are specified as such in accordance with the citing guidelines. The sections on methodology (in particular regarding practical work, laboratory regulations, statistical processing) and results (in particular regarding figures, charts and tables) are exclusively my responsibility.

Furthermore, I declare that I have correctly marked all of the data, the analyses, and the conclusions generated from data obtained in collaboration with other persons, and that I have correctly marked my own contribution and the contributions of other persons (cf. declaration of contribution). I have correctly marked all texts or parts of texts that were generated in collaboration with other persons.

My contributions to any publications to this dissertation correspond to those stated in the below joint declaration made together with the supervisor. All publications created within the scope of the dissertation comply with the guidelines of the ICMJE (International Committee of Medical Journal Editors; www.icmje.org) on authorship. In addition, I declare that I shall comply with the regulations of Charité – Universitätsmedizin Berlin on ensuring good scientific practice.

I declare that I have not yet submitted this dissertation in identical or similar form to another Faculty.

The significance of this statutory declaration and the consequences of a false statutory declaration under criminal law (Sections 156, 161 of the German Criminal Code) are known to me."

Date Signature

6. DECLARATION OF OWN CONTRIBUTIONS OF PUBLICATIONS

Carine Karnouk contributed the following to the below listed publications:

Publication 1: **Karnouk C**, Böge K, Hahn E, Strasser J, Schweininger S, Bajbouj M. Psychotherapy in Jordan: An Investigation of the Host and Syrian Refugee Community's Perspectives. Front Psychiatry. 2019 Aug 13;10:556. doi: 10.3389/fpsyt.2019.00556. PMID: 31456702; PMCID: PMC6700211.

Contribution: Coordination with local partners regarding data collection, I completed literature review predominantly on my own, I facilitated the cultural understandings related to the interpretation of data entirely on my own, I wrote the entire introduction of the manuscript, I partially contributed to the drafting and editing of the methods section, I worked on table 1, 2, 3, 4 and 5 along with another co-author and edited the results section of the manuscript, I significantly contributed to the interpretation of the data (particularly tables 2, 3, 4 and 5), I took the lead on manuscript preparation, I wrote the entire discussion section of the paper, I edited the entire manuscript, I submitted the manuscript to the journal and mostly handled the revision process.

Publication 2: Böge K, Hahn E, Strasser J, Schweininger S, Bajbouj M, **Karnouk C.** Psychotherapy in the Kurdistan region of Iraq (KRI): Preferences and expectations of the Kurdish host community, internally displaced- and Syrian refugee community. Int J Soc Psychiatry. 2021 Feb 14:20764021995219. doi: 10.1177/0020764021995219. PMID: 33583235.

Contribution: I significantly contributed to the literature review, I mostly facilitated the cultural understandings of the data, I wrote the entire introduction of the manuscript, I reviewed and edited the methods and results section, I supported with the interpretation of the data (especially tables 2, 3, 4 and 5), I wrote the discussion section along with one co-author, I revised the entire manuscript and I partially supported with the submission and revision process.

Publication 3: Lindheimer N, **Karnouk C,** Hahn E, Churbaji D, Schilz L, Rayes D, Bajbouj M, Böge K. Exploring the Representation of Depressive Symptoms and the Influence of Stigma in Arabic-Speaking Refugee Outpatients. Front Psychiatry. 2020 Nov 12;11:579057. doi: 10.3389/fpsyt.2020.579057. PMID: 33281643; PMCID: PMC7689084.

Contribution: I contributed to the design, implementation and supervision of the entire research study, I supported in the selection of scales and their translation, I coordinated the data collection, I partially recruited participants for the study, I partially collected the data in Arabic, I supported the first-author in interpreting the data and facilitating cultural understandings, I revised and edited the entire manuscript, I partially contributed to the literature review and development of several discussion points, I partially supervised the submission process and supported in the revision letter.

Publication 4: Rayes D, **Karnouk C,** Churbaji D, Walther L, Bajbouj M. Faith-Based Coping Among Arabic-Speaking Refugees Seeking Mental Health Services in Berlin, Germany: An Exploratory Qualitative Study. Front Psychiatry. 2021 Feb 1;12:595979. doi: 10.3389/fpsyt.2021.595979. PMID: 33633605; PMCID: PMC7901912.

Contribution: I partially supported in the design, planning and supervision of the entire study, I supported in the development of the qualitative questionnaire and the phrasing of the questions

in Arabic, I mostly recruited all study participants, I partially supported in thematically analyzing the data and facilitated in cultural understandings, I reviewed the manuscript and revision letter.

Publication 5: **Karnouk C**, Böge K, Lindheimer N, Churbaji D, Abdelmagid S, Mohamad S, Hahn E, Bajbouj M. Development of a culturally sensitive Arabic version of the Mini International Neuropsychiatric Interview (M.I.N.I.-AR) and validation of the depression module. Int J Ment Health Syst. 2021 Mar 18;15(1):24. doi: 10.1186/s13033-021-00447-1. PMID: 33736659; PMCID: PMC7977598

Contribution: I developed, designed and implemented the entire study, I selected the scales in the study, I co-translated and supervised the translation of the M.I.N.I.-AR in Arabic, I supervised the editing, translation and back-translation of the entire M.I.N.I.-AR and made sure it corresponded to the WHO translation standards, I worked on figure 1 covering the "steps of translation" and table 1 covering "examples of cultural adaptations", I partially collected the data, I mostly did the literature review on my own, I wrote the entire introduction, I supported in the drafting of the methods section, I edited the results section, I supported in the interpretation of the data, I wrote the entire discussion section, I mostly took the lead on the manuscript preparation, editing, submission and revision process along with other co-authors.

_____

Signature, date and stamp of first supervising university professor / lecturer

• 7.1 PUBLICATION ONE •

Karnouk, C., Böge, K., Hahn, E., Strasser, J., Schweininger, S., & Bajbouj, M. (2019) Psychotherapy in Jordan: An Investigation of the Host and Syrian Refugee Community's Perspectives. *Front Psychiatry,10*:556. doi: 10.3389/fpsyt.2019.00556. PMID: 31456702; PMCID: PMC6700211.

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Rank	Full Journal Title	Total Cites	Journal Impact Factor	Eigenfactor Score
1	World Psychiatry	4,055	30.000	0.010540
2	JAMA Psychiatry	8,414	16.642	0.044550
3	Lancet Psychiatry	3,223	15.233	0.015210
4	AMERICAN JOURNAL OF PSYCHIATRY	42,369	13.391	0.037870
5	PSYCHOTHERAPY AND PSYCHOSOMATICS	3,597	13.122	0.005520
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7	MOLECULAR PSYCHIATRY	18,460	11.640	0.047200
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9	SCHIZOPHRENIA BULLETIN	15,697	6.944	0.027700
10	NEUROPSYCHOPHARMACOLOGY	24,537	6.544	0.042870
11	JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY	18,604	6.486	0.023410
12	JOURNAL OF THE AMERICAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY	19,482	6.250	0.019260
13	ADDICTION	18,607	5.953	0.028990
14	BRITISH JOURNAL OF PSYCHIATRY	24,481	5.867	0.022960
15	Epidemiology and Psychiatric Sciences	950	5.684	0.003550
16	PSYCHOLOGICAL MEDICINE	23,080	5.475	0.039400
17	JOURNAL OF PSYCHIATRY & NEUROSCIENCE	2,989	5.182	0.004700
18	AUSTRALIAN AND NEW ZEALAND JOURNAL OF PSYCHIATRY	6,624	5.084	0.008440
19	DEPRESSION AND ANXIETY	7,923	5.043	0.015870
20	ACTA PSYCHIATRICA SCANDINAVICA	12,498	4.984	0.010890
21	JOURNAL OF PSYCHOPHARMACOLOGY	5,808	4.738	0.010900
22	PSYCHONEUROENDOCRINOLOGY	16,507	4.731	0.030420
23	Translational Psychiatry	5,384	4.691	0.021220
24	BIPOLAR DISORDERS	5,070	4.490	0.007870
25	CURRENT OPINION IN PSYCHIATRY	3,675	4.266	0.006830

26	JOURNAL OF CLINICAL PSYCHIATRY	18,677	4.247	0.020820
27	CNS DRUGS	4,364	4.206	0.007540
28	PROGRESS IN NEURO-PSYCHOPHARMACOLOGY & BIOLOGICAL PSYCHIATRY	9,823	4.185	0.013170
29	EUROPEAN NEUROPSYCHOPHARMACOLOGY	6,920	4.129	0.015110
29	EUROPEAN PSYCHIATRY	4,876	4.129	0.007890
31	JOURNAL OF PSYCHIATRIC RESEARCH	14,397	4.000	0.022480
32	INTERNATIONAL JOURNAL OF NEUROPSYCHOPHARMACOLOGY	6,259	3.981	0.014550
33	SCHIZOPHRENIA RESEARCH	19,650	3.958	0.032460
34	INTERNATIONAL JOURNAL OF EATING DISORDERS	8,732	3.897	0.010160
35	Current Psychiatry Reports	3,447	3.864	0.009390
36	PSYCHOSOMATIC MEDICINE	12,288	3.810	0.010150
37	JOURNAL OF AFFECTIVE DISORDERS	26,957	3.786	0.053380
38	WORLD JOURNAL OF BIOLOGICAL PSYCHIATRY	2,191	3.713	0.004710
39	Journal of Attention Disorders	3,100	3.668	0.006190
40	Journal of Behavioral Addictions	945	3.628	0.002700
41	EUROPEAN ARCHIVES OF PSYCHIATRY AND CLINICAL NEUROSCIENCE	3,837	3.617	0.005400
42	CANADIAN JOURNAL OF PSYCHIATRY-REVUE CANADIENNE DE PSYCHIATRIE	4,997	3.612	0.006340
43	EUROPEAN CHILD & ADOLESCENT PSYCHIATRY	4,492	3.553	0.007980
44	CNS SPECTRUMS	2,200	3.504	0.003180
45	AMERICAN JOURNAL OF GERIATRIC PSYCHIATRY	6,363	3.480	0.010470
46	DRUG AND ALCOHOL DEPENDENCE	16,889	3.322	0.033280
47	HARVARD REVIEW OF PSYCHIATRY	1,527	3.264	0.002310
48	PSYCHOPHARMACOLOGY	22,959	3.222	0.025210
49	PSYCHIATRY AND CLINICAL NEUROSCIENCES	3,259	3.199	0.003780
50	JOURNAL OF CLINICAL PSYCHOPHARMACOLOGY	4,928	3.134	0.005340
51	AMERICAN JOURNAL OF MEDICAL GENETICS PART B-NEUROPSYCHIATRIC GENETICS	4,061	3.016	0.006150
52	GENERAL HOSPITAL PSYCHIATRY	4,909	2.989	0.007420
53	JOURNAL OF PSYCHOSOMATIC RESEARCH	12,468	2.947	0.011540
54	INTERNATIONAL JOURNAL OF GERIATRIC PSYCHIATRY	8,476	2.940	0.010410
55	Early Intervention in Psychiatry	1,240	2.923	0.003380

56	SOCIAL PSYCHIATRY AND PSYCHIATRIC EPIDEMIOLOGY	7,477	2.918	0.013170
57	JOURNAL OF CHILD AND ADOLESCENT PSYCHOPHARMACOLOGY	2,677	2.901	0.004860
58	DEMENTIA AND GERIATRIC COGNITIVE DISORDERS	4,507	2.886	0.004780
59	Behavioral Sleep Medicine	1,007	2.871	0.002420
60	Frontiers in Psychiatry	3,308	2.857	0.012340

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Psychotherapy in Jordan: An Investigation of the Host and Syrian Refugee Community's Perspectives

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Little is known about patient satisfaction, bias, stigma, and the effects of psychotherapy within the Kingdom of Jordan or the Arab world in general. The purpose of this study was to explore the perceptions of both the Jordanian host and refugee community members from the psychotherapeutic services offered at various mental health care settings in Jordan. A sample of 100 patients who received psychosocial expert interventions was recruited between October and December 2017 in Amman, Jordan. Participants were either from the host or Syrian refugee community or contacted through multiple organizations working in the mental health field. The Patient Satisfaction Questionnaire, which consists of four subscales covering 1) patient satisfaction, 2) bias toward therapy, 3) effects of therapy, and 4) stigma, was administered. As a means of investigation and exploration, descriptive statistics of participant responses are displayed. Results revealed overall high rates of satisfaction with provided services and perceived benefits of psychotherapeutic interventions. However, respondents showed ambivalence regarding bias and stigma. Subsample analyses indicated no significant differences between both communities. These findings give an understanding of perceptions surrounding psychotherapy in Jordan and some insights on therapeutic processes that may be useful for clinical applications and future research.

Keywords: mental health, psychotherapy, Arab, Jordan, refugees, stigma, bias, satisfaction

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INTRODUCTION

In the last decade, political turmoil and unstable social climates have spread across many countries in the Arab region (1–3). The effect of these volatile circumstances and related stressful experiences has left many individuals at risk of developing a mental illness, with little to no access to mental health care (3). Despite growing efforts in the development of mental health care structures and treatment providers to serve these vulnerable populations, the treatment gap remains high (2–6).

In that context, the Kingdom of Jordan is a relatively small, middle-income country located in the Middle East with a population of nearly 10 million inhabitants (7, 8). Similar to other Arab countries, the health care infrastructure in Jordan is highly urbanized (5), and the country's social climate is heavily influenced by ongoing political conflicts in nearby countries, which has led to an increase in poverty rates and the resettlement of refugee populations within the country (9, 10). According to a UN report, about 14.4% of the population live under the internationally specified

poverty line (8). Furthermore, it has been indicated that only an estimated 305 individuals per 100,000 inhabitants are diagnosed with mental illness (2), indicating an existing diagnostic and treatment gap. As a consequence, rates of psychological distress (39%) and prevalence of mental disorders (26.3%) are high ranking (11). Worldwide, the prevalence of psychological distress ranges roughly between 5% and 27%. It has been reported to be even higher in certain segments of the population that face stressful situations, such as economic, work, or immigration-related conditions (12).

High prevalence rates contrast with only a small number of mental health institutions. In the whole of Jordan, there are only three mental health hospitals for adults, one specialized psychiatric hospital for children (8, 13), and only 64 outpatient facilities (2). In total, there are only two psychiatrists, 0.27 psychologists and 0.04 nurses for every 100,000 inhabitants in Jordan (8, 13)—a pattern that is present and known throughout the whole Middle East (14–16).

These numbers give insight into the current state of affairs regarding mental health care in Jordan, where the population size has significantly grown between the years 2004 and 2015 (7, 8). In addition, ongoing conflicts in Syria have led Jordan to host around 660,000 Syrian refugees, and the numbers are still rising (8). This high number of displaced individuals in need of humanitarian assistance and psychiatric care contributes to an even larger treatment gap. Evidently, the arrival of the Syrian refugee population, with a wide range of affective disorders, is causing additional challenges to Jordan's already strained mental health care system (8). Some reports even state treatment gaps as high as a 94% in Jordan if all severity levels of mental illnesses are taken into consideration (6). These numbers are similar to those observed in other developing countries ranging between 76.3% and 85.4% (16).

A lack of psychiatric facilities, culturally sensitive treatment programs, and professional training and poor coordination between clinicians and centralized treatment services in metropolitan cities (2, 5), coupled with further social barriers, have been identified as major challenges in the access and delivery of mental health services (5, 10, 17, 18). Some of these barriers include bias toward therapy, beliefs about mental illness, family structures, religion, education, and socioeconomic status among many more (4–21). Most importantly, stigma has also been identified as one of the leading barriers in seeking mental health care treatment (19, 22), especially in the Arab World (23).

Within the Arab culture, there is a strong emphasis on the collective wellness of the group over that of the individual. For this reason, a strong attachment to social norms and values can be readily observed (5, 10). Because mental disorders are conceptualized adversely, stigmatization is considered very high in the Arab region (17, 18). This leads to perceived public mental illness stigma and self-stigma, causing a delay in active help-seeking behavior (10, 17, 18, 22). Saving face to avoid embarrassment, especially to protect family honor (5, 24) and out of fear of being labeled by others as "crazy" or "majnoun," is common (18, 24).

Despite growing challenges, efforts have been made to address this wide treatment gap, although resources remain scarce and national legislation supporting the beneficiaries of treatment is insufficient (1–3, 5). There has also been a call to conduct more clinical research in the Arab region, investigating conceptualizations of mental illness, available treatment options, help-seeking behaviors, quality of mental health services, patient satisfaction, and perceptions on mental health (9, 15, 17, 18). The need for further research to guide appropriate treatment services for the development of effective and efficient psychiatric care in Jordan is evident. There also seems to be a call for primary mental health care clinicians to assist in removing already existing barriers and attempting to reduce biases toward psychotherapy by looking more deeply into the therapeutic encounter (14, 25, 26). Therefore, a better understanding of the currently existing mental health care structures and perspectives on existing psychological services is urgently needed. The present study is the first to our knowledge that investigates the perceptions, preferences, and expectations of both members of the host and Syrian refugee community regarding psychotherapy in Jordan. Moreover, the study allows clinicians and researchers to gain preliminary insight into the current practices of mental health services in Jordan from the perspective of mental health care beneficiaries. Patient expectations, preferences, and perceptions pertaining to the local mental health care providers were collected and covered topics that include patient satisfaction with services, biases toward therapy, expectations from therapists, perceptions of the therapeutic relationship, effects of therapy, and finally stigma.

METHODS

Participants

In total, a sample of 100 patients receiving psychotherapeutic expert interventions were recruited between October and December 2017 in Amman, Jordan. Paper-and-pencil interviewing (PAPI) took place, whereby a trained international or local interviewer read the question to the participants and filled out the answers into the questionnaire in Arabic. Before the beginning of data collection, all interviewers received in-depth training to ensure consistency in the interview process.

Inclusion criteria for the current research study were defined as the following: 1) individuals aged between 18 and 75 years; 2) belonging either to the Jordanian host or Syrian refugee community; 3) are currently or have been receiving psychotherapy or counseling sessions at organizations, which provide mental health services; 4) have attended a minimum of five sessions before the initial interview; 5) additional psychotropic treatment was allowed.

Procedures

Grounded in this selection process, recruitment of a randomized sample was not viable. However, within the current study design, a balance between different patient groups with regard to sociodemographic variables, such as gender and background (host and Syrian refugee community), was established.

As a sampling method, cooperating local organizations contacted possible study participants directly and asked for their willingness in participating. Next, suitable patients who gave

their consent were contacted *via* telephone by local staff of Jiyan Foundation and CH4S. Recruitment was conducted throughout the following mental health service providers in Jordan: Al Hashmi Clinic, Bright Future, Caritas Jordan, CharitéHelp4Syria, Center for Victims of Torture, Institute for Family Health, Nippon International Cooperation for Community Development, Happiness Again, Saudi Hospital, and Médicins du Monde. A signed informed consent was requested from all patients who met the inclusion criteria before officially joining the study.

Because of logistic challenges, a matching of gender between interviewers and participants could not always be ensured. All participants were reimbursed for their travel costs. Furthermore, all respondents received a CH4S telephone hotline number in case follow-up psychological support was needed. After completion of the pencil-and-paper questionnaires, data were translated into the English language by local translators and entered into a spreadsheet using the Statistical Package for the Social Sciences (SPSS) 25, iOS. The study design has been approved by the ethical committees of Charité-Universitätsmedizin, Berlin, Germany, the Department of Health (DoH), and the Ministry of Health (MoH), Amman, Jordan.

Questionnaire

Because of the scarcity of appropriate and culturally sensitive questionnaires, which measure patient perceptions and preferences regarding psychotherapy in the Arab world, a comprehensive assessment tool was developed in close collaboration with the NGO Misereor for this research project. The Patient Satisfaction Questionnaire (PSQ) was designed with an aim to assess patient perspectives on the process of psychotherapy, including beliefs, perceptions, and expectations regarding patient satisfaction, perceived bias, stigma, and the effects of therapy in Arabic-speaking countries.

During the development of the questionnaire, regular feedback concerning the acceptability, feasibility, and comprehensibility was collected through pilot trials, enabling continuous optimization until saturation was reached.

The PSQ is a 26-item brief self-report assessment tool consisting of four subscales, which cover the core domains of mental health care delivery: (1) therapeutic relationship, (2) bias, (3) effects of therapy, and (4) stigmatization (see details in **Tables 2–5**). Within the first domain, titled the therapeutic relationship (nine items), answers were scored on a 5-point Likert scale ranging from "very poor" (1), over "fair" (3), to "very good" (5). Concerning the second to the fourth domains, bias (six items), effects of therapy (seven items), and stigmatization (four items), all items were scored on a 5-point Likert scale, ranging from "totally disagree" (1), over "neither agree nor disagree" (3), to "totally agree" (5). In the present study, the four subscales displayed questionable and inconsistent to excellent consistency measures with Cronbach's alpha ranging from 0.64 and 0.67 to 0.91 and 0.92, respectively (27).

Statistical Analysis

All analyses were composed of descriptive and inferential statistics for the PSQ. Data were collected and stored electronically in a spreadsheet for a spreadsheet using the Statistical Package for the Social Sciences (SPSS) 25, MacOS-X. The central tendency of continuous measures was represented using frequencies, percentages, means, and the variability with standard deviations as well as the range of each variable. All categorical variables were represented with percentages along with the actual counts so that missing measures are apparent in **Tables 1** to **5**. To detect possible differences between host and refugee communities subsample analyses, it is indented to use either independent t-tests or a nonparametric test, the Mann-Whitney U test.

RESULTS

For the current study, 100 participants, 39 males and 61 females, were recruited, ranging in age from 18 to 74 years. A vast majority of 98% stated Arab as their ethnicity and indicated Islam as their religious affiliation. Two-thirds of the sample were from the Syrian refugee community (65%) whereas one-third was of Jordan origin (35%). **Table 1** presents all assessed sociodemographic characteristics of the sample in detail.

Overall, descriptive results of frequencies concerning each of the four subscales are displayed in **Tables 2** to **5**. Additionally, subsample analysis between the host and Syrian refugee community members was performed. Mean scores of each subscale and results of each tests are displayed in **Table 6**. Lastly, depending on normal or nonnormal distribution of data, one independent t-test and three Mann-Whitney U tests were conducted, revealing no significant differences between all

TABLE 1 | Sociodemographic characteristics of the survey sample.

Sociodemographic data	*N* = 100
Gender (%)	
Male	39.0
Female	61.0
Age (years, %)	38.24 (13.98)*
18–28	31.0
29–39	30.0
40–54	24.0
55–74	15.0
Ethnicity (%)	
Arab	98.0
Mandaean	1.0
Other	1.0
Religion (%)	
Muslim	98.0
Christian	1.0
Mandaean	1.0
Target Group (%)	
Host community	35.0
Syrian refugee community	65.0
Waiting time (%)	
Same day	31.0
1–7 days	47.0
1–2 weeks	10.0
3–4 weeks	7.0
More than 4 weeks	4.0
Missing	1.0

*Waiting time = Waiting time between registration with the organization and first contact with a physician or psychologist. *Mean and standard deviation for age.*

TABLE 2 | Descriptive Statistics of the Patient Satisfaction Questionnaire.

How was the doctor or nurse at…	Very poor (%)	Poor (%)	Fair (%)	Good (%)	Very good (%)	Mean (SD)
Making you feel at ease? (n = 99)	2.0	0	5.1	19.2	73.7	4.63 (0.76)
Letting you tell your story? (n = 99)	0	0	4.0	15.2	80.8	4.77 (0.51)
Really listening? (n = 98)	0	0	5.1	13.3	81.6	4.77 (0.53)
Being interested in you as a whole person? (n = 99)	0	0	5.1	13.1	81.8	4.77 (0.53)
Fully understanding your concerns? (n = 99)	0	1.0	11.1	17.2	70.2	4.58 (0.73)
Showing care and compassion? (n = 99)	0	1.0	4.0	21.2	73.7	4.68 (0.60)
Explaining things clearly? (n = 99)	0	1.0	3.0	10.1	85.9	4.81 (0.53)
Helping you to take control? (n = 99)	0	1.0	3.0	18.2	77.8	4.73 (0.57)
Overall rating of the consultation treatment (n = 99)	0	0	6.1	19.2	74.7	4.69 (0.58)
Overall rating on the Patient Satisfaction Questionnaire	**0.2**	**0.4**	**5.2**	**16.3**	**77.8**	**4.71 (0.59)**

The full sample consisted of N = 100 participants. Very poor = 1, Poor = 2, Fair = 3, Good = 4, Very good = 5.

TABLE 3 | Descriptive statistics of the Bias Questionnaire.

It is acceptable if the therapist…	Totally disagree (%)	Somewhat disagree (%)	Undecided (%)	Somewhat agree (%)	Totally agree (%)	Mean (SD)
Is a man.	17.0	13.0	24.0	25.0	21.0	3.20 (1.37)
Is a woman. (n = 99)	2.0	4.0	14.1	22.2	57.6	4.29 (0.99)
Has a different opinion regarding national politics.	21.0	12.0	48.0	13.0	6.0	2.71 (1.12)
Is from another country.	1.0	2.0	29.0	22.0	46.0	4.10 (0.96)
Belongs to a different ethnic group. (n = 99)	8.1	2.0	35.4	32.3	22.2	3.59 (1.11)
Belongs to a different religious group.	13.0	10.0	31.0	22.0	24.0	3.34 (1.30)
Overall rating on the Bias Questionnaire	**10.4**	**7.2**	**30.3**	**22.7**	**29.4**	**3.54 (1.14)**

The full sample consisted of N = 100 participants. Totally disagree = 1, Somewhat disagree = 2, Neither agree nor disagree = 3, Somewhat agree = 4, Totally agree = 5.

TABLE 4 | Descriptive statistics of the Effects of the Therapy Questionnaire.

	Totally disagree (%)	Somewhat disagree (%)	Undecided (%)	Somewhat agree (%)	Totally agree (%)	Mean (SD)
I mostly feel relieved after the therapy sessions.	0	4.0	4.0	18.0	74.0	4.62 (0.75)
The therapy helped me to handle my problems and my distress.	1.0	2.0	6.0	34.0	57.0	4.44 (0.78)
Now I can understand much better where my problems came from.	1.0	3.0	8.0	25.0	63.0	4.46 (0.85)
With therapy, it is easier for me to face the difficulties in my life.	1.0	2.0	9.0	35.0	53.0	4.37 (0.81)
Therapy gave me new hope and new perspectives for my life.	1.0	2.0	10.0	27.0	60.0	4.43 (0.83)
I now get along better with the people in my immediate environment.	1.0	2.0	9.0	28.0	60.0	4.44 (0.82)
Therapy helped me to find solutions for my problems.	1.0	1.0	10.0	35.0	53.0	4.38 (0.79)
Overall rating on the Effects of the Therapy Questionnaire	**0.8**	**2.3**	**8.0**	**28.8**	**60.0**	**4.44 (0.80)**

The full sample consisted of N = 100 participants. Totally disagree = 1, Somewhat disagree = 2, Neither agree nor disagree = 3, Somewhat agree = 4, Totally agree = 5.

TABLE 5 | Descriptive statistics of the Stigma Questionnaire.

	Totally disagree (%)	Somewhat disagree (%)	Undecided (%)	Somewhat agree (%)	Totally agree (%)	Mean (SD)
I think if others know about my psychological problems, they lose respect for me.	39.0	25.0	5.0	20.0	11.0	2.39 (1.45)
I am afraid of possible disadvantages in regard to my family planning and family life because of my psychological problems. (n = 99)	26.3	21.2	1.0	26.3	25.3	3.03 (1.60)
I am scared that people are thinking or talking about me in a negative way because I am in therapy for my psychological problems.	34.0	20.0	7.0	27.0	12.0	2.63 (1.48)
I feel ashamed that I have to go to a therapist for my problems. (n = 99)	63.6	18.2	2.0	10.1	6.1	1.77 (1.25)
Overall rating on the Stigma Questionnaire	**40.7**	**21.1**	**3.7**	**20.9**	**13.6**	**2.45 (1.44)**

The full sample consisted of N = 100 participants. Totally disagree = 1, Somewhat disagree = 2, Neither agree nor disagree = 3, Somewhat agree = 4, Totally agree = 5.

TABLE 6 | Descriptive statistics and analysis of subsample differences for all subscales.

Outcome Variable	Mean (SD)	*P*
Satisfaction Subscale		
Host community (*n* = 32)	4.72 (0.55)	0.26[a]
Refugee community (*n* = 65)	4.70 (0.40)	
Bias Subscale		
Host community (*n* = 33)	3.37 (0.67)	0.12[b]
Refugee community (*n* = 65)	3.61 (0.71)	
Effects of the Therapy Subscale		
Host community (*n* = 33)	4.48 (0.78)	0.27[a]
Refugee community (*n* = 65)	4.43(0.60)	
Stigma Subscale		
Host community (*n* = 33)	2.74 (1.18)	0.11
Refugee community (*n* = 65)	2.23 (0.89)	

[a]*Mann-Whitney U Test (two-tailed);* [b]*independent samples t-test;* $\alpha = 0.05$ *(two-tailed)*

four subscales in both subsamples: $U_{\text{Satisfaction}} = -1.13$, $p = 0.26$, $t_{\text{Bias}}(96) = -1.576$, $p = 0.12$, $U_{\text{EffectsofTherapy}} = -1.07$, $p = 0.27$ and $U_{\text{Stigma}} = -1.62$, $p = 0.11$. Therefore, the current results present total responses of participants.

Patient Satisfaction

Participants rated their satisfaction regarding the consultation and treatment of the therapist on eight items. Overall, results showed high satisfaction rates on the subscale, with an average mean of 4.71 (0.59). In total, 77.8% rated the interpersonal level of treatment as "very good" and 16.3% as "good." Only 0.2% described experienced treatment delivery as "very poor" and 0.4% as "poor," whereas 5.2% rated it "fair." **Table 2** illustrates all descriptive statistics of the patient satisfaction subscale on an item level as well as overall.

Bias

Attitudes in terms of bias toward the therapists were rated on a subscale with six items. In total, bias against the therapist was relatively low; instead, the average response of 3.54 (1.14) indicates high rates of acceptability. With 29.4% stating "totally agree" and 22.7% "somewhat agree," a majority of 52.1% accepted possible differences in gender, religious affiliation, ethnicity, or political attitudes with their therapist. Still, 10.4% expressed their disapproval with "totally disagree" and 7.2% with "somewhat disagree," indicating minimal rates of bias against their therapist, whereas 30.3% remained "undecided." **Table 3** depicts all descriptive statistics of the bias subscale for all six items and overall scores.

Effects of Therapy

Concerning the effects of therapy, the overall mean of participants displays overall high rates of approval, with 4.44 (0.80SD) on average. In total, 60% of the respondents stated "totally agree," whereas 28.8% endorsed the beneficial effects with "somewhat agree," resulting in 88.8% of respondents who expressed positive effects of the therapy. Merely 3.1% believed that the therapy led to no favorable effects, with rates at 0.8% for "totally disagree" and 2.3% for "somewhat disagree," respectively, whereas 8.0% were undecided. **Table 4** represents all descriptive statistics of the effects of therapy subscale regarding average scores and on the individual level of the seven items.

Stigma

Because all four items on the stigma subscales were phrased with reversed items, lower rates of approval indicate lower degrees of stigma. A total mean score of 2.45 (1.44SD) demonstrates moderate rates of self-stigma. However, the mean value does not reflect respondents' neutrality; instead, many participants either indicated self-stigma with 20.9% for "somewhat agree" and even 13.6% for "totally agree" or rejecting self-stigma with 40.7% stating "totally disagree" and 21.1% "somewhat disagree," whereas only 3.7% responded "undecided." Answer patterns across all four items and average scores for the stigma subscale are shown in **Table 5.**

DISCUSSION

To our knowledge, this is the first exploratory study that has been conducted in Jordan investigating both refugee and host community perceptions regarding patient satisfaction, bias, stigma, and the effects of psychotherapy. Main results showed i) a high level of satisfaction with the treatment, ii) a high level of acceptance toward the therapist, iii) an overall positive evaluation of the treatment process, and finally iv) a moderate level of self-stigmatization. Because knowledge and information are scarce regarding the attitudes and opinions of Arabs and refugees on the process of psychotherapy, this study offers the first insights from the perspective of beneficiaries who have had contact with mental health services in Jordan.

Understanding patient satisfaction and the effects of therapy are important indicators for health care quality (28). Perspectives of patients are being considered at an increasing rate in the development and improvement of mental health care services and treatment interventions (29). In the current study, scores for patient satisfaction and effects of therapy seem to be quite high, and the overall consultation and its benefits were rated mostly as "very good." Our study participants reported feeling heard, understood, empathized with, and were able to take control over their issues. They also mentioned feeling relieved after sessions, understood their problems better, had hope and coped better. There are several possible explanations for the high scores concerning the patients' satisfaction and effects of therapy. One reason could be that our study participants seemed to have experienced a short waiting period of 1 to 7 days. Short waiting periods have been shown in multiple trials to improve a persons' therapy experience (29, 30).

As previously mentioned, there was a high level of overall satisfaction reported in our study. Furthermore, the majority of the participants in the current sample (61%) ranged between 18 and 39 years. An interesting study reported the highest level of satisfaction to be observed in the age group of 18 to 34 (24), whereas another study mentioned that older patients tend to rate higher on satisfaction scores (31). Therefore, it

seems that available research on the relationship between age and reported level of satisfaction with treatment in this cultural group is scarce and contradictory. Furthermore, in another study, Ghuloum, Bener, and Burgut (28) also found that, compared to Arab expatriates, Spanish patients' ratings of patient satisfaction with mental health care services were significantly lower than those in the Arab group. This gives light to the need for further studies with larger sample sizes and more rigorous research methodology to explore these discrepancies in the literature. High levels of satisfaction may also be a result of the characteristics of our participants of whom the majority are refugees who are in need of humanitarian aid assistance (32), unlike most cohorts in other studies with higher socioeconomic status and better mental health care. Although refugee populations are at great risk for developing psychopathology (33–35), there were no significant differences observed between host and refugee community members in our study. Perhaps the need for psychological support coupled with short waiting periods and a good therapeutic alliance may have had a positive impact on patient satisfaction and effects of therapy ratings. It would be of major interest in future research to see this hypothesis being investigated in more detail.

In 1975, Luborsky, Singer, and Luborsky investigated the hypothesis that regardless of the type and method of psychotherapy, across different treatments, only small differences in effect sizes were observed when comparing active treatments (36). Since then, several meta-analyses have confirmed the existence of this phenomenon, also known as the "Dodo Bird's Verdict" (36–39). In a nutshell, it seems that certain "active ingredients" exist, which are shared among all psychotherapeutic models (e.g., feeling heard, being understood, validated, and accepted) and influence patient satisfaction in therapy (31–40).

Overall, there were no major biases toward psychotherapists observed in our study. In general, participants seemed to have no reservations regarding their therapists' religious orientation, country of origin, and ethnic background. Only two biases appeared worthy of further investigation, one being gender related and the other concerning a difference in opinion about their national politics. Some research in this field hypothesizes that, within the Arab culture, there is a clear preference to and acceptability of females as therapists (24, 41). At this point, it is important to take into consideration our unique sample size, of which the majority are women. Regarding gender preferences in clinicians, women may feel more comfortable with a female therapist or medical doctor, so that they can address gender-related issues more openly and with greater ease (41). Furthermore, in the Arab world, studies have reported that, as a part of cultural norms, women are often assigned a caretaker role that is expected to nurture and care for others (41, 42). Therefore, it is not surprising that, in our research, both male and female participants seemed to find it more acceptable for a woman to be a therapist.

Regarding the bias of differences in political opinion between therapist and client, it seems like a general pattern emerged, ranging between undecided and disapproval. The ambivalence in their response may be because participants are mostly individuals who are fleeing from war and others from the host community who are impoverished (8, 9). Ongoing conflicts in the Middle East have led many of these individuals to seek psychiatric treatment. Nonetheless, these results should be interpreted cautiously.

Across the literature, various social barriers have been identified in the access and delivery of mental health services (5, 10, 17, 18). This may explain why there is more variability in patient responses concerning stigma. Several factors have been pointed out by researchers for increasing public stigma and bias toward mental health services (4). Some of these include gender and socioeconomic status (12). Further studies have also identified that being an immigrant and coming from a certain cultural group also increase public stigma (20). Other studies found Muslim women to be twice as likely compared to males to show positive attitudes toward help-seeking behaviors and thus be more open to seeking treatment (42). With regard to the specific items in our questionnaires, participants showed some ambivalence when asked whether others would lose respect for them if they knew about their psychological problems: 64% of the sample disagreed to this statement, whereas 31% agreed, and only a small number remained undecided. The items concerning fear of judgment and feeling ashamed were also ambivalently rated. Stigma has been known to be relatively high in the Arab world. In contrast, our exploratory study shows a different perspective. Although there is a scarcity in the availability of mental health care services, the need is being addressed, and public efforts for psychological awareness have also increased in recent years (1–3, 5). This could explain a decrease in the currently recognized pattern within Arab cultures and refugee groups.

Finally, regarding the item on family planning, there seemed to be a clear split in the responses toward this item. Although almost half of the cohort (47.5%) disagreed to the possible disadvantages concerning family planning and family life because of psychological problems, the other half (51.5%) agreed to it posing as a barrier. Family reputation is an integral feature for choosing a marriage partner within the Arab culture (41). Among some participants, seeking help may still be viewed as shameful and could "tarnish the family's reputation" (41, 42).

This exploratory study gives a detailed insight into the perception of psychotherapeutic services in a large cohort of host and refugee beneficiaries in Jordan. Although samples were collected from a diverse number of hospitals and organizations, a potential selection bias in this convenience sample may have occurred during recruitment because more compliant and more open respondents may have agreed to take part in the study. This may also have affected general positive responses throughout the questionnaire and overall positive ratings. This sample was not randomized; however, the study design attempted to create a balance between host and refugee community. Furthermore, several methodological limitations were also present in this research project, namely, that no data were available on psychiatric diagnosis, current psychopathology, or total length of treatment. It would also be ideal if future research could focus more on collecting data from qualitative interviews. This approach would allow for rich and in-depth further investigations that were not within the scope of this study.

In conclusion, although the preliminary results should be interpreted with caution, the present study provides evidence toward a positive attitude toward psychotherapists

and psychotherapeutic treatment in both the refugee and host communities in Jordan. These findings validate the argument that, in an environment where psychiatric disorders are usually stigmatized, contact to mental health services not only improves individual well-being but also positively alters attitude, at least in those receiving professional support. This knowledge may not only be useful in the case of Jordan but also be applied in other Arab countries with comparable mental health care structures. Further studies should be conducted with a more rigorous population selection, sample size, intervention description, and possibly a mixed-methods approach.

DATA AVAILABILITY

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The study was carried out in accordance with the recommendations of the Ministry of Health of the Hashemite Kingdom of Jordan with written informed consent from all subjects. All subjects gave written informed consent in accordance with the Declaration of Helsinki. The protocol was approved by the Ministry of Health in the Hashemite Kingdom of Jordan. The original ethics approval is available and can be submitted upon request.

AUTHOR CONTRIBUTIONS

CK contributed to the interpretation of data, writing (sections: Introduction and Discussion), and revision. KB contributed to the writing and data analysis (sections: Methods and Results). EH contributed to the conceptualization of study design, revision, and supervision. SS contributed to the data collection and conceptualization of study design and logistics. JS contributed to the data collection and conceptualization of study design. MB contributed to the conceptualization of idea, study design, revision, and supervision. All authors read and approved the final manuscript.

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Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

• 7.2 PUBLICATION TWO •

Böge K, Hahn E, Strasser J, Schweininger S, Bajbouj M. & **Karnouk C.** (2021) Psychotherapy in the Kurdistan region of Iraq (KRI): Preferences and expectations of the Kurdish host community, internally displaced- and Syrian refugee community. *International Journal of Social Psychiatry, 14*:20764021995219. doi: 10.1177/0020764021995219. PMID: 33583235.

Journal Data Filtered By: **Selected JCR Year: 2018** Selected Editions: SCIE,SSCI Selected Categories: **"PSYCHIATRY"** Selected Category Scheme: WoS

Gesamtanzahl: 214 Journale

Rank	Full Journal Title	Total Cites	Journal Impact Factor	Eigenfactor Score
1	World Psychiatry	5,426	34.024	0.014100
2	Lancet Psychiatry	4,887	18.329	0.022100
3	JAMA Psychiatry	10,894	15.916	0.055560
4	PSYCHOTHERAPY AND PSYCHOSOMATICS	3,892	13.744	0.005800
5	AMERICAN JOURNAL OF PSYCHIATRY	43,025	13.655	0.036370
6	MOLECULAR PSYCHIATRY	20,353	11.973	0.049290
7	BIOLOGICAL PSYCHIATRY	43,122	11.501	0.053320
8	JOURNAL OF NEUROLOGY NEUROSURGERY AND PSYCHIATRY	29,660	8.272	0.030730
9	SCHIZOPHRENIA BULLETIN	17,794	7.289	0.025590
10	BRITISH JOURNAL OF PSYCHIATRY	25,101	7.233	0.022570
11	NEUROPSYCHOPHARMACOLOGY	25,672	7.160	0.039090
12	ADDICTION	19,945	6.851	0.032100
13	Epidemiology and Psychiatric Sciences	1,217	6.402	0.003830
14	JOURNAL OF THE AMERICAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY	19,942	6.391	0.019370
15	BRAIN BEHAVIOR AND IMMUNITY	14,533	6.170	0.025700
16	JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY	19,072	6.129	0.023100
17	PSYCHOLOGICAL MEDICINE	25,176	5.641	0.038080
18	JOURNAL OF ABNORMAL PSYCHOLOGY	15,807	5.519	0.014930
19	Translational Psychiatry	7,313	5.182	0.024860
20	AUSTRALIAN AND NEW ZEALAND JOURNAL OF PSYCHIATRY	7,078	5.000	0.008330
21	BIPOLAR DISORDERS	5,143	4.936	0.006760
22	DEPRESSION AND ANXIETY	8,537	4.935	0.014490
23	JOURNAL OF PSYCHIATRY & NEUROSCIENCE	3,293	4.899	0.004540
24	Journal of Behavioral Addictions	1,642	4.873	0.004340

25	ACTA PSYCHIATRICA SCANDINAVICA	13,340	4.694	0.010630
26	SCHIZOPHRENIA RESEARCH	22,220	4.569	0.029410
27	CURRENT OPINION IN PSYCHIATRY	4,030	4.483	0.006280
28	EUROPEAN NEUROPSYCHOPHARMACOLOGY	7,488	4.468	0.015500
29	PROGRESS IN NEURO-PSYCHOPHARMACOLOGY & BIOLOGICAL PSYCHIATRY	10,674	4.315	0.012400
30	JOURNAL OF PSYCHOPHARMACOLOGY	6,460	4.221	0.010120
31	INTERNATIONAL JOURNAL OF NEUROPSYCHOPHARMACOLOGY	6,551	4.207	0.012320
32	CNS DRUGS	4,602	4.192	0.007190
33	JOURNAL OF AFFECTIVE DISORDERS	30,314	4.084	0.052950
34	CANADIAN JOURNAL OF PSYCHIATRY-REVUE CANADIENNE DE PSYCHIATRIE	5,658	4.080	0.006390
35	WORLD JOURNAL OF BIOLOGICAL PSYCHIATRY	2,429	4.040	0.004200
36	JOURNAL OF CLINICAL PSYCHIATRY	19,074	4.023	0.019900
37	PSYCHONEUROENDOCRINOLOGY	16,809	4.013	0.028150
38	EUROPEAN PSYCHIATRY	5,610	3.941	0.008420
39	CNS SPECTRUMS	2,368	3.940	0.003340
40	PSYCHOSOMATIC MEDICINE	12,747	3.937	0.009630
41	JOURNAL OF PSYCHIATRIC RESEARCH	15,180	3.917	0.020850
42	Current Psychiatry Reports	4,050	3.816	0.009260
43	EUROPEAN CHILD & ADOLESCENT PSYCHIATRY	5,186	3.740	0.009270
44	Journal of Attention Disorders	3,436	3.656	0.006340
45	International Journal of Bipolar Disorders	399	3.550	0.001490
46	INTERNATIONAL JOURNAL OF EATING DISORDERS	8,728	3.523	0.008910
47	PSYCHIATRY AND CLINICAL NEUROSCIENCES	3,720	3.489	0.004230
48	AMERICAN JOURNAL OF GERIATRIC PSYCHIATRY	6,965	3.488	0.010970
49	JOURNAL OF ANXIETY DISORDERS	6,639	3.472	0.009030
50	DRUG AND ALCOHOL DEPENDENCE	18,798	3.466	0.039250
51	PSYCHOPHARMACOLOGY	23,565	3.424	0.022260
52	Early Intervention in Psychiatry	1,630	3.323	0.003310
53	BEHAVIOR THERAPY	5,427	3.243	0.006220
54	GENERAL HOSPITAL PSYCHIATRY	5,224	3.220	0.007360
55	EUROPEAN ARCHIVES OF PSYCHIATRY AND CLINICAL NEUROSCIENCE	4,096	3.192	0.004590

56	Behavioral Sleep Medicine	1,285	3.171	0.002350
57	Frontiers in Psychiatry	4,605	3.161	0.013910
58	SOCIAL PSYCHIATRY AND PSYCHIATRIC EPIDEMIOLOGY	8,313	3.152	0.013620
59	INTERNATIONAL JOURNAL OF GERIATRIC PSYCHIATRY	9,327	3.141	0.010130
60	Body Image	3,304	3.124	0.004870
61	AMERICAN JOURNAL OF MEDICAL GENETICS PART B-NEUROPSYCHIATRIC GENETICS	4,087	3.123	0.006280
62	JOURNAL OF THE INTERNATIONAL NEUROPSYCHOLOGICAL SOCIETY	6,773	3.098	0.007380
63	SUICIDE AND LIFE-THREATENING BEHAVIOR	4,200	3.032	0.005100
67	European Journal of Psychotraumatology	1,546	3.020	0.005010
68	Mindfulness	2,629	3.000	0.005710
69	Therapeutic Advances in Psychopharmacology	563	3.000	0.001590
70	INTERNATIONAL REVIEW OF PSYCHIATRY	2,741	2.991	0.004390
71	JOURNAL OF CLINICAL PSYCHOPHARMACOLOGY	5,135	2.977	0.005030
72	AGING & MENTAL HEALTH	5,420	2.956	0.008280
73	Revista de Psiquiatria y Salud Mental	397	2.927	0.000660
74	JOURNAL OF GERIATRIC PSYCHIATRY AND NEUROLOGY	1,632	2.747	0.001840
75	PHARMACOPSYCHIATRY	1,833	2.738	0.001370
76	Eating and Weight Disorders-Studies on Anorexia Bulimia and Obesity	1,421	2.730	0.002110
77	JOURNAL OF PSYCHOSOMATIC RESEARCH	13,139	2.722	0.011420
78	BMC Psychiatry	10,121	2.666	0.023790
79	COMPREHENSIVE PSYCHIATRY	6,629	2.586	0.010050
80	Psychological Trauma-Theory Research Practice and Policy	1,859	2.529	0.005430
81	HARVARD REVIEW OF PSYCHIATRY	1,803	2.507	0.002890
82	HARVARD REVIEW OF PSYCHIATRY	1,803	2.507	0.002890
83	REVISTA BRASILEIRA DE PSIQUIATRIA	2,044	2.440	0.002740
84	International Journal of Mental Health Nursing	1,957	2.433	0.002020
85	EPILEPSY & BEHAVIOR	10,335	2.378	0.017530
86	Archives of Womens Mental Health	2,875	2.348	0.004990
87	BEHAVIORAL MEDICINE	905	2.344	0.001410
88	Journal of Psychosomatic Obstetrics & Gynecology	1,372	2.327	0.001160

89	ARCHIVES OF SUICIDE RESEARCH	1,454	2.316	0.002160
90	PSYCHIATRIC CLINICS OF NORTH AMERICA	2,739	2.281	0.002390
91	JOURNAL OF ECT	1,635	2.280	0.001950
92	INTERNATIONAL JOURNAL OF METHODS IN PSYCHIATRIC RESEARCH	2,933	2.276	0.002750
93	PSYCHIATRIC REHABILITATION JOURNAL	1,865	2.270	0.002980
94	HUMAN PSYCHOPHARMACOLOGY-CLINICAL AND EXPERIMENTAL	2,149	2.265	0.002320
95	DEMENTIA AND GERIATRIC COGNITIVE DISORDERS	4,583	2.260	0.003830
96	PSYCHIATRIC SERVICES	10,947	2.253	0.015610
97	PSYCHOLOGY AND PSYCHOTHERAPY-THEORY RESEARCH AND PRACTICE	1,095	2.244	0.001420
98	Neuropsychiatric Disease and Treatment	5,337	2.228	0.012260
99	Crisis-The Journal of Crisis Intervention and Suicide Prevention	1,656	2.221	0.002320
100	PSYCHIATRY RESEARCH	20,633	2.208	0.031200
101	JOURNAL OF BEHAVIOR THERAPY AND EXPERIMENTAL PSYCHIATRY	3,722	2.189	0.005270
102	Eating Behaviors	3,000	2.178	0.005400
103	JOURNAL OF CHILD AND ADOLESCENT PSYCHOPHARMACOLOGY	2,719	2.160	0.004100
104	Annals of General Psychiatry	903	2.158	0.001490
105	CHILD PSYCHIATRY & HUMAN DEVELOPMENT	2,279	2.071	0.004120
106	NORDIC JOURNAL OF PSYCHIATRY	2,077	2.061	0.002710
107	Journal of Psychiatric and Mental Health Nursing	2,644	2.009	0.002470
108	ANXIETY STRESS AND COPING	1,890	1.981	0.002210
109	ACTA NEUROPSYCHIATRICA	863	1.978	0.001510
110	JOURNAL OF NEUROPSYCHIATRY AND CLINICAL NEUROSCIENCES	3,615	1.971	0.002540
111	EUROPEAN ADDICTION RESEARCH	1,146	1.957	0.002110
112	Asian Journal of Psychiatry	1,483	1.932	0.0
113	EXPERIMENTAL AND CLINICAL PSYCHOPHARMACOLOGY	2,548	1.922	0.003270
114	Journal of Trauma & Dissociation	910	1.901	0.001290
115	JOURNAL OF THE AMERICAN ACADEMY OF PSYCHIATRY AND THE LAW	1,206	1.885	0.001290
116	ACADEMIC PSYCHIATRY	1,425	1.880	0.002330
117	STRESS AND HEALTH	1,691	1.875	0.002790

118	PSYCHIATRY-INTERPERSONAL AND BIOLOGICAL PROCESSES	2,190	1.873	0.001570
119	JOURNAL OF NERVOUS AND MENTAL DISEASE	8,182	1.859	0.007030
120	CLINICAL EEG AND NEUROSCIENCE	1,018	1.822	0.001510
121	INTERNATIONAL JOURNAL OF PSYCHIATRY IN CLINICAL PRACTICE	816	1.821	0.001430
122	PSYCHOPATHOLOGY	1,790	1.816	0.001850
123	PSYCHIATRISCHE PRAXIS	807	1.813	0.000750
124	JOURNAL OF TRAUMATIC STRESS	7,592	1.804	0.007460
125	Research in Autism Spectrum Disorders	3,161	1.799	0.005960
126	Mental Health and Physical Activity	540	1.797	0.001020
127	Personality and Mental Health	435	1.732	0.000960
128	NEUROPSYCHOBIOLOGY	2,645	1.675	0.001820
129	CHILD AND ADOLESCENT PSYCHIATRIC CLINICS OF NORTH AMERICA	1,648	1.642	0.002370
130	Child and Adolescent Psychiatry and Mental Health	1,112	1.642	0.002120
131	INTERNATIONAL CLINICAL PSYCHOPHARMACOLOGY	2,045	1.638	0.001830
132	Clinical Gerontologist	830	1.586	0.000790
133	Transcultural Psychiatry	1,317	1.558	0.001950
134	Journal of Child and Family Studies	4,546	1.556	0.009680
135	Cognitive Neuropsychiatry	892	1.542	0.001390
136	PSYCHOSOMATICS	3,673	1.541	0.003300
137	Psychogeriatrics	643	1.518	0.001420
138	ACTAS ESPANOLAS DE PSIQUIATRIA	592	1.479	0.000520
139	COMMUNITY MENTAL HEALTH JOURNAL	2,714	1.460	0.003950
140	CULTURE MEDICINE AND PSYCHIATRY	1,085	1.456	0.001100
141	Child and Adolescent Mental Health	874	1.439	0.001220
142	International Journal of Mental Health and Addiction	1,418	1.420	0.001910
143	Journal of Obsessive-Compulsive and Related Disorders	695	1.391	0.001830
144	SUBSTANCE USE & MISUSE	3,872	1.383	0.006230
145	INTERNATIONAL JOURNAL OF SOCIAL PSYCHIATRY	2,067	1.370	0.002980

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Psychotherapy in the Kurdistan region of Iraq (KRI): Preferences and expectations of the Kurdish host community, internally displaced- and Syrian refugee community

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Abstract

Background and Aim: The Kurdish Region of Iraq (KRI) is home to Kurds, internally displaced persons, and Syrian refugees. In the last decades, its inhabitants have witnessed a great deal of political instability, which has led to increased rates of psychological distress. Mental illness contrasts with limited access to and availability of mental health services – and so the treatment gap remains high. This study aims to investigate the perspectives, perceptions, and expectations of Syrian refugees, internally displaced persons and KRI host community members concerning mental health care in the governorate of Duhok. Attitudes and perspectives regarding psychotherapy, such as satisfaction with services, effects of therapy, bias toward therapy, and stigma, are explored.

Methods: One hundred one participants were recruited from hospitals, clinical settings, and institutions from the governorate of Duhok in the KRI. Participants received the Patient Satisfaction Questionnaire (PSQ) and were asked to evaluate services through four subscales: patient satisfaction, effects of therapy, bias toward therapy, and stigma.

Results: Results revealed overall high satisfaction with services and effects of therapy. In contrast, both bias and stigma subscales were rated more ambivalently.

Conclusion: Patient satisfaction is key for assessing health care quality, understanding attitudes toward therapy, and help-seeking behavior. Results offer insight for stakeholders in the psychosocial field allowing for a better understanding and improvement of availability and access to quality-driven mental health care services

Keywords

Mental health, psychotherapy, Kurdistan, Iraq, Arab, refugees, asylum seekers, stigma, bias, satisfaction

Introduction

In recent years, rising numbers have revealed that there are more displaced persons as a result of events following the Arab Spring than those reported after the second World War (Cetorelli et al., 2017; Ibrahim & Hassan, 2017; Okasha et al., 2012). Ongoing conflicts and political unrest in the region have forced millions to seek refuge in neighboring countries (Lebanon, Turkey, Jordan, Iraq, and the semi-autonomous Kurdish region of Iraq) (Ibrahim & Hassan, 2017), and afar. Together, both host and refugee communities must bear the high cost of war – material and non-material (Cetorelli et al., 2017). According to Fasfous et al. (2013), as a result of ongoing conflict, most individuals in Middle Eastern conflict zones have been exposed to at least one traumatic experience in their lifetime. These events have led to a widely documented increase in rates of psychological distress and trauma (Ibrahim & Hassan, 2017) – all of which are well known risk factors for the development of mental illness (Kurdistan Regional Statistics Office [KRSO], International Organization for Migration [IOM] & the United Nations Population Fund [UNPF], 2018). Although host governments are working closely with local and international organizations to adequately meet the physical and mental health needs of these communities, the treatment gap remains high and sustainable solutions are scarce (Bolton, 2013; Cetorelli et al., 2017).

Iraq is a predominantly Muslim Arab country with over 30 million inhabitants, who have witnessed a considerable amount of war, sectarian violence, and political turmoil in the last decades (Sadik et al., 2010). Its unique geographical

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location, diverse population, and profound contemporary history (2003 Iraq War up to now) lays ground for its complex ongoing political struggles (Sadik et al., 2010). Within Iraq, the Kurdistan Region of Iraq (KRI) has a population size of about five million inhabitants, spread across three main governorates: Sulaymaniyah, Erbil, and Duhok (KRSO, IOM & UNFPA, 2018). According to an official census by the United Nations High Commissioner of Refugees (UNHCR and REACH Initiative, 2015), about 226,934 Syrian refugees had fled to KRI, mostly spread across nine camps in the region (KRSO, IOM & UNFPA, 2018). Among those seeking refuge are also minority groups, such as the Yazidis, who have suffered a great deal of persecution and marginalization from previous regimes and now religious extremists (Cetorelli et al., 2017). According to a study by Ibrahim and Hassan (2017), most refugees in the KRI region reported to have fled for two reasons: (1) a general feeling of safety and stability within the region and (2) a familiar language, nationality, as well as transferable professional skills to the host community (Ibrahim & Hassan, 2017; Salman, 2012).

Historically, wars and conflict-settings have been found to contribute negatively to both mental and physical well-being (Ibrahim & Hassan, 2017). In 2014, an analysis which reviewed nine studies in the Arab region showed a significant effect of war trauma on overall psychological health (Al-ghzawi et al., 2014), with the highest incidence of distress reported by internally displaced people (IDP), who are temporarily located in camps in the KRI region (Cetorelli et al., 2017). Although there are no recent official statistics on the exact prevalence rates of mental illness in the KRI, according to Bolton (2013), the Iraq Mental Health Survey of 2007 revealed an 'increasing lifetime prevalence of most disorders across generations'. So far, the most pronounced disorders in both host and refugee communities, have been PTSD and depression among other disorders (Bolton, 2013; Ibrahim & Hassan, 2017; Naja et al., 2016). Furthermore, mental health treatment in Iraq is scarce, centralized, urbanized and relatively recent, with its first initiatives starting in the late 1970s (Al-Salihy & Rahim, 2013). While some sources report one psychiatrist per 300,000 inhabitants before the year of 2003 (Sadik et al., 2010), others estimate that there are fewer than 1,000 psychiatrists in all of Iraq – most of whom are located in hospital settings, do not offer therapy due to time constraints and rely heavily on prescribing medication (Bolton, 2013).

Although there is currently a rapid transformation in the health system and efforts from international key players and local counterparts alike to offer better psychiatric care, several challenges are still present (Aziz et al., 2014), such as limited training, mental health education, and the absence of formal and official evaluations of the existing psychiatric services in the KRI (Al-Salihy & Rahim, 2013). Additionally, the mental health system in the KRI is heavily dominated by bureaucratic and hierarchical systems (Al-Salihy & Rahim, 2013), making it harder to allocate services where they are actually needed. In a study by Aziz et al. (2014), it was found that Syrian refugees living in the KRI generally had scored high on social relationships, indicating a good level of social support, but had lower scores on domains related to physical and mental health. The paper further urges future research and mental health initiatives to prioritize physical and psychological health for the improved well-being of refugees in the KRI region. Without the support of evidence that can bring light to the current state of affairs regarding the diverse psychological needs of both the host and refugee communities within the KRI, the accurate allocation of funds and resources in the right places will not be possible.

Even though Iraq does not have an official mental health policy, over the years, some ministries, including those of KRI, have acknowledged the treatment gap and are working toward finding solutions (Bolton, 2013). Not only are services scarce and inaccessible, local governments and organizations are also facing cultural and social challenges related to negative attitudes and biases toward mental illness and help-seeking behaviors in the KRI region (Bolton, 2013). Stigma has been known to be one of the leading barriers to seeking treatment in the Arab world (Okasha et al., 2012; Sadik et al., 2010; Westbrook et al., 1993). According to a needs assessment by John Hopkin's School of Public Health, mental health-related stigma in Iraq is higher than in other parts of the world (Bolton, 2013) and Iraqis are often reluctant to seek treatment due to a fear of familial and social marginalization. According to Sadik et al. (2010), in a population-based survey, covering five Baghdadi districts, about attitudes toward mental illness, most respondents saw mental illness as a weakness, were ashamed of it and gave mixed opinions concerning the relationship between psychological distress, work, and marriage. Similarly, another study investigating host and refugee-community members' perspectives on psychotherapy showed overall high rates of satisfaction with provided services, but an ambivalence regards stigma and bias toward therapy (Karnouk et al., 2019). Despite these challenges and barriers, the growing body of research seems to be having an impact on governmental policies, community-based initiatives and increasing access to mental health services (Cetorelli et al., 2017). Not only are investigations of existing-services necessary, but also a key predictor in offering more suitable, effective and culturally-sensitive treatment options.

Within this context, this study contributes to a dearth of available literature and offers a unique glimpse into the perspectives, perceptions, and expectations of Syrian refugees, internally displaced persons (IDPs) and KRI host community members concerning mental health care in the governorate of Duhok. Other public experiences regarding psychotherapy, such as satisfaction with services, effects of therapy, bias toward therapy and stigma, will also be explored.

Methods

Participants

A sample of 101 patients was recruited between October and December 2017 in the Kurdish Region of Iraq (KRI). All participants in the current study received psychotherapy- or counseling sessions at various organizations specialized in offering mental health services. Structured interviews assessing sociodemographic information and a self-report measure (PSQ) were administered by local- as well as international interviewers in Arabic, Sorani or Kurmanji; depending on the location of the beneficiaries and their background. The interviews were conducted by psychologists or psychiatrists and were not linked to the service provision. In cases of illiteracy, the interviewers noted the responses for participants and provided clarification on the items when necessary. All interviewers received a thorough and in-depth structured training of 2 days in the form of a workshop in order to guarantee consistency in the interview process.

Inclusion criteria were defined as (a) age between 18 and 75 years; (b) belonging either to the Kurdish host-, internally displaced-, or Syrian refugee community; (c) obtained counseling- or psychotherapy sessions within the last 6 months, (d) attended $>$ 4 sessions prior assessment, (e) receiving pharmacological treatment was permitted.

Procedure

The recruitment of a representative sample was not feasible since younger and female individuals were mostly seeking treatment by our local partners and interested in participation. Therefore, the study design aimed to balance the three patient groups according to their socio-demographic variables, including gender and background (host-, the Syrian refugee community and internally displaced people [IDP]).

In the KRI cooperating local and international organizations recruited suitable candidates by asking for their willingness to participate in the study. Potential participants who met the inclusion criteria received a study information sheet, were encouraged to ask any questions that remained unclear and upon agreement signed an informed consent. The sample was recruited from the following organizations: Azadi Teaching Hospital, Child and Adolescent Mental Health Center Duhok, Emma Organization, Erbil Psychiatric Hospital, International Medical Corps, International Organization for Migration, Jiyan Foundation for Human Rights, Koya University, Mercy Corps, SEED Foundation, Survivor Center Duhok, Terre des Hommes Italy, Wchan, and World Vision International in the Kurdish region of Iraq.

Matching gender between interviewers and participants could not always be ensured in the study due to structural, logistic and personnel challenges. No financial compensation was offered to the participants besides travel costs. However, all participants received a telephone hotline number allowing for follow-up psychological support if needed. Subsequent to data assessment of the pencil-paper questionnaires, all data was translated by local translators into English. Finally, data were entered into a Statistical Package for Social Science (SPSS) spreadsheet and electronically saved. The ethical committees of Charité – Universitätsmedizin Berlin, Germany accepted the study design in accordance with the latest version of the Declaration of Helsinki.

Assessment

Culturally sensitive and adequate questionnaires assessing patient perceptions and preferences concerning psychotherapy- and counseling sessions remain scarce in the Arab world. To address this need, an instrument was designed in close collaboration with the NGO Misereor.

The Patient Satisfaction Questionnaire (PSQ) was specifically developed to evaluate patient needs and perceptions concerning relevant psychotherapeutic processes in the MENA region. The instrument has also been successfully used in similar regions, including the Kingdom of Jordan and showed its clinical utility by our research group (see Karnouk et al., 2019). The items are partially based on the well-known PSQ measure by Ware et al. (1983), however, some items were adapted by Miseror and our research team, in order to ensure applicability in the MENA region. These include perceived bias, effects of the therapy, stigma, and patients' satisfaction, containing dimensions, such as beliefs, perceptions, and expectations. The PSQ is a self-report questionnaire originally developed in Arabic containing four subscales covering the main broad domains of mental health care provision. In total, the scale consists of 26 items. Furthermore, it is divided into four subscales with varying item distribution: patient satisfaction (9), bias (6), effects of therapy (7), and stigma (4). Responses for each of the subscales' items are scored on a 5-point Likert scale with diverse anchor points (details stated in Tables 2–5). For the current study, inconsistent to excellent consistency was found for the four subscales with Cronbach's alpha ranging from $\alpha_{Satisfaction} = .897$, $\alpha_{Bias} = .419$, $\alpha_{EffectsofTherapy} = .880$, $\alpha_{Stigma} = .705$ (Tavakol & Dennick, 2011).

Statistical analysis

Prior to the analysis, assumptions of normality (values of skewness and kurtosis), outliers and sphericity were assessed. In the first step, descriptive and inferential statistics for the Patient Satisfaction Questionnaire (PSQ) were calculated. Next, the central tendency of continuous measures was calculated and displayed by frequencies, percentages, means, standard deviations and range of variables. For all categorical variables and subscale items, percentages and

actual counts are presented to illustrate missing measures. To examine the possible difference between three patient groups (host-, the Syrian refugee community, and internally displaced people [IDP]), subsample analyses will be performed using non-parametric Kruskal–Wallis one-way analysis of variance tests. All collected data was collected and stored in a spreadsheet using the Statistical Package for the Social Science (SPSS) 25, MacOS-X. Statistical analyses will be set at an exploratory significance level of $p < .5$.

Results

A total of 104 participants were analyzed in the present study. 61.5% were female, while age ranged from 18 to 74, with a mean of 35.04 (SD = 11.64). The majority of participants were Kurdish (86.1%) and indicated Islam as their religion (69.3%). Nearly half of the total sample was from the host community (47.9%), while 22.3% were from Syria (Syrian refugee community), and 29.8% were from the internally displayed community (IDP). All assessed sociodemographic variables are shown in detail in Table 1. Moreover, all descriptive results of frequencies, percentages, means, standard deviations, and range of variables are shown in Tables 2 to 5. Each of the four subscales' mean and test results is depicted in Table 6. Non-parametric Kruskal–Wallis one-way of variance test were conducted demonstrating no significant difference between all four subscales across the three subsamples: $\chi^2_{Satisfaction}$ (2) = 0.126, $p = .939$; χ^2_{Bias} (2) = 1.478, $p = .478$; $\chi^2_{EffectsofTherapy}$ (2) = 4.663, $p = .097$; χ^2_{Stigma} (2) = .304, $p = .859$.

Table 1. Sociodemographic characteristics of the survey sample.

Sociodemographic data	*N* = 104
Gender (%, *n* = 97)	
Male	33.7
Female	61.5
Age in years (%, *n* = 100)	35.04 (11.64)*
18– 28	34.0
29– 39	34.0
40– 54	25.0
55– 74	7.0
Ethnicity (%)	
Arab	12.9
Kurdish	86.1
Turkmen	1.0
Religion (%)	
Muslim	69.3
Yazidi	30.7
Target group (%, *n* = 94)	
Host community	47.9
Syrian refugee community	22.3
IDP community	29.8
Waiting time (%, *n* = 100)	
Same day	69.0
1–7 days	22.0
1– 2 weeks	5.0
3– 4 weeks	1.0
More than 4 weeks	3.0

Note. Waiting time = waiting time between registration with the organization and first contact with a physician or psychologist, IDP = internally displaced people.
*Mean and standard deviation for age.

Patient satisfaction

In total, results indicate very high satisfaction rates on all eight items of the subscale with a mean of 4.47 (SD = 0.79). Sixty-two percent rated the interpersonal level of treatment with 'very good' and 27.9% with 'good'. Therewith, only 2.3 ranked treatment provision with 'poor' and 1% with 'very poor' – 6.7% stated 'fair'. All responses on the satisfaction subscale are displayed on an item and overall level with frequencies, means and standard deviations in Table 2.

Bias

Bias in the form of attitudes toward the treatment provider was rated on six items. Participants showed moderate levels of bias, with an average response of 2.45 (SD = 1.56). A majority of 58.9% showed reservations regarding gender, religious affiliations, ethnicity and country of origin with their therapist – 53% 'totally disagree' and 5.9% 'somewhat disagree'. Only 34% accepted possible differences with 9.4% 'somewhat agree' and 24.6% 'totally agree', respectively. A minority of 7.1% remained undecided.

Table 3 shows all descriptive statistics on an overall and item level for the bias subscale.

Effects of therapy

Overall, approval rates for the effects of therapy were very high, with 4.27 (SD = 0.79) on average. About 83.5% were endorsing the treatment effects, split to 52.5% responding with 'totally agree' and 31% with 'somewhat agree'. Less than 7% did not find the treatment effects favorable with 2.2% rating it as 'totally disagree', and 4.7% as 'somewhat disagree'. Roughly, 9.6% of all participants remained undecided. Responses for the subscale effects of therapy and its seven items are presented in Table 4.

Stigma

For the stigma subscale, all four items are phrased reversed; lower rates of approval display, therefore, lower levels of stigma. For the current sample, the mean score was at 2.37 (SD = 1.45), depicting moderate to low levels of stigma. While a majority of 47.0% rejected self-stigmatizing items

Table 2. Descriptive statistics of the Patient Satisfaction Questionnaire.

How was the doctor or nurse at. . .	Very poor (%)	Poor (%)	Fair (%)	Good (%)	Very good (%)	Mean (SD)
Making you feel at ease?	0	3.0	11.9	21.8	63.4	4.46 (0.82)
Letting you tell your story?	1.0	1.9	5.8	27.9	63.5	4.51 (0.78)
Really listening? ($n = 103$)	0	2.9	3.9	28.2	65.0	4.55 (0.71)
Being interested in you as a whole person? ($n = 103$)	0	2.9	4.9	35.0	57.3	4.47 (0.73)
Fully understanding your concerns? ($n = 103$)	0	1.9	4.9	26.2	67.0	4.58 (0.68)
Showing care and compassion?	1.9	3.8	7.7	21.2	65.4	4.44 (0.93)
Explaining things clearly? ($n = 103$)	1.0	1.9	4.9	35.0	57.3	4.46 (0.76)
Helping you to take control?	1.9	1.9	7.7	32.7	55.8	4.38 (0.86)
Overall rating of the consultation / treatment	2.9	1.0	8.7	24.0	63.5	4.44 (0.91)
Overall rating on the Patient Satisfaction Questionnaire	1.0	2.3	6.7	27.9	62.0	4.47 (0.79)

Note. The full sample consisted of $N = 104$ participants. Very poor = 1, Poor = 2, Fair = 3, Good = 4, Very good = 5.

Table 3. Descriptive statistics of the Bias Questionnaire.

It is acceptable if the therapist. . .	Totally disagree (%)	Somewhat disagree (%)	Undecided (%)	Somewhat agree (%)	Totally agree (%)	Mean (SD)
Is a man. ($n = 103$)	48.5	10.7	7.8	5.8	27.2	2.52 (1.73)
Is a woman. ($n = 101$)	74.3	4.0	5.0	7.9	8.9	1.73 (1.36)
Has a different opinion regarding national politics. ($n = 99$)	16.2	2.0	4.0	18.2	59.6	4.03 (1.48)
Is from another country. ($n = 101$)	63.4	3.0	10.9	10.9	11.9	2.05 (1.51)
Belongs to a different ethnic group. ($n = 100$)	50.0	10.0	11.0	7.0	22.0	2.41 (1.65)
Belongs to a different religious group. ($n = 102$)	64.7	5.9	3.9	6.9	18.6	2.09 (1.63)
Overall rating on the Bias Questionnaire	53.0	5.9	7.1	9.4	24.6	2.46 (1.56)

Note. The full sample consisted of $N = 104$ participants. Totally disagree = 1, Somewhat disagree = 2, Neither agree nor disagree = 3, Somewhat agree = 4, Totally agree = 5.

Table 4. Descriptive statistics of the Effects of the Therapy Questionnaire.

	Totally disagree (%)	Somewhat disagree (%)	Undecided (%)	Somewhat agree (%)	Totally agree (%)	Mean (SD)
I mostly feel relieved after the therapy sessions.	1.9	4.8	8.7	23.1	61.5	4.38 (0.97)
The therapy helped me to handle my problems and my distress. ($n = 103$)	1.9	4.9	7.8	35.9	49.5	4.26 (0.94)
Now I can understand much better, where my problems came from. ($n = 101$)	4.0	5.9	8.9	22.8	58.4	4.26 (1.10)
With therapy it is easier for me to face the difficulties in my life. ($n = 103$)	1.9	3.9	11.7	34.0	48.5	4.23 (0.94)
Therapy gave me new hope and new perspectives for my life. ($n = 103$)	1.0	5.8	10.7	29.1	53.4	4.28 (0.64)
I now get along better with the people in my immediate environment. ($n = 102$)	2.0	3.9	6.9	38.2	49.0	4.28 (0.91)
Therapy helped me to find solutions for my problems.	2.9	3.8	12.5	33.7	47.1	4.18 (0.99)
Overall rating on the Effects of the Therapy Questionnaire	2.2	4.7	9.6	31.0	52.5	4.27 (0.93)

Note. The full sample consisted of $N = 104$ participants. Totally disagree = 1, Somewhat disagree = 2, Neither agree nor disagree = 3, Somewhat agree = 4, Totally agree = 5.

Table 5. Descriptive statistics of the Stigma Questionnaire.

	Totally disagree (%)	Somewhat disagree (%)	Undecided (%)	Somewhat agree (%)	Totally agree (%)	Mean (SD)
I think if others know about my psychological problems, they lose respect for me.	52.9	13.5	12.5	10.6	10.6	2.12 (1.43)
I am afraid of possible disadvantages in regard to my family planning and family life because of my psychological problems.	23.1	12.5	14.4	26.0	24.0	3.15 (1.51)
I am scared that people are thinking or talking about me in a negative way because I am in therapy for my psychological problems. ($n = 103$)	47.1	12.5	8.7	19.2	12.5	2.38 (1.53)
I feel ashamed that I have to go to a therapist for my problems. ($n = 103$)	65.0	10.7	5.8	11.7	6.8	1.84 (1.33)
Overall rating on the Stigma Questionnaire	47.0	12.3	10.4	16.9	13.5	2.37 (1.45)

Note. The full sample consisted of $N = 104$ participants. Totally disagree = 1, Somewhat disagree = 2, Neither agree nor disagree = 3, Somewhat agree = 4, Totally agree = 5.

Table 6. Descriptive statistics and analysis of subsample differences for all subscales (Kruskal–Wallis one-way analysis of variance test).

Outcome variable	Mean rank	*p*
Satisfaction subscale		
Host community ($n = 45$)	47.17	.939
Syrian refugee community ($n = 21$)	47.76	
IDP community ($n = 29$)	49.47	
Bias subscale		
Host community ($n = 45$)	50.21	.478
Syrian refugee community ($n = 21$)	41.64	
IDP community ($n = 29$)	49.17	
Effects of the therapy subscale		
Host community ($n = 45$)	52.21	.097
Syrian refugee community ($n = 21$)	51.62	
IDP community ($n = 29$)	38.84	
Stigma subscale		
Host community ($n = 45$)	46.57	.859
Syrian refugee community ($n = 21$)	50.50	
IDP community ($n = 29$)	48.41	

Note. IDP = internally displaced people.

('totally disagree'), answer patterns across all other anchors were distributed equally with 12.3% 'somewhat disagree', 10.4% 'undecided', and 16.9% 'somewhat agree' and 13.5% 'totally agree', respectively. Table 5 illustrates all descriptive statistics for the bias subscale with its four items.

Discussion

Result of the present study indicate higher rates of acceptance concerning psychological services among participants in the KRI region, contrasting with previous research revealing a reluctance to engage in psychiatric treatment from the side of both the patient and their families in Iraq, particularly for women (Bolton, 2013). The main study findings reveal high levels of satisfaction with psychological interventions, an overall positive evaluation of the effects of therapy, low to moderate levels of perceived public stigma and moderate levels of biases related to therapist characteristics. Several logistical and attitudinal factors may have contributed to these positive changes ranging from an increased need for services to growing public and organizational efforts leading to increased availability, access to and quality of mental health services.

Both subscales 'patient satisfaction' and 'effects of therapy' were rated positively. Participants reported being relatively satisfied with available services, particularly high scores were given in items such as, feeling heard, understood, with and grasping things more clearly. Moreover, participants also rated the effects of therapy as high, with the most pronounced items being: feeling relieved after sessions, having fresh perspectives and coping better in general. In a similar study in Jordan by Karnouk et al. (2019), respondents who were mostly women and had a similar age group, also rated levels of satisfaction with services as high. Nevertheless, it is worth mentioning that short waiting periods may also have an impact on higher positive ratings and satisfaction with services – a criterion commonly cited as a measure for good quality standards in mental health care settings (Hasler et al., 2004).

In contrast to high levels of satisfaction, stigma and biases were rated more ambivalently. Participant ratings for the stigma subscale ranged between low to moderate. Concerns related to how others would view the individuals if they sought treatment have long been a barrier to seeking psychological care (Pedersen & Paves, 2014). Other studies in the Arab region have reported similar or even higher results (Nasir & Al-Qutob, 2004; Okasha et al., 2012). Furthermore, the study reveals an apparent dissonance between, on the one hand, having an open and positive attitude toward therapy and on the other, having a negative

perceived public stigma related to it. There is a growing need to provide mental health services in the Middle East (Böge et al., 2020; Bolton, 2013). In recent years, efforts for increasing the availability of and access to mental health care services in the KRI region have increased. According to Henderson et al. (2013), increased use of services and treatment-seeking behaviors lead to lower rates of public stigma. As opposed to our study results, existing literature points toward stigma being relatively higher in Iraq when comparing to other places (Bolton, 2013). However, in a study by Petty et al. (2006), participants with changing attitudes evaluated matters more neutrally than their initial attitude. In this study, participants reported having no shameful feelings associated with therapy and did not worry that others would lose respect for them. However, one dominant consensus was with regard to fears related to family planning. The family unit is known to be a powerful pillar in Arab culture, especially for women, who make up most of our sample. In another study by Sadik et al. (2010), most participants saw mental illness as a 'weakness' and had concerns regarding the effect of their psychological distress on marriage prospects (Awad et al., 2013; Heath et al., 2016).

Furthermore, the 'bias' subscale was rated ambivalently with some contradictory items standing out, particularly with regards to specific characteristics related to the therapist, such as gender and political opinion (Karnouk et al., 2019). Whereas more than half of the sample did not find it acceptable if the therapist 'is a man', 74% did not find it acceptable for the therapist to be 'a woman' either. Given that most of the respondents in this study are females, these findings demonstrate an interesting contradiction. In the literature, gender biases have been reported to be particularly strong in predominantly Muslim countries, with previous research reporting clear preferences and openness to therapists who are women, particularly for female clients for reasons related to cultural norms and gender roles (Heath et al., 2016). Moreover, this paradox may also be a feature of attitude change and openness (Petty et al., 2006). Nonetheless, it is still unclear whether these results may be due to vague wording/phrasing in the questionnaire. It makes it therefore challenging to understand whether these attitudes stem from cultural norms and gender roles, or whether they truly reflect the respondents preferences in matching genders. For future use, it would be beneficial for this item to be reviewed and for the overall Patient Satisfaction Questionnaire to be refined and validated in order to improve its accuracy and usefulness in the region, where assessments are often scarce.

Furthermore, respondents mentioned having no biases with regards to a difference in national politics between therapist and client. However, the therapist being of the same nationality, ethnic and/or religious group was clearly preferred. Factors such as trust, perceived stigma and a fear of the therapist not connecting to the client's reality may be playing a role here, especially that our sample includes several minorities, such as Kurds and Yazidis. The sample characteristics are culturally diverse, capturing the real-life setting and demonstrating the 'ecological validity' of our study.

Several strengths and limitations were identified in this exploratory study. Although the sample was recruited through different hospitals and organizations within governate of Duhok, the sample was not randomized, and it is most likely that only participants who showed interest and a willingness to take part in the study were recruited. Therefore, it may be possible that because the this was a convenience sample, patients with lower satisfaction may not have taken part in the study, contributing to inflated levels of satisfaction with therapy and mostly positive reports with regards to its effects. Although the analysis revealed no subsample differences between the different community members, it would be interesting to conduct a replication or confirmatory study with larger sample size. Moreover, the KRI is a diverse region, with differences in socio-political structures, religious orientations, ethnicity and more. Due to a scarcity in time and availability of resources, the collections of valuable information and 'qualitative' experiences of respondents were not possible at this point. Furthermore, relevant information with regards to the length of overall treatment, type of therapy, and/or diagnoses would have been interesting to analyze. It would also be useful to build on these findings

In conclusion, the study provides evidence for the growing acceptance of mental health services and positive changes toward accessing and receiving psychotherapy in the KRI. Understanding patient satisfaction and the effects of therapy are essential indicators for improving access to and the quality of mental health services. These investigations allow for more practical plans and an accurate allocation of resources. In turn, positive experiences will cause a decrease in stigma and biases. While the treatment gap remains high in KRI, governmental- and other developmental efforts are collaboratively tackling mental health-related issues and aiming to improve mental health care services, therefore investigating client preferences and expectations and examining their quality can also improve existing infrastructures and create a system whereby both therapist and client can benefit from treatment conditions. Within that context, follow-up studies capturing the effects of these efforts on decreasing rates of psychological distress would be valuable sources of information that are useful for refugees, host community members, IDP's and service providers alike.

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• 7.3 PUBLICATION THREE •

Lindheimer N, **Karnouk C**, Hahn E, Churbaji D, Schilz L, Rayes D, Bajbouj M, Böge K. (2020) Exploring the Representation of Depressive Symptoms and the Influence of Stigma in Arabic-Speaking Refugee Outpatients. *Front Psychiatry,* 12;11:579057. doi: 10.3389/fpsyt.2020.579057. PMID: 33281643; PMCID: PMC7689084.

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1	World Psychiatry	5,426	34.024	0.014100
2	Lancet Psychiatry	4,887	18.329	0.022100
3	JAMA Psychiatry	10,894	15.916	0.055560
4	PSYCHOTHERAPY AND PSYCHOSOMATICS	3,892	13.744	0.005800
5	AMERICAN JOURNAL OF PSYCHIATRY	43,025	13.655	0.036370
6	MOLECULAR PSYCHIATRY	20,353	11.973	0.049290
7	BIOLOGICAL PSYCHIATRY	43,122	11.501	0.053320
8	JOURNAL OF NEUROLOGY NEUROSURGERY AND PSYCHIATRY	29,660	8.272	0.030730
9	SCHIZOPHRENIA BULLETIN	17,794	7.289	0.025590
10	BRITISH JOURNAL OF PSYCHIATRY	25,101	7.233	0.022570
11	NEUROPSYCHOPHARMACOLOGY	25,672	7.160	0.039090
12	ADDICTION	19,945	6.851	0.032100
13	Epidemiology and Psychiatric Sciences	1,217	6.402	0.003830
14	JOURNAL OF THE AMERICAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY	19,942	6.391	0.019370
15	BRAIN BEHAVIOR AND IMMUNITY	14,533	6.170	0.025700
16	JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY	19,072	6.129	0.023100
17	PSYCHOLOGICAL MEDICINE	25,176	5.641	0.038080
18	JOURNAL OF ABNORMAL PSYCHOLOGY	15,807	5.519	0.014930
19	Translational Psychiatry	7,313	5.182	0.024860
20	AUSTRALIAN AND NEW ZEALAND JOURNAL OF PSYCHIATRY	7,078	5.000	0.008330
21	BIPOLAR DISORDERS	5,143	4.936	0.006760
22	DEPRESSION AND ANXIETY	8,537	4.935	0.014490
23	JOURNAL OF PSYCHIATRY & NEUROSCIENCE	3,293	4.899	0.004540
24	Journal of Behavioral Addictions	1,642	4.873	0.004340
25	ACTA PSYCHIATRICA SCANDINAVICA	13,340	4.694	0.010630

26	SCHIZOPHRENIA RESEARCH	22,220	4.569	0.029410
27	CURRENT OPINION IN PSYCHIATRY	4,030	4.483	0.006280
28	EUROPEAN NEUROPSYCHOPHARMACOLOGY	7,488	4.468	0.015500
29	PROGRESS IN NEURO-PSYCHOPHARMACOLOGY & BIOLOGICAL PSYCHIATRY	10,674	4.315	0.012400
30	JOURNAL OF PSYCHOPHARMACOLOGY	6,460	4.221	0.010120
31	INTERNATIONAL JOURNAL OF NEUROPSYCHOPHARMACOLOGY	6,551	4.207	0.012320
32	CNS DRUGS	4,602	4.192	0.007190
33	JOURNAL OF AFFECTIVE DISORDERS	30,314	4.084	0.052950
34	CANADIAN JOURNAL OF PSYCHIATRY-REVUE CANADIENNE DE PSYCHIATRIE	5,658	4.080	0.006390
35	WORLD JOURNAL OF BIOLOGICAL PSYCHIATRY	2,429	4.040	0.004200
36	JOURNAL OF CLINICAL PSYCHIATRY	19,074	4.023	0.019900
37	PSYCHONEUROENDOCRINOLOGY	16,809	4.013	0.028150
38	EUROPEAN PSYCHIATRY	5,610	3.941	0.008420
39	CNS SPECTRUMS	2,368	3.940	0.003340
40	PSYCHOSOMATIC MEDICINE	12,747	3.937	0.009630
41	JOURNAL OF PSYCHIATRIC RESEARCH	15,180	3.917	0.020850
42	Current Psychiatry Reports	4,050	3.816	0.009260
43	EUROPEAN CHILD & ADOLESCENT PSYCHIATRY	5,186	3.740	0.009270
44	Journal of Attention Disorders	3,436	3.656	0.006340
45	International Journal of Bipolar Disorders	399	3.550	0.001490
46	INTERNATIONAL JOURNAL OF EATING DISORDERS	8,728	3.523	0.008910
47	PSYCHIATRY AND CLINICAL NEUROSCIENCES	3,720	3.489	0.004230
48	AMERICAN JOURNAL OF GERIATRIC PSYCHIATRY	6,965	3.488	0.010970
49	JOURNAL OF ANXIETY DISORDERS	6,639	3.472	0.009030
50	DRUG AND ALCOHOL DEPENDENCE	18,798	3.466	0.039250
51	PSYCHOPHARMACOLOGY	23,565	3.424	0.022260
52	Early Intervention in Psychiatry	1,630	3.323	0.003310
53	BEHAVIOR THERAPY	5,427	3.243	0.006220
54	GENERAL HOSPITAL PSYCHIATRY	5,224	3.220	0.007360
55	EUROPEAN ARCHIVES OF PSYCHIATRY AND CLINICAL NEUROSCIENCE	4,096	3.192	0.004590
56	Behavioral Sleep Medicine	1,285	3.171	0.002350
57	Frontiers in Psychiatry	4,605	3.161	0.013910

frontiers in Psychiatry

ORIGINAL RESEARCH
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Exploring the Representation of Depressive Symptoms and the Influence of Stigma in Arabic-Speaking Refugee Outpatients

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The number of distressed refugees from the Arab world is relatively high in Germany and other host countries worldwide. For this specific population, substantial challenges and barriers have already been identified that hamper access to Germany's health care system. This study aims to contribute to this line of research by exploring the representation of depressive symptoms, both somatic and psychological, in order to inform clinicians about the most prevalent symptoms reported by Arabic-speaking refugee outpatients. Furthermore, this paper investigates the longstanding claim that mental health stigma fosters the expression of bodily distress. For these purposes, a total of 100 Arabic-speaking refugee outpatients, mostly Syrians, were recruited in Berlin, Germany. Somatic and psychological symptoms were assessed with the Patient Health Questionnaire (PHQ) 15 and 9, while stigma was assessed with the Brief Version of the Internalized Stigma of Mental Illness Scale (ISMI-10). Study results show that both somatic and psychological symptom severity was moderate while sleeping problems and energy loss were the most reported symptoms across both scales. Stigma was low and showed no association with somatic complaints in a multiple regression analysis, but was associated with more psychological symptoms. A principal factor extraction on the PHQ-15 items revealed five independent, somatic symptom clusters that were interpreted considering the rich poetic resources of the Arabic language. In conclusion, both somatic and psychological symptoms were commonly reported by Arabic-speaking refugees with symptoms of depression. Whereas, stigma does not seem to influence the expression of somatic symptoms, the present results provide first empirical indications for the relationship of symptom expression with the use of explanatory models and conceptualizations of mental illness within the Arabic culture and language. Future research efforts should be dedicated to enhancing our understanding of mental health care needs in this population as well as to exploring other mediators that might help explain the varying degree of somatic symptoms in depression across cultures.

Keywords: refugee, Arabic, depression, somatic, stigma

INTRODUCTION

In recent years, the number of individuals who have been forcibly displaced as a consequence of persecution, conflict, and violence around the world has risen to nearly 70 million. This number accounts for the highest total ever recorded by the United Nations High Commissioner for Refugees (1). As a result, more than 1.6 million asylum requests have been registered by the German Federal Office for Migration and Refugees (BAMF) since 2015, making Germany one of the most important host countries for refugees in the world (2, 3). In 2018, most refugees arrived from Syria (27.1%), followed by Iraq (10.0%), Nigeria (6.4%), Iran (6.3%), Turkey (6.3%), and Afghanistan (6.3%) (3). According to a representative survey of over 2,000 refugees in Germany, the main causes of flight include violent conflicts, war, prosecution, and impressment (4). Since Arabic-speaking countries currently constitute the largest number of displaced people, Arabic is considered by far the most frequently spoken native language within the refugee population in Germany (4, 5).

Exposure to traumatic events before and during migration, coupled with stressful experiences in the host environment, have been found to cause increased rates of psychological distress among refugee populations (6–9). Nonetheless, reliable epidemiological studies investigating the prevalence and course of mental illness in Germany's refugee population remain scarce (6, 10). Available tentative data, from rather small refugee samples, indicate that prevalence rates for any psychiatric disorder range between 30.5 and 95% (11–15). A recent meta-analysis estimates that the prevalence for depression in non-help-seeking Arabic-speaking refugees in Germany is 38% (95%-CI: 27–50%) and 29% (95%-CI: 21–37%) for symptoms of a post-traumatic stress disorder (PTSD) (Hoell, under review).

In light of the high need for psychiatric and psychotherapeutic treatment in this population, it is striking that refugees rarely have access to adequate and effective treatment services (16). As a contributing factor, multiple barriers seem to exist that hamper access to the German health care system for refugees and asylum seekers (10, 17). These comprise of institutional and structural barriers, such as restrictions through the Asylum-Seeker's Benefits Act and the lack of multilingual clinicians, as well as individual barriers, including lack of knowledge and language skills, shame, social, and cultural barriers (10, 17, 18). Moreover, it might be necessary to investigate whether and how experiences of trauma, war, and forced migration, coupled with a shared cultural background, translate into specific symptom representations and dysfunctions that contribute to misdiagnosis and delays in efficient and effective treatment in this population (19, 20).

Research on cultural differences in psychopathology has long focused on somatization in non-Western cultures, which can be defined as a process by which psychological distress is expressed in somatic terms (21). However, this line of research has often been driven by Western, rather stereotypical perspectives on culture, coupled with a tendency to equate culture with an ethnocultural group or merely using country of origin as a proxy (21, 22). Thus, calls for research practices that take on a more nuanced view and thereby identify the influences of specific cultural contexts and processes on psychopathology have recently raised (21). Such more sophisticated approaches have contributed to a more profound understanding of somatic symptoms in depression in cross-cultural research: In general, somatic symptoms can be considered a universal phenomenon in depressed individuals across cultures (23). Moreover, an epidemiological study with Chinese individuals in Hong Kong has shown that somatic and depressive symptoms seem to be positively correlated, which contradicts the notion that somatic symptoms are merely an immature expression of emotional distress (24). Still, an abundance of literature has found differences in the phenomenology of somatic symptoms in depression across cultural groups (19). As one potential mediator, Ma-Kellams has identified differences in somatic awareness and interoceptive accuracy across cultures and was able to link these to variations in the expression of somatic symptoms in psychopathology (25). Similarly, Ryder and colleagues showed that the relationship between culture and the presence of somatic symptoms was mediated by a tendency toward eternally oriented thinking (26). In conclusion, Kirmayer and Ryder argue that differences in the bodily expression of distress across cultures may be linked to culturally mediated modes of symptom interpretation which may be the result of stigma and available sources of help (21).

The notion that stigma might foster somatic symptom expression has often been suggested in the literature as an explanation for the observed cross-cultural variations [e.g., (21, 27)]. In general terms, mental health stigma can be understood as the negative stereotyping, biases, and discrimination faced by people with mental illness which negatively impacts the lives of affected persons in various ways (28). However, empirical evidence to support these claims is scarce and rather contradictory. Whereas, Wang et al. (29) and Rao et al. (30) found a significant association between stigma and somatization in a sample of Chinese undergraduate students and South Indian psychiatric inpatients, neither Heredia Montesinos et al. (31) nor Raguram et al. (32) found such an association in Turkish migrants or South Indian psychiatric outpatients, respectively.

In the literature on Arab mental health, various sources have suspected a causal relationship between mental health stigma and somatic symptoms (33–35). For instance, Al-Krenawi and Graham (34) attribute somatic symptom expression to a higher social acceptability of physical over psychological complaints in Arab cultures. In general, mental health stigma has been found to be highly prevalent in both Arab cultures and refugee populations (36–38). For instance, Dardas et al. (39) report that 88% of a representative sample of Jordanian adolescents have moderate to high stigma concerning depression. This in turn influences the help-seeking behavior for mental health issues, as individuals from Arab cultures fear bringing shame not only to themselves, but also to their families (40). Similarly, refugee adolescents from different countries have been shown to label mental health problems with a type of "craziness" that has to be hidden, because it negatively influences family reputation, social status and marriage prospects (41). As such, the population of Arabic-speaking refugees seems to be well-suited for the investigation of the relationship

between stigma and the expression of somatic symptoms in depressed individuals.

Thus, the aim of the present study is to explore the representation of depressive symptoms in Arabic-speaking refugee outpatients. Furthermore, the prevalence of internalized mental health stigma will be assessed in order to investigate its relationship to the expression of psychological and somatic symptoms. Since various sources suspect that the bodily expression of distress is high in Arab cultures, *because* of prevalent mental health stigma (33–35), we test the hypothesis that internalized mental health stigma, which is the psychological impact of applying these negative societal stereotypes to oneself (42), is positively associated with the expression of somatic symptoms.

METHODS

Participants

For the current cross-sectional study, a convenience sample of 100 Arabic-speaking refugees was recruited via the MEHIRA (Mental Health in Refugees and Asylum Seeker) study (43) between October 2018 and October 2019 in Berlin, Germany. Five individuals were excluded due to missing questionnaires, resulting in a total sample size of $N = 95$. An a priori power analysis indicated that a total sample size of $N = 68$ is required for the detection of a moderate effect ($f^2 = 0.15$), with two predictors and a power of 80%, given an alpha error of 5%. Recruitment sites included the *Clearingstelle*, an outpatient facility for refugees in Berlin, and a psychiatric outpatient facility specialized in Arabic-speaking patients in Berlin, both established by the Charité Universitätsmedizin Berlin, Germany.

Inclusion criteria were defined as the following: (1) individuals between 18 and 65 years; (2) native Arabic speakers; (3) status of a refugee or asylum seeker which is defined according to the UNHCR as individuals who have been forced to flee their home country due to war, violence, or persecution (refugee) or as individuals who have requested sanctuary in another country and have applied for recognized refugee status there after fleeing their country (asylum seeker); who (4) show relevant symptoms of depression, defined by scoring "several days" or higher on the PHQ-9 on at least five of the nine items.

The exclusion criteria were: (1) missing informed consent; and a (2) current risk of suicidality based on clinical judgement or a score of four or more on the Montgomery–Åsberg Depression Rating Scale (MADRS) item 10.

Procedure

Study participants were invited to take part in a baseline assessment, lasting ∼90 min. Questionnaires of this comprehensive test-battery included, amongst others, the Arabic versions of the PHQ-15, the PHQ-9, the HTQ, and the ISMI, as well as socio-demographic information. All questionnaires were self-administered, yet an Arabic speaking psychologist surveilled the procedure and assisted in cases of illiteracy or need for further support. The data was then pseudonymized and transferred to a spreadsheet using the Statistical Package for the Social Sciences (SPSS) 22 for Windows (44). Since the study was conducted as a supplement to the MEHIRA study, it was covered and approved by the respective ethics vote issued from the ethics committee of the Charité – Universitätsmedizin Berlin (EA2/070/17).

Questionnaires

Patient Health Questionnaire-15 (PHQ-15)

The PHQ-15 (45) is a brief and widely used self-administered screening instrument for the expression of somatic symptoms. Its 15 items cover over 90% of the physical symptoms seen in primary care, such as stomach/back pain and/or headaches, excluding upper respiratory tract symptoms. Participants indicate on a three-point Likert scale, how much they had been bothered by the respective symptom in the past 4 weeks, ranging from "not bothered at all" (0) to "bothered a lot" (2). Symptom severity can be classified according to a sum score, ranging from 0 to 30, while scores of ≥5, ≥10, ≥15 represent mild, moderate, and severe levels, respectively. The PHQ-15 has been proven to be highly reliable and valid in both clinical and occupational settings (45–48). Furthermore, it has been previously applied to screen for somatic symptoms across cultures and in refugee populations (49, 50). According to a review of 40 scales for the assessment of self-reported somatic symptoms, the PHQ-15 can be considered the best option for large-scale studies and cross-cultural comparisons based on several criteria including psychometric criteria, type of symptoms, time frame, languages, and patient burden (51). An Arabic translation of the PHQ-15 has been demonstrated to be both valid and highly reliable in a sample of Saudi University students, with a Cronbach's α of 0.83 (52). For the current study, Cronbach's α was 0.82.

Patient Health Questionnaire-9 (PHQ-9)

The PHQ-9 (53) is a self-administered diagnostic screening instrument for the assessment and monitoring of depression severity in primary care. The nine items of the scale assess each of the Diagnostic Criterion A symptoms for a Major Depressive Episode according to the DSM-IV (54). Participants indicate the degree to which they had been bothered by the respective symptom in the past 2 weeks on a four-point Likert scale, ranging from "not at all" (0) to "nearly every day" (3). The PHQ-9 sum-score can be divided into the following five categories of increasing symptom severity: minimal (2–9), mild (10–14), moderate (15–19), and severe (≥20). Furthermore, a cutoff-score of ≥10 has been recommended for the detection of a current Major Depression Episode (55). Numerous studies have demonstrated the validity and reliability of the PHQ-9 in specific medical populations, in the general population and psychiatric samples (46, 56–58). Furthermore, cross-cultural measurement invariance has been demonstrated for both the PHQ-9 and the PHQ-15 in two studies comparing Germans and migrants, indicating their applicability for cross-cultural research (59, 60). Two studies have been conducted to assess the reliability and validity of an Arabic translation of the PHQ-9 in Saudi University students (52) and a Lebanese outpatient sample (61). Evidence for factorial, discriminant, and convergent validity was provided, and the reliability of the scale was found to be high ($0.86 \leq \alpha \leq 0.88$) (52, 61). In the present sample, Cronbach's α was 0.79.

The Brief Version of the Internalized Stigma of Mental Illness Scale (ISMI-10)

The ISMI-10 (62) is a brief, ten-item questionnaire for the assessment of internalized stigma of mental illness. In its original form, the ISMI comprises of 29 statements, measuring the five dimensions *alienation, discrimination experience, social withdrawal, stereotype endorsement*, and *stigma resistance* (63). The shortened version entails the two items of each subscale that demonstrated the strongest psychometric item qualities. Participants are asked to indicate their degree of agreement to a particular statement on a four-point Likert scale, ranging from "strongly disagree" (1) to "strongly agree" (4). The ISMI mean score can be interpreted following a 4-category method [minimal to no internalized stigma (1.00–2.00); mild (2.01–2.50); moderate (2.51–3.00); severe internalized stigma (3.01–4.00)] (64), or according to a 2-category method [does not report high internalized stigma (1.00–2.50); reports high internalized stigma (2.51–4.00)] (65). Comparable psychometric properties have been found for the ISMI-10 and the 29-item version, in terms of validity and reliability (62). In further validation studies, the scale was found to be reliable ($0.75 \leq \alpha \leq 0.86$) and demonstrated predictive validity in relation to depression, physical health, self-esteem, functioning, recovery orientation, perceived devaluation and discrimination, empowerment, and quality of life (62, 66–68). To date, only the ISMI-29 has been translated into Arabic and validated within a refugee population (69). The Arabic version was shown to predict symptoms of depression, anxiety, and PTDS, and the reliability was found to be excellent ($\alpha = 0.94$). For the present study, the 10 items of the ISMI-10 were selected out of the Arabic translation of the ISMI-29. Cronbach's α of this version was 0.70 in the current sample.

The Harvard Trauma Questionnaire (HTQ)

The HTQ (70) is the most widely used screening instrument for the assessment of trauma-related symptoms among refugee populations worldwide (71, 72). Part four covers 40 items related to PTSD and refugee-specific expressions of functional distress (73). The first 16 items of this last part are derived from the DSM-IV criteria for PTSD and are used for the purposes of the present study. Participants are asked to indicate on a four-point Likert scale how much they had been bothered by a respective symptom, ranging from "not at all" (1) to "extremely" (4). Individuals can be considered symptomatic for PTSD according to the DSM-IV if their mean score reaches the cut-off of ≥2.5. Across a wide range of populations, this measure has been found to be reliable, and convergent validity has been demonstrated (74). An Arabic translation of the 16 item measure of the HTQ by Shoeb et al. (75) was found to be highly reliable in a sample of Syrian Kurdish refugees, with a Cronbach's α of 0.88 (76). Furthermore, the number of instances of torture and other traumatic events experienced were positively related to PTSD symptoms, underlining the HTQ's concurrent validity (76). In the present study, Cronbach's α was 0.89.

Statistical Analyses

All data was pseudonymized and stored in a password protected electronic spreadsheet. Statistical analyses were performed using the IBM Statistical Package for the Social Sciences (SPSS) 22 for Windows (44). Descriptive statistics were used to analyze the sample's socio-demographic characteristics (**Table 1**), as well as to provide an overview over the agreement to each individual item of the PHQ-15 and the PHQ-9 (**Tables 2**, **3**). Multiple regression analyses were conducted with the PHQ-15 score and PHQ-9 score as dependent variables, and the ISMI and the HTQ as predictors to test for associations of stigma with somatic and psychological symptoms, while controlling for trauma (**Table 4**). Finally, an explanatory factor analysis was performed on the PHQ-15 items using varimax rotation to identify culture-specific symptom clusters (**Table 5**). The alpha level of significance was set at 5%.

TABLE 1 | Sociodemographic characteristics of the survey sample.

Sociodemographic data	*N* = 95
Gender	
Male	54 (56.8%)
Female	41 (43.2%)
Age in years M ± SD 33.80 ± 9.69*	
19–30	44 (46.3%)
31–40	29 (30.5%)
41–50	15 (15.8%)
51–64	7 (7.4%)
Country of Origin	
Syria	75 (78.9%)
Iraq	12 (12.6%)
Palestine	4 (4.2%)
Kuwait	1 (1.1%)
Jordan	1 (1.1%)
Lebanon	1 (1.1%)
Libya	1 (1.1%)
Current state of residence	
Permanent residence permit	2 (2.1%)
Temporary residence permit	84 (88.4%)
No legal residence permit	9 (9.5%)
Education in years M ± SD 10.46 ± 2.99*	
0–5	6 (6.3%)
6–10	28 (39.5%)
11–15	57 (60.0%)
>15	4 (4.2%)

**Mean and Standard Deviation.*

RESULTS

For the present study, the data of 95 participants, 54 males and 41 females, with a mean age of 33.80 years ($SD = 9.69$; range 19–64), were analyzed. With over 78%, the majority of the refugees in the sample named Syria as their country of origin, followed by Iraq (12.6%) and Palestine (4.2%). Only a small percentage of 2.1% received a permanent residence status

TABLE 2 | Mean and standard deviation for each item of the PHQ-15 and the total scale.

PHQ-15	*M (SD)*
Total score (0–30)	**13.24 (5.58)**
Single items values	
1. Stomach pain	0.69 (0.76)
2. **Back pain**	**1.26(0.75)**
3. Pain in your arms, legs, or joints	1.25 (0.76)
4. Menstrual cramps or other problems with your period (women only, $N = 38$)	1.03 (0.79)
5. Pain or problems during sexual intercourse	0.29 (0.54)
6. Headaches	1.25 (0.73)
7. Chest pain	0.85 (0.71)
8. Dizziness	0.79 (0.74)
9. Fainting spells	0.14 (0.37)
10. Feeling your heart pound or race	1.02 (0.68)
11. Shortness of breath	0.97 (0.78)
12. Constipation, loose bowels, or diarrhea	0.74 (0.75)
13. Nausea, gas, or indigestion	0.65 (0.74)
14. **Feeling tired or having low energy**	**1.53 (0.70)**
15. **Trouble sleeping**	**1.44 (0.74)**

N = 95, the three items with the highest agreement are printed bold.

TABLE 3 | Mean and standard deviation for each item of the PHQ-9 and the total scale.

PHQ-9	*M (SD)*
Total score (0–27)	**16.28 (5.67)**
Single items values	
1. Little interest or pleasure in doing things	2.05 (0.92)
2. **Feeling down, depressed, or hopeless**	**2.18 (0.84)**
3. **Trouble falling or staying asleep, or sleeping too much**	**2.21 (1.01)**
4. **Feeling tired or having little energy**	**2.25 (0.89)**
5. Poor appetite or overeating	1.77 (1.17)
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	1.65 (1.11)
7. Trouble concentrating on things, such as reading the newspaper or watching television	1.99 (1.05)
8. Moving or speaking so slowly that other people could have noticed? Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual	1.26 (1.18)
9. Thoughts that you would be better off dead or of hurting yourself in some way	0.92 (1.09)

N = 95, the three items with the highest agreement are printed bold.

from local authorities, whereas most individuals had a temporary residence status (88.4%), or even no legal residence permit (9.5%) to stay in Germany. On average, participants completed 10.46 years of schooling ($SD = 2.99$). Detailed information concerning all sociodemographic characteristics assessed is provided in **Table 1**. As such, the sociodemographic characteristics in terms of age and gender seem to be highly comparable to representative panel data of refugees living in Germany (77). In terms of education, a comparison is rather difficult due to the different types of assessment (years of education vs. international standard of education). Yet, the samples also seem comparable in this respect.

TABLE 4 | Multiple regression analyses for the prediction of somatic and psychological symptoms by internalized stigma and the trauma.

	PHQ-15[a]			PHQ-9[b]		
Variable	***B***	***SE***	***β***	***B***	***SE***	***β***
ISMI	1.00	1.02	0.09	2.75	0.89	0.25*
HTQ	4.66	0.85	0.51**	5.08	0.72	0.57**
R^2	0.29			0.47		
F	18.00**			38.93**		

[a]$N = 91$, [b]$N = 92$; **$p \leq 0.001$, *$p \leq 0.01$.

Symptom Representation

Descriptive analyses were performed for both the PHQ-15 and the PHQ-9 to explore the expression of depressive symptoms in the present sample. The results are depicted in **Table 2** for the PHQ-15 and **Table 3** for the PHQ-9. For the PHQ-15, the calculated mean score of 13.24 ($SD = 5.58$) indicates a moderate level of somatic symptoms. A detailed analysis on the item level revealed that the Arabic-speaking refugees in the sample were mostly bothered by *feeling tired or having low energy* ($M = 1.53$; $SD = 0.70$), followed by *trouble sleeping* ($M = 1.44$; $SD = 0.74$), and *back pain* ($M = 1.26$; $SD = 0.75$). For the PHQ-9, the mean score of 16.28 ($SD = 5.67$) is also indicative of a moderate level of psychological symptoms. Here, the symptoms that were experienced most frequently by the participants were *feeling tired or having little energy* ($M = 2.25$; $SD = 0.89$), followed by *trouble falling or staying asleep, or sleeping too much* ($M = 2.21$; $SD = 1.01$), and *feeling down, depressed, or hopeless* ($M = 2.18$; $SD = 0.84$). A correlation analysis revealed a moderately significant positive association between psychological and somatic symptoms ($r = 0.54$, $p < 0.001$).

Influence of Stigma on Symptom Representation

For the following analyses, three participants had to be excluded because they did not provide any answer to the ISMI scale. On average, participants displayed a rather low level of internalized stigma ($M = 2.25$; $SD = 0.50$), corresponding to *mild internalized stigma* according to the 4-category method, or to the category of *does not report high internalized stigma* according to the 2-category method (see above). The mean score of 2.58 ($SD = 0.61$) in the HTQ shows that, on average, individuals of the sample show relevant symptoms of PTSD according to the DSM-IV.

These two variables were entered as predictors into multiple regression analyses with the PHQ-15 and the PHQ-9 as dependent variables to test for associations of stigma with somatic and psychological symptoms while controlling for the

TABLE 5 | Explanatory factor analysis of the PHQ-15 items in Arabic-speaking refugees.

Item	Factor loads				
	1	2	3	4	5
Heart pound or race	**0.830**	0.028	0.057	0.123	−0.084
Shortness of breath	**0.784**	0.112	0.169	0.193	−0.117
Dizziness	**0.709**	0.236	−0.015	0.054	0.044
Chest pain	**0.588**	0.181	0.325	0.061	0.075
Painful sexual intercourse	−0.002	**0.677**	0.128	0.087	0.001
Tired/low energy	0.385	**0.540**	−0.022	0.301	0.051
Fainting spells	0.382	**0.496**	−0.219	−0.159	−0.030
Pain in arms, legs, joints	0.375	**0.484**	0.213	0.227	0.003
Constipation/diarrhea	−0.073	−0.198	**0.826**	0.141	0.045
Headaches	0.357	0.319	**0.608**	0.054	−0.018
Back pain	0.279	0.382	**0.593**	−0.027	−0.011
Stomach pain	0.042	0.227	−0.020	**0.859**	−0.088
Nausea, gas, indigestion	0.379	−0.050	0.264	**0.724**	0.112
Menstrual cramps	0.045	0.287	0.192	0.112	**0.826**
Trouble sleeping	0.145	0.381	0.195	0.161	**−0.738**
Eigenvalues	4.57	1.51	1.22	1.12	1.06
% of variance	30.48	10.07	8.16	7.49	7.09
α	0.78	0.56	0.55	0.68	−0.56

The table shows the five extracted factors after principal factor extraction and varimax rotation with their initial eigenvalues, the percentage of explained variance and internal consistency by Arabic-speaking refugees. Factor loads of individual items >0.4 are printed bold. By logical grouping factors were defined as following: (1) symptoms of sadness, (2) pain-induced fatigue, (3) head-body related symptoms, (4) indigestion, and (5) male sleep problems.

well-established association of trauma and the expression of somatic symptoms (78) (**Table 4**). For the regression model with the PHQ-15 as the dependent variable, one further participant had to be excluded, since his/her studentized deleted residual of 3.19 was classified as an outlier. No participant was excluded following a regression diagnostics procedure for the model with the PHQ-9 as a dependent variable.

For the PHQ-15, results revealed that the HTQ was the only significant predictor for the PHQ-15 score ($\beta = 0.51$, $p < 0.001$), whereas the ISMI did not reach statistical significance ($\beta = 0.09$, $p = 0.16$). In total, this model could explain 29% of the variance in the PHQ-15 score ($F_{(2,88)} = 18.00$, $p < 0.001$). For the PHQ-9, significant positive associations were found with both the ISMI ($\beta = 0.25$, $p = 0.002$) and the HTQ ($\beta = 0.57$, $p < 0.001$). Together, these two predictors accounted for 47% of the variance in the PHQ-9 score ($F_{(2,89)} = 38.93$, $p < 0.001$). These results do not support the postulated hypothesis that internalized stigma is associated with more somatic symptom expression.

Factor Structure of the PHQ-15 in a Sample of Arabic Speaking Refugees

Furthermore, the factor structure of all PHQ-15 items was examined in the present sample. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.724, which is above the recommended value of 0.5. Bartlett's test of sphericity was significant ($\chi^2(105) = 334.36$, $p < 0.001$). A principal factor extraction was performed using varimax rotation. The rotated factor matrix is depicted in **Table 5**. In this way, five distinct factors could be identified and were labeled with the help of an Arabic psychologist: (1) symptoms of sadness, (2) pain-induced fatigue, (3) head-body-related symptoms, (4) indigestion, and (5) male sleep problems.

Missing Values

Lastly, a close inspection of missing values was conducted to identify any regularities. Generally, missing values were rare and occurred only in two items of the PHQ-15: The item *Menstrual cramps or other problems with your period* was not answered by three (female) participants, and the item *Pain or problems during sexual intercourse* was left unanswered by 16 participants. Of the latter ones, 14 participants identified as male.

DISCUSSION

The present study aimed to explore the representation of depressive symptoms in a sample of Arabic-speaking refugee outpatients. Specifically, the expression of psychological and somatic distress was analyzed to inform clinicians about the most prevalent symptoms occurring within the largest refugee population in Germany. Furthermore, the prevalence of internalized stigma was examined to empirically investigate the supposed relationship between stigma and somatic symptom expression. The main results of this research show that Arabic-speaking refugee outpatients express a moderate level

of both somatic and psychological symptoms of depression, and that stigma does not seem to be associated with somatic symptoms, but rather with psychological symptoms.

The present findings add empirical evidence from a rather under-researched population to the debate about somatization and psychologization across cultures. The moderate level of somatic symptoms expressed supports clinical observational data, which have reported a high level of bodily distress in Arab mental health patients and refugees (34, 79). This is even substantiated by an in-depth analysis of single items of the PHQ-9 which shows that the most prevalent psychological symptoms were the ones that were shared and overlap with the PHQ-15, namely a "feeling of energy loss" and "sleep disturbances." Therefore, these key depressive symptoms can be considered at least quasi-somatic, which highlights the role of somatic symptoms in Arabic-speaking refugees. Nevertheless, the rate of psychological depressive symptoms was also found to be substantial, and a moderately positive correlation was found between psychological and somatic symptoms. Even when the two overlapping items were deleted from both scales, the strength of the relationship still approached a significant, moderately positive level of association ($r = 0.46$, $p < 0.001$). As such, these findings are in line with the ones obtained by Lee et al. (24), who found that psychological and somatic distress coexisted in their Chinese population-based sample. Therefore, this study can be understood as another challenge for the Western mind-body dualism, as it shows that the experience of somatic distress does not preclude the simultaneous experience of psychological symptoms (26, 80).

The high prevalence of sleep problems mirrored in both the PHQ-9 and the PHQ-15 is not surprising, given that they are considered a core symptom of both depression and PTSD (81). As such, these findings are consistent with those by Sandahl et al. (82), who report that about 99% of their sample of 752 traumatized refugees reported having trouble sleeping and recurrent nightmares. Furthermore, a growing body of research shows that sleep disturbances in the context of depression have been linked to an increased risk of adverse health outcomes, including, functional impairment, an increased risk for suicidality, non-remittance, as well as decrements in mobility, self-care, cognition, pain, and interpersonal activities [for an overview see Stickley et al. (83)]. Thus, these findings have important implications for clinicians working with Arabic-speaking refugees, since interventions to improve sleep quality might have the potential to alleviate their psychological distress (81). A recently published manual for group therapy sessions with refugees can serve as a valuable source in this respect (84).

A further goal of the present research was the investigation of potential associations of internalized stigma with the representation of depressive symptoms. Contrary to the postulated hypothesis, our results show no association between stigma and somatic symptoms and thus provide no evidence for the supposed association between these constructs in the literature concerning Arab mental health (33–35). Moreover, these findings contribute to the open debate on the relation of stigma and the expression of bodily distress in cross-cultural research and substantiate evidence from previous research that did not find such associations (31, 32). However, stigma was found to be related to the severity of psychological symptoms when trauma symptoms were controlled. Various sources have reported similar findings, yet, due to the cross-sectional study design of this and previous studies, no causal relationship can be inferred (69, 85, 86). This highlights the need for further experimental studies that seek to lower stigma and investigate whether the depression severity level can be effectively reduced through such interventions.

Interestingly, the level of internalized stigma was relatively low in the present sample. This was unexpected, given that previous research has quite consistently demonstrated a high prevalence of mental health stigma in both Arab cultures and refugee populations (36–40). In a recent study, Karnouk et al. (87) report a similarly low level of stigma in psychiatric patients from the Jordanian host- and refugee community. As a possible explanation, the authors argue that this decrease might represent the effect of current efforts in the Arab world to meet the need for mental health care services and to raise public awareness of mental health issues (88). Alternatively, this low level of stigma might be the result of sampling bias. The current convenience sample comprised of treatment seeking individuals, who voluntarily participated in a study on refugee mental health care. As such, it is to be expected that these individuals generally have lower stigma concerning mental health issues compared to the ones who denied their participation or did not seek treatment at all. Moreover, the at least basic education level, as well as the rather young mean age of the sample, might have contributed to the low level of stigma observed (89, 90). In fact, a *post-hoc* correlation analysis revealed a positive association between age and stigma ($r = 0.27$, $p = 0.010$), yet, no association between years of schooling and stigma was found ($r = -0.10$, $p = 0.353$). However, given the restricted variance in the sociodemographic variables in the sample, these results are tentative at best and such analyses are recommend for future research with a more divers sample. Given that the demographic characteristics are similar to the ones obtained in by a representative panel study of refugees living in Germany (77), the present results concerning the low level of stigma might be transferable to the population of Arabic-speaking refugees in Germany, at least in this respect.

The explanatory approach for the identification of specific symptom clusters resulted in five independent factors that were named with the help of an Arabic psychologist: (1) symptoms of sadness, (2) pain-induced fatigue, (3) head-body related symptoms, (4) indigestion, and (5) male sleep problems. Three of these clusters have also been identified in a qualitative study with four focus groups within the Arab community in Dubai, who sought to identify the terms and descriptions that are commonly used for depressive symptoms (91). The first factor of symptoms of sadness is similar to the description of "[a] feeling of tightness or constriction in the chest […where] the depressed person feels unable to take a deep breath [… because] the chest is felt to be too tightly packed with an excess of unpleasant feelings […]" (p. 216). The second factor of pain-induced fatigue is described as "[f]atigue due to generalized aches [… with] a subjective feeling of lack of body energy and soundness (ta'bana), the limbs suffering the most" (p. 216). It has to be noted that

the high loading of the item painful sexual intercourse has to be interpreted with caution due to the observed missing values. Lastly, the fourth factor of indigestion resembles the cluster of "[a]limentary symptoms in the form of nausea or sickness and poor appetite, which are attributed to the abdomen and particularly to the liver (chabid)" (p. 216).

Whereas, these three factors provide empirical evidence for clusters that have been identified by previous qualitative research (91), the interpretation of the factors three and five seems to be less straightforward. With constipation or diarrhea, headaches, and back pain, factor three comprises somatic symptoms from very different locations in the body. According to Hassan et al. such pain sensations in different body parts including "[…] cramps in the guts, or pain in the stomach or in the head […]" (p. 23) have been found to be a typical expression of fatigue and general distress in war-affected Syrians, coupled with a perception that the organs are unable to contain the distress (92). Factor five combines the items menstrual cramps and trouble sleeping with inverse factor loadings. Since male individuals had a mean score of 0 on the item menstrual cramps, the inverse association was assumed to be indicative of a higher severity level of sleep problems in men than in women. A t-test supported this assumption ($t(72.22) = -2.24$, $p = 0.03$). This is interesting, given that females have been previously found to exhibit more sleep problems compared to men (93). Further studies are necessary to investigate whether this observation describes a pattern in Arabic-speaking refugees. Also, it is suggested to perform individual factor analyses on the PHQ-15 items for males and females in studies with larger sample sizes.

These symptom clusters highlight the reciprocal relationship of explanatory models of mental illness with language and culture. In Arabic, emotions are usually described with metaphors and imagery drawn from rich poetic cultural resources (34, 92, 94). Especially references to the heart seem common for the description of depressive symptoms and distress. Hassan et al. (92) have compiled a list of commonly used expressions and idioms for distress in Syrian Arabic on the basis of suggestions by various Arabic-speaking mental health professionals. Depressive symptoms are described by a feeling of "heaviness in the heart," "pain in the heart," or a "squeezed heart," or by phrases such as "blindness got to my heart" and "my heart is broken" (p. 23–26). Thus, it is not surprising that the first factor, comprising symptoms such as a pounding heart, shortness of breath, and chest pain, could explain the highest proportion of the variance in all somatic symptoms. A better understanding of such idioms might enhance a clinical conversation with Arabic-speaking mental health patients and could even inform interventions and treatment approaches (92).

The analysis of missing values revealed that specifically shame related items, including menstrual cramps and painful sexual intercourse, were occasionally left unanswered by participants. Especially males did not answer the item on sexual pain and some explained this with the absence of their wife. Even though this answer seems plausible, the pattern observed might additionally point to an often documented, still prevailing taboo of sexuality-related issues in the Arab world, as well as a lack of education on these matters (95, 96). Thus, the present findings might argue for special care and cultural awareness when talking about sexuality-related topics with Arabic-speaking refugees in research or health care settings. Therefore, it is recommended to match patients with clinicians or interviewers of the same sex, at least at the beginning of therapy, a procedure that could not always be assured in the present research concerning the surveilling psychologist due to limited resources (97).

A particular strength of the present study lies in the selection of measures for somatic and psychological symptoms of depression that have been explicitly recommended for cross-cultural research (51). This lays the foundation for the comparison of the given results with results from studies with refugee populations from other cultural backgrounds and thus satisfies a call by Rohlof et al. (79), who criticized that the abundance of different, often non-validated measures exacerbate a global understanding of bodily distress in refugees.

The present results have to be interpreted in light of several limitations: Firstly, concerning the sample recruited the selection bias has resulted in a convenience sample that might not be representative of the population of Arabic-speaking refugees with symptoms of depression, especially concerning the level of mental health stigma. Furthermore, the convenience sample consisted of refugees from mostly Syrian descent, which might impede the generalizability to Arabic-speaking refugees in general and should thus be considered in future research. However, since the vast majority of refugees worldwide as well as in Germany originate from Syria, the sample seems representative for the underlying population. It is also highly recommended to recruit a larger sample in future research in order to analyze how variables like gender or age moderate the associations observed. Secondly, depressive symptoms were merely assessed with the PHQ-9, since clinical diagnoses were not available for all participants. It is recommended to use standardized clinical interviews or expert diagnoses in further studies to specifically investigate symptoms of Arabic-speaking refugees with a diagnosis of depression. Likewise, information concerning comorbidities, medication, or other demographic variables like residence time in Germany could not be included here, but would be vital in future research. Thirdly, the use of self-report questionnaires might have resulted in common method variance, which might have increased the observed effects in the regression analyses. Yet, it has to be noted that self-report questionnaires might be especially appropriate for research in this population, since this method has been found to reduce a respondent's discomfort and embarrassment for sensitive issues and might thus result in more reliable data (98). Concerning the questionnaires used, it also has to be mentioned that the only the ISMI-29, but not the ISMI-10 used, has been validated in an Arabic-speaking refugee population and future research is encouraged to use validated questionnaires to minimize measurement bias. Fourthly, no comparison group was included from another cultural background. This would have been especially necessary for the analysis and interpretation of the symptom clusters found in order to infer culture-specific regularities. Therefore, the inclusion of comparison groups is highly recommended for further research. Lastly, it needs to be stressed that even though country of origin was not used as a

proxy for culture, individuals from very different backgrounds were collapsed into the category of Arabic-speaking refugees for the purpose of the present study. As suggested by Kirmayer and Ryder (21), this grouping was based on specific cultural contexts and processes such as shared language background and experiences of flight, nevertheless, this leads to an impression of a rather homogenous group which is certainly not the case.

In conclusion this study provides empirical evidence that both somatic and psychological symptoms are commonly used forms of expressing depressive symptoms in Arabic-speaking refugees, while problems with sleep and energy loss seem to be the most prevalent symptoms reported. Although these results should be interpreted with caution, it does not appear that a higher level of somatic symptom expression can be traced back to mental health stigma, but rather to culture-specific explanatory models, idioms, and expressions. The implications that arise from these findings are that mental health professionals should be trained more thoroughly in both the special mental health needs of Arabic-speaking refugees as well as in culturally mediated modes of symptom interpretation and expression. Given that refugees in Germany seldomly receive adequate mental health treatment (10), learning about typical symptoms and cultural codes might help improve our understanding of a cultural barrier, i.e., the way of expressing depressive symptoms, and might eventually contribute to faster diagnosis and better mental health care provision for the largest refugee population in Germany.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Ethical Committee of Charité - Universitätsmedizin Berlin (EA2/070/17). The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

NL contributed to the conceptualization of the idea, data analysis and interpretation, as well as to writing. CK contributed to scale selection, data collection logistics, interpretation of the data, and supervision. EH, MB, and KB contributed to the conceptualization of the idea and study design, revision, and supervision. DR, DC, and LS contributed to scale selection and translation, as well as to data collection logistics. All authors read and approved the final manuscript.

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• 7.4 PUBLICATION FOUR •

Rayes D, **Karnouk C**, Churbaji D, Walther L, & Bajbouj M. (2021) Faith-Based Coping Among Arabic-Speaking Refugees Seeking Mental Health Services in Berlin, Germany: An Exploratory Qualitative Study. *Frontiers Psychiatry*, *12*:595979. doi: 10.3389/fpsyt.2021.595979. PMID: 33633605; PMCID: PMC7901912.

Journal Data Filtered By: **Selected JCR Year: 2019** Selected Editions: SCIE,SSCI Selected Categories: **"PSYCHIATRY"** Selected Category Scheme: WoS

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Rank	Full Journal Title	Total Cites	Journal Impact Factor	Eigenfactor Score
1.	World Psychiatry	6,486	40.595	0.017130
2.	JAMA Psychiatry	13,433	17.471	0.056110
3.	Lancet Psychiatry	6,405	16.209	0.028290
4.	PSYCHOTHERAPY AND PSYCHOSOMATICS	4,275	14.864	0.006480
5.	AMERICAN JOURNAL OF PSYCHIATRY	41,967	14.119	0.034380
6.	MOLECULAR PSYCHIATRY	22,227	12.384	0.054730
7.	BIOLOGICAL PSYCHIATRY	44,016	12.095	0.053910
8.	JOURNAL OF NEUROLOGY NEUROSURGERY AND PSYCHIATRY	30,621	8.234	0.028510
9.	SCHIZOPHRENIA BULLETIN	17,703	7.958	0.027070
10.	BRITISH JOURNAL OF PSYCHIATRY	24,380	7.850	0.020520
11.	JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY	19,837	7.035	0.021080
12.	JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY	19,837	7.035	0.021080
13.	JOURNAL OF THE AMERICAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY	19,831	6.936	0.017840
14.	NEUROPSYCHOPHARMACOLOGY	26,281	6.751	0.040680
15.	BRAIN BEHAVIOR AND IMMUNITY	16,285	6.633	0.028560

16.	JOURNAL OF ABNORMAL PSYCHOLOGY	16,003	6.484	0.014170
17.	ADDICTION	19,861	6.343	0.030820
18.	Epidemiology and Psychiatric Sciences	1,584	5.876	0.004770
19.	PSYCHOLOGICAL MEDICINE	26,702	5.813	0.039350
20.	Clinical Psychological Science	2,599	5.415	0.011100
21.	BIPOLAR DISORDERS	4,838	5.410	0.006610
22.	ACTA PSYCHIATRICA SCANDINAVICA	13,539	5.362	0.011750
23.	Translational Psychiatry	9,160	5.280	0.029500
24.	Journal of Behavioral Addictions	2,184	5.143	0.005970
25.	CNS DRUGS	4,768	4.786	0.007670
26.	PSYCHONEUROENDOCRINOLOGY	19,287	4.732	0.027100
27.	DEPRESSION AND ANXIETY	9,355	4.702	0.013860
28.	AUSTRALIAN AND NEW ZEALAND JOURNAL OF PSYCHIATRY	7,192	4.657	0.008620
29.	Current Psychiatry Reports	4,785	4.539	0.010670
30.	EUROPEAN PSYCHIATRY	6,054	4.464	0.009470
31.	CURRENT OPINION IN PSYCHIATRY	4,182	4.392	0.006260
32.	JOURNAL OF PSYCHIATRY & NEUROSCIENCE	3,297	4.382	0.004290
33.	PROGRESS IN NEURO-PSYCHOPHARMACOLOGY & BIOLOGICAL PSYCHIATRY	11,179	4.361	0.013670
34.	PHARMACOPSYCHIATRY	1,787	4.340	0.001580
35.	INTERNATIONAL JOURNAL OF	6,749	4.333	0.011150

	NEUROPSYCHOPHARMACOLOGY			
36.	npj Schizophrenia	502	4.304	0.002060
37.	JOURNAL OF CLINICAL PSYCHIATRY	18,652	4.204	0.018530
38.	WORLD JOURNAL OF BIOLOGICAL PSYCHIATRY	2,567	4.164	0.004200
39.	DRUG AND ALCOHOL DEPENDENCE	20,269	3.951	0.040630
40.	EUROPEAN CHILD & ADOLESCENT PSYCHIATRY	5,422	3.941	0.009450
41.	JOURNAL OF AFFECTIVE DISORDERS	32,869	3.892	0.055920
42.	SUICIDE AND LIFE-THREATENING BEHAVIOR	4,512	3.867	0.005980
43.	EUROPEAN NEUROPSYCHOPHARMACOLOGY	7,597	3.853	0.013120
44.	SCHIZOPHRENIA RESEARCH	22,003	3.759	0.030040
45.	JOURNAL OF PSYCHIATRIC RESEARCH	16,085	3.745	0.020560
46.	PSYCHOSOMATIC MEDICINE	12,560	3.702	0.009890
47.	PSYCHOSOMATIC MEDICINE	12,560	3.702	0.009890
48.	INTERNATIONAL JOURNAL OF EATING DISORDERS	9,613	3.668	0.010750
49.	Eating and Weight Disorders-Studies on Anorexia Bulimia and Obesity	1,977	3.634	0.002830
50.	Mindfulness	4,006	3.581	0.008500
51.	World Journal of Psychiatry	701	3.545	0.002190
52.	JMIR Mental Health	1,103	3.535	0.003440
53.	Internet Interventions-The Application of Information Technology in Mental and Behavioural Health	996	3.513	0.002720
54.	European Journal of Psychotraumatology	1,987	3.478	0.004940

55.	AMERICAN JOURNAL OF GERIATRIC PSYCHIATRY	7,144	3.393	0.009920
56.	AMERICAN JOURNAL OF MEDICAL GENETICS PART B-NEUROPSYCHIATRIC GENETICS	4,033	3.387	0.006040
57.	CNS SPECTRUMS	2,479	3.356	0.003480
58.	PSYCHIATRY AND CLINICAL NEUROSCIENCES	3,696	3.351	0.004260
59.	SOCIAL PSYCHIATRY AND PSYCHIATRIC EPIDEMIOLOGY	8,775	3.335	0.012760
60.	CANADIAN JOURNAL OF PSYCHIATRY-REVUE CANADIENNE DE PSYCHIATRIE	6,097	3.313	0.007620
61.	EUROPEAN ARCHIVES OF PSYCHIATRY AND CLINICAL NEUROSCIENCE	4,136	3.288	0.004760
62.	BEHAVIOR THERAPY	5,758	3.243	0.006320
63.	PSYCHOPHARMACOLOGY	22,417	3.130	0.019820
64.	JOURNAL OF PSYCHOPHARMACOLOGY	6,262	3.121	0.009340
65.	JOURNAL OF ANXIETY DISORDERS	7,130	3.079	0.009390
66.	HARVARD REVIEW OF PSYCHIATRY	1,889	3.072	0.003020
67.	ACTA NEUROPSYCHIATRICA	930	3.000	0.001790
68.	Therapeutic Advances in Psychopharmacology	621	3.000	0.001230
69.	International Journal of Bipolar Disorders	457	2.966	0.001480
70.	INTERNATIONAL PSYCHOGERIATRICS	7,341	2.940	0.009920
71.	GENERAL HOSPITAL PSYCHIATRY	5,299	2.860	0.006750
72.	JOURNAL OF PSYCHOSOMATIC RESEARCH	13,356	2.860	0.010250
73.	Frontiers in Psychiatry	6,685	2.849	0.017420

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Faith-Based Coping Among Arabic-Speaking Refugees Seeking Mental Health Services in Berlin, Germany: An Exploratory Qualitative Study

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Background: The benefits of faith-based coping or using religious and spiritual beliefs as a stabilizing force for interpreting stressful or distressing events are largely unexplored among the exodus of Arabic-speaking refugee populations from Muslim-majority countries, particularly those resettled in Europe. The present study aimed to explore the manifestation of faith-based coping strategies among Arabic-speaking refugee adults seeking mental healthcare services in Berlin, Germany and explore how favorable faith-based coping strategies can be optimized from a mental health service-delivery and broader integration perspective.

Methods: A total of 17 qualitative interviews were conducted with Arabic-speaking refugee adults (six females, 11 males) seeking mental health services at the Charité Universitaetsmedizin in Berlin. Research questions aimed to solicit comprehensive perspectives from refugee adults on their mental health, with an emphasis on faith-based coping, and how this facilitated or impeded their integration into German society. Interview transcripts were translated to English from Arabic and analyzed using MAXQDA (2018) to highlight thematic patterns using a grounded theory approach.

Results: Findings were structured into four themes, including: (I) faith-based coping methods during flight, (II) changes in faith practices upon arrival, (III) faith-based coping methods to address distress during integration, and (IV) advice for German mental healthcare providers. Participants who demonstrated a stronger commitment to faith were more likely to utilize faith-based coping strategies when seeking mental health services and facing the challenges of displacement and integration. Examples of faith-based coping included prayer, supplication, reciting scripture, and seeking help from a local religious leader.

Conclusion: The findings suggest how faith and faith practices play a significant role in the mental health and integration of refugee populations in Germany and provide insight on how mental healthcare can be delivered in a culturally-sensitive manner, providing alternatives to the social, cultural, and linguistic barriers posed by the German health

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system. These findings are particularly relevant for mental health professionals, non-governmental organizations, and humanitarian aid agencies providing mental healthcare to Arabic-speaking populations recently resettled in Western contexts.

Keywords: asylum-seekers, refugees, Muslim, faith-based coping, integration, mental health, Germany

INTRODUCTION

As host countries continue to grapple with how to best integrate recently arrived refugees and asylum-seekers into their societies, the influence of faith, including religious or spiritual beliefs and practices, on refugee mental health and well-being remain largely unexplored. Refugees fleeing conflict arrive in foreign countries having experienced the effects of war, shock, upheaval, and the psychological burden of their journeys (1). Studies in Germany suggest that over 40% of refugees and asylum-seekers who have arrived since 2013 show signs of a mental disorder, a quarter of them with diagnosable post-traumatic stress disorder, anxiety, or depression (2–5). This distress is often exacerbated upon arriving to a new host country given various social, economic, and legal barriers imposed on refugees and asylum-seekers (5, 6). Recent studies also report high prevalence rates of up to 75% of mental distress among Syrian refugees resettled in Germany and an increased risk among refugees for developing a severe mental illness in comparison to the host population (7, 8). Language barriers, culture shock, and lack of economic opportunities (9) further discourage refugee populations from engaging with host communities and therefore, delay or inhibit successful integration.

Among the many European countries hosting refugees, Germany has played a vital role in the future of many – receiving nearly one million refugees from Syria, Afghanistan, and Iraq in 2015 alone (10). Since then, Germany has seen the arrival of more refugees and asylum-seekers than any other European country (11). The large influx of refugees to Europe from Muslim-majority countries has inevitably led to a sharp rise in the number of Muslims in Germany (12). Predictions by the Pew Research Center indicate that even with no future net migration, Muslims in Germany will represent 9% of the population by 2050 (13). The sharp rise in numbers of Muslims in Germany has inevitably led to a significant shift in the sociopolitical landscape within Germany and in Europe. This has partly led to the growing influence of populist and nationalist groups with anti-immigration policy agendas, provoking fear of the Muslim threat to Germany's social and religious cohesion (14–16). In addition, discrimination and stereotyping of migrant populations, particularly those from Muslim-majority countries, is often propagated by negative media coverage and misinformation campaigns by the same groups and can lead to feelings of discrimination or isolation (9, 17). This can potentially exacerbate psychological symptoms, leading to isolation and alienation, and further complicate the integration process for refugee communities, particularly those from Muslim-majority countries (18).

More recently, there has been more emphasis on the provision of culturally-sensitive mental health services to refugees and asylum-seekers, especially those fleeing from conflict or those who have experienced political or religious persecution in their country of origin (19). This includes the adaptation of existing mental health and psychosocial support services to be more accessible in different languages and ensure that mental health professionals are aware of various social norms and dynamics that exist within a particular cultural group (20). Coping methods, or efforts made by individuals to manage or overcome their psychosocial distress, can also vary across different cultures. For example, refugee populations usually rely on a social pyramid of family and close friends for support – one that might not exist anymore due to displacement, separation, and the loss of loved ones during conflict (21). With this knowledge, mental health professionals can help their refugee clients identify other forms of social support, including cultural, religious, or diaspora networks, which can help newcomers navigate their new environment and cope with the sudden changes following displacement (20, 22).

Within the umbrella of providing culturally-sensitive mental healthcare, there is a small, yet growing body of evidence on the benefits of faith-based coping, or using religious or spiritual beliefs as a stabilizing force for interpreting traumatic events (23, 24). For example, a review published by UNHCR emphasized the diversity of faith-based coping methods utilized by Syrian refugees from various faiths suffering from mental health problems (20). This includes reading Quranic or verses from scripture, making prayers or supplication, seeking treatment from a religious cleric or traditional healer to keep away *jinn* or evil, or visiting holy sites or completing *hajj* or Islamic pilgrimage. Similar coping methods have been demonstrated by studies regarding Syrian refugee adults resettled in the United States (25) and Somali refugee women in Australia, who reported that daily prayers required by their Islamic faith to be a source of comfort and solace during bouts of depression and loneliness in their new home (26).

Despite the significant implications of these findings for mental health policy and practice, faith-based coping strategies among refugee populations seeking specialized mental health services remain largely unexplored, particularly for those living in Germany and in Europe more broadly. The objectives of this qualitative study were to explore the manifestation of faith-based coping strategies among Arabic-speaking refugee adults seeking mental healthcare services in Berlin, Germany and explore how favorable faith-based coping strategies can be

optimized from a mental health service-delivery and broader integration perspective.

MATERIALS AND METHODS

Study Sample

This research was a sub-study of the Mental Health in Refugees and Asylum-Seekers (MEHIRA) project, led by the Charité Universitaetsmedizin Berlin (19, 27). The MEHIRA project is a multi-center randomized controlled trial aimed to investigate the effects of a stepped and collaborative care model (SCCM) for refugee and asylum-seekers suffering from mental health issues in Germany. The study aimed to explore how mental health care can be delivered in a culturally-sensitive manner. This was done by exploring alternatives to the social, cultural, and linguistic barriers posed by the German health system by providing healthcare in the same language as the client, or by a healthcare provider from the same cultural background. Study participants were recruited from the larger MEHIRA study sample, which included adults who were (i) between the age of 18 and 65 (ii) demonstrated no symptoms of neurodegenerative disorder, psychotic disorder, or suicidal ideation (iii) had refugee or asylum-seeker status in Germany (iv) spoke either Arabic or Farsi.

From among the MEHIRA participants, this study sample was limited to Arabic-speaking refugee and asylum-seeker adults seeking care at the Central Clearing Clinic sponsored by the Charité Universitaetsmedizin Berlin. After completing the initial MEHIRA baseline data collection process, including demographics and a number of questionnaires to assess overall psychological well-being (determined via a score of $\geq$12 on items 1–14 or $\geq$5 item 15 in the Refugee Health Screener-15, and "several days" or higher in a minimum of three responses in the Patient Health Questionnaire-9), participants were invited to take part in an anonymous interview designed to further solicit their perspectives regarding the importance of their faith to promote well-being and prevent mental illness.

Participants were purposively sampled from among the MEHIRA study population to include a variety of age and gender groups with demonstrated interest in participating in the qualitative study following their baseline assessment. For more information, please refer to the complete MEHIRA study protocol available in (19).

Data Collection

A semi-structured interview guide (**Appendix A**) with 19 questions was designed using a grounded theory approach to contextualize questions of mental health and faith-based coping within a comprehensive backdrop of the participant's lived experience (28). This included questions regarding the nature of the war and conflict they fled back home, the experience of their displacement journey, and current challenges faced or experienced following their arrival to Germany in order to illustrate the chronology of mental health symptoms or illness. **Supplementary Information** regarding aspects of their personal lives, including their family, upbringing, traditions, and cultural practices were also included to elicit a narratives (28). To explore links between mental health, concepts of the self, and faith, questions regarding general coping methods and religious background were adapted from the HOPE Approach to Spiritual Assessment. This included questions about general sources of hope, meaning, comfort, and peace, as well as standard questions regarding the importance of organized religion in the lives of participants and extent of practices that are helpful to the participant (29).

Informed consent was provided by participants before initiating data collection. All interviews took place in a private setting within a mental health clinic in central Berlin between December 2018 and April 2019. Interviews were audio-recorded following the consent of the participants. All interviews were conducted in Arabic by a native Arabic speaker with a psychology background and public health research training (DR). Interviews were simultaneously transcribed and translated to English. *In vivo* codes, including Arabic terms and phrases used to describe culturally specific symptoms or methods of coping were transliterated to English for later inclusion in the results. On average, interviews lasted 36.5 min.

Qualitative Analysis

The interviews were anonymized, transcribed, and entered to MAXQDA (20.0.8) in English to code and categorize the data into relevant themes using a grounded theory approach (28). Based on this framework, line-by-line coding by DR (also the primary interviewer) was completed in order to comprehensively reexamine the data collected. Codes were then initially organized by topics listed in the interview guide, including challenges, general coping methods, examples of faith-based coping, to facilitate the coding of complex perspectives shared by participants regarding mental health, concepts of the self (including experience of displacement), and faith. Code categories were later expanded based on emerging ideas that were compiled at the end of each interview in order to explore unexpected themes or corroborate certain ideas or responses shared by other participants in subsequent interviews. Interpretation of emerging ideas was triangulated among three of the authors to ensure accuracy. This included codes regarding coping strategies before, during, and after displacement, seeking mental health support from a spiritual leader, impact of integration on faith practices, and advice to mental health professionals.

For the analysis and compilation of themes, a top-down approach was used for targeted interview questions (such as "For some people, their religious or spiritual beliefs act as a source of comfort and strength in dealing with life's ups and downs; is this true for you? If yes, how? If no, was it ever?") to develop concise, yet comprehensive categories. This led to the development of themes regarding faith-based coping methods utilized before, during, and after displacement, as well as advice for German mental health providers. For more general interview questions (such as "What are your sources of hope, strength, comfort, and peace?"), a bottom-up analysis approach was used to develop important themes based on cultural and religious coping methods demonstrated across the study population, including changes in faith practices upon arrival and integration.

TABLE 1 | Participant sociodemographics and clinical data.

No.	Country of Origin	Religion	Months in Germany	RHS Score*	PHQ-9 Score*	Reasons for Migration
1	Syria	Islam	15	21	13	War, individual, social
2	Syria	Islam	38	29	17	War, economic
3	Syria	Islam	29	32	17	War, individual
4	Syria	Islam	39	17	10	War, political, religious persecution
5	Syria	Islam	44	36	10	War, political, religious persecution
6	Iraq	Islam	8	37	15	Economic, social, political, and religious persecution
7	Iraq	Islam	21	38	17	War (Syria), political and religious persecution (Iraq)
8	Iraq	Islam	35	41	21	Political and religious persecution
9	Iraq	Islam	37	32	18	War, political situation, religious persecution. social
10	Syria	Islam	31	44	25	War, social
11	Iraq	Islam	47	43	23	War, political and religious persecution
12	Syria	Islam	39	20	19	War
13	Syria	Islam	24	35	16	War, economic, individual, political and religious persecution, social
14	Syria	Islam	31	17	7	Individual, social
15	Syria	Islam	21	24	10	War, individual
16	Syria	Islam	28	30	25	War, economic, social
17	Syria	Islam	44	33	21	War, individual, political and religious persecution

**Scores of ≥12 on items 1–14 or ≥5 item 15 in the Refugee Health Screener-15 and "several days" or higher in a minimum of three responses the Patient Health Questionnaire-9 indicated psychological distress.*

TABLE 2 | Summary of participant age and gender breakdown.

Gender	
Males	11
Females	6
Age	
20–29	8
30–39	4
40–49	5

Ethical Approval

The study was conducted as a part of the larger MEHIRA project, which was approved by the Ethical Committee of the Charité Universitaetsmedizin Berlin. The study was registered in ClinicalTrials.gov (registration number: NCT03109028; registration date 11.04.2017). As exhibiting symptoms of depression or psychological distress was an inclusion criterion for this study, particular approaches were taken to ensure the comfort of the participant before, during, and after the interview. This included taking note of the general affect of the participant throughout the interview, including tone of voice, bodily gestures, and facial expressions, in order to take any potential steps to stop or halt the interview if the participant became upset or uncomfortable. Before the interview, it was noted whether or not the participant had an appointment in the clinic before or after the interview in order to prevent any delays or interview fatigue. Referrals to mental health professionals working in the clinic were available for support and supervision in the event that it was needed.

RESULTS

Participants

A total of 17 participants (11 male; six female) were interviewed for the study (see **Table 1**). Participants were between the ages of 22 and 47 years old, with an average age of 34.7 (see **Table 2**). The majority of participants were originally from Syria ($N = 12$), followed by Iraq ($N = 5$). A total of 6 participants were married, five were divorced or separated, five were single, and one was widowed. Nine participants had at least one child. On average, participants had been in Germany for 2 years and 3 months (ranging between 8 and 47 months) and had completed 10.4 years of schooling. Reasons for migration varied among participants; however, most had fled ongoing war and conflict in their countries of origin, as well as political or religious persecution. All participants had temporary residency status except for one participant who was residing in Germany without a legal residence permit. A total of eight participants lived in private apartments, followed by seven participants who lived in refugee accommodation centers, and two participants who lived in shared flats. All participants identified as Muslims, and two identified as non-religious (or non-practicing) Muslims.

Themes

The main findings from the interviews were organized into four themes including, (I) faith-based coping during flight (II) changes in faith practices upon arrival (III) faith-based coping during integration, and (IV) advice for mental health providers. The first two themes capture an overview of general coping

strategies in line with ongoing challenges and shifts in faith and faith practices experienced by participants upon arrival to Germany, and for the latter themes they provided examples of faith-based coping methods and how they can be incorporated into mental health care provided by non-Arab or non-Muslim mental health providers.

Faith-Based Coping During Flight

Participants provided examples of faith-based coping methods they utilized throughout their migration journey and after witnessing war and conflict in countries of origin. Among participants from Syria, these experiences were particularly acute since many had fled shortly following the onset of violence, experienced abrupt interruptions to schooling and livelihoods, witnessed the arrival of armed groups and were exposed to death or detention. Participants from Iraq described more protracted migration experiences, including living through multiple generations of war throughout childhood, experiencing long-term separation from family and children, and cited multiple experiences of displacement from Iraq.

Examples of faith-based coping methods were reported among participants who endured difficult or challenging displacement journeys, such as those who crossed multiple countries and borders to arrive to Germany, placing their families at risk in the process. One participant from Iraq shared:

> *Once we took off by boat on the ocean, I asked God, "If I have a place in this world, let me and my entire family" to arrive. If you have written for someone in my family to drown, let me drown in their place. I hope I arrive to Germany in peace and safety. And if that anything was going to happen, it would be me instead of someone in my family.*

Two participants from Iraq also mentioned the importance of thanking God during or after the end of the journeys they endured by sea and foot to arrive to Germany:

> *I said to myself, once I arrive, I will pray about 20 rakat* (supplications) *for God once we arrive to Germany. When I arrived to Germany, after about 10 days, I had a dream where God asked me, "Why did you not pray?" I felt someone was holding me accountable, why didn't you pray as promised? This was the first time something like this ever happened to me.*

Changes in Faith Practices Upon Arrival

Displacement to Germany resulted in processes of reflection among participants, who found that they had the opportunity, for the first time, to reflect on their personal beliefs and become more "open" to new perspectives and experiences that were not available in their country of origin. Upon displacement, participants reported that the cultural and religious disparity between Arab and German cultures made young refugee adults seek behaviors taboo to Islamic principles, such as drinking, smoking, and partying. On the other hand, participants reported that their displacement led to a greater understanding of individuals and religions outside of their own. This included exposures to churches, synagogues, as well as individuals who do not believe in God(s) or follow a specific faith. One participant from Syria stated:

> *Of course, I became a lot more aware. I learned how to interact with people from different faiths and walks of life. I think this experience has made me a lot more aware. I do not think I will regret coming to Germany. On the contrary, I say, alhamdulilah* (thank God) *I arrived here and tried this. If I had stayed in Syria, I would have never experienced what it is like to be expatriated, to integrate in a new society, or with new religions, how to maintain yourself, culture and traditions in a new place, so I consider this [not only] an opportunity, but a nice chance.*

Another participant from Iraq stated:

> *Things have changed here in Germany. I could go out whenever I want, I can do whatever I want. If I want to pray, I pray. If I want to drink, I drink. Whatever I want, I can do it. No one will tell me that this is against religion, or bad for the environment. I want my children to live their life without being judged.*

Most participants felt that the integration process was not contingent on or impeded by their faith. One participant from Syria stated that it was the responsibility of the refugee or migrant to acclimate, and that Germans were not responsible for acclimating to Arab or Muslim culture. While all participants interviewed identified as Muslims, two participants described themselves as "non-practicing" Muslims, noting changes that had occurred since they had arrived to Germany. One of these "non-practicing" participants, originally from Syria, used the example of seeing people from all walks of life on the metro to demonstrate his shift in thinking regarding religion:

> *After a short time here [in Germany], you start thinking in a different way. You get on the metro, you start to see a lot of people – you ask why do these people think in a different way? Lots of incentive to ask yourself the question – "why am I this way? Why did I choose this religion [to follow]?" You then arrive to different convictions, you establish new convictions, depending on the circumstances.*

Other participants noted the consistency of their faith identity throughout their displacement and integration process, emphasizing that they felt no pressure or would not succumb to the pressure of changing their faith for the sake of integration. The following participant from Syria stated:

> *If a German is to accept me, they will accept me as I am. I am not going to change so someone else can accept me. For those who are changing religiously, ethically, or culturally for others to accept them...I think that when Germans see someone like this [i.e. drinking alcohol in violation of their religious beliefs], then they will not respect them.*

Another participant from Syria shared how their faith has grown stronger since their arrival to Germany, particularly what they refer to as "the permanence" of God as a source of continuity, protection, and company in her new surroundings:

In Syria, honestly, I was a bit more distracted with the world. I was living my normal life. Here, I am trusting of God, since I felt that my God is permanent, more so than people. In terms of my faith, God is everlasting and always there for me. Before, in Syria, I was always with my family, I had a routine, we were happy. All of a sudden, when you are alone...this is all from God. He permits you to travel safely, you come here, you walk by yourself, and you think of how much hardship there is in the world.

When prompted to answer about changes in frequency of and commitment to faith practices, many participants cited having been more committed to practices in their country of origin than in Germany. For example, some participants reported praying less throughout the week, especially for those who worked full-time and could no longer attend Friday prayer or had limited access to an Arabic-speaking mosque or mosque of their Islamic sect. One participant from Syria stated:

I feel this sort of hajiz (barrier) *ever since I arrived to Germany. I miss the sound of the call to prayer* (athan). *I feel unable to pray and unmotivated to pray when I am here. Living in a Muslim country, like when I lived in Turkey, made a difference for me. It felt closer to home and reminded me of my faith practices more often. When I arrived to Germany, I developed averse feelings to religion and religious practices, which may be a result of my depression. In my worst moments, I am no longer motivated to seek help from God and feel demotivated from praying or practicing my faith.*

Some participants, mainly male, were also concerned about access to mosques and expressed distrust regarding religious leaders and mosques in Germany:

I am finding some difficulties in maintaining prayer here. In Syria, I used to never miss a prayer, but not because I am less convinced [by my faith]. It is a shortage on my end. Near my house, there is no mosque near my house. The closest one is an hour away. My faith practice is inside my house, mainly.

One of the main reasons I do not go to the mosques in Germany is because there are no imams (religious clerics) *in Germany like there were in Syria. Here, we do not know their backgrounds. They may be really good, but I do not know where they came from or the education they received to become an imam. In Syria, the imam was known by the village or city he lived in. Someone who is good, someone who is a hafiz* (memorizer of the Qur'an) *– you know that the society has nominated this person. Here, you do not know his background, and he could be influenced by foreign ideologies.*

Faith-Based Coping Methods to Address Distress During Integration

The majority of participants expressed that particular aspects of their faith and faith practices served as a positive source of comfort and reassurance throughout their mental distress and integration experience in Germany. Examples included attending religious services, making supplications, meeting other Muslims, and seeking help from a religious leader.

Some participants mentioned the importance of remembering and thinking of God as a means of coping with distress. One participant from Syria noted:

Honestly, my faith in God is what keeps me going. I am convinced that the world is temporary… We know that there is a Hereafter, there is Heaven, there is something more beautiful, endless happiness, no anxiety, no sadness, no depression. This is something very comforting and brings me patience.

Another participant from Iraq stated:

I remember God without going to the mosque. While I am walking, I ask God to forgive me, to guide me, to release me, to keep me safe. A prayer is listened to no matter where you are, as long as it comes with an intention and a heart that is really broken or needs help.

Other participants focused on the sense of calm they feel when reading Qur'an, praying, or supplicating. One participant from Syria shared:

Religion helps those who understand it. Reading or hearing Quran cools (calms) *the nerves. Sometimes I make supplication in order to ask for help, and I cry. You feel a weight on your body, that nothing in this world is worthwhile. When you read Quran or pray, you feel comfort all over your body, God makes you feel this sense of calm.*

Another participant from Iraq emphasized their reliance on prayer:

Prayer makes me feel better because it makes me closer to God. He may forgive me, bless me, help me lead a path that is more different.

More than one participant shared their thoughts on how faith-based methods of coping should be supplemented with medical treatment. The following was shared by a participant from Syria:

I know people who use religion for everything. God said, "For everyone who tastes, there is medicine." God says, "Ask for help [my worshipper], and I will help you," if you want to seek treatment, and I will help you find it through your prayer. I will make the heart of the doctor feel for you, the pharmacist will help you. If I am sitting at home, and wait for God to treat me. God will not send us treatment in an envelope.

Two participants from Syria, noted the lack of nearby mosques, which would have otherwise been a source of support when feeling distressed:

If there was a mosque near my house, I think this would really help me. Sometimes depression and an overall mental health situation can impact one's mental health situation in a way that doesn't allow one to think realistically. The one thing that really helps me become stronger is religion, such as reading Quran or to pray (feel connected to God), makes me feel a sense of psychological well-being, to be honest.

Even if you have trouble in the real world, and you feel pressure, you go inside the mosque and start to cry. Once I leave, I feel like I am back to reality. Your negative thoughts start to escape you, your sadness. I start to feel much happier. I started to feel so depressed, and when I was hospitalized, I asked for a Quran and to visit a mosque. The translator came and he said he would bring me one as a gift.

A few participants stated that they had sought help from a religious cleric. While some participants, particularly females, had positive experiences seeking support from religious clerics, one participant from Iraq noted a different experience:

> *I tried to ask for help about my depressive symptoms, and the sheikh (religious cleric) told me to be make dua (supplication), to pray, to be patient, and to ask for forgiveness. I told him that I do not think I did anything wrong, that this depression that has existed for 4 years, it needs to be solved somehow.*

Advice for German Mental Health Providers

When participants were asked what they would like German (i.e., non-migrant) mental health providers about their cultural or spiritual backgrounds in order to optimize mental health treatment, a range of response was provided. In particular, the importance of the presence of a family and community for well-being were addressed, for example, by one Syrian participant:

> *[It is] important that they [non-Arab health providers] understand Arab culture, such as where happiness comes from a societal perspective. For example, family is one of the most important pillars of happiness in Arab culture.*

Participants expressed their preference for Arabic-speaking mental health professionals (although, not necessarily Muslim) who could understand them directly, both in language, as well as the trauma they experienced before, during, and after their displacement. Put simply, by a participant from Iraq:

> *I would like this person [the German mental health professional] to understand where I come from.*

The lack of a shared language for communication between patient and provider can also inhibit non-Arabic speaking mental health professionals from understanding culturally-specific manifestations of mental health conditions, such as a type of hair loss described by the same Iraqi participant, may be an explanation for particular mental health symptoms:

> *For example, da' al tha'lab [in English: sudden hair loss or Alopecia areata] is a situation where you lose your hair as a result of fear or poor mental health. I had a year where I was dealing with this. The [German] doctor told me that this was a psychological condition. However, I know that it could be from fear (if you were robbed for example, someone robbed you) in addition to poor mental health.*

Another participant from Iraq also shared the need for empathy or a broader understanding of the trauma that was experienced by the client by the German or non-Arabic speaking mental health professional:

> *If I told a German psychiatrist about the trauma I have endured, I would want them to be able to help with these experiences and to see it as a reality, not something that is fictional.*

Participants expressed the specific need for awareness among mental health professionals in Germany on specific aspects of their culture, religion, or traditional methods of coping, such as spiritual forms of mental health support, as described by a Syrian participant:

> *A German psychiatrist would just treat your symptoms and give you a diagnosis. If someone who wants any kind of spiritual support, it might not be allowed. The doctor must really focus on religion. Because a renewal of the soul requires this sort of attention.*

DISCUSSION

This is one of few studies addressing faith-based coping methods among distressed Arabic-speaking refugees and asylum-seekers from Muslim-majority countries in Germany. Using a grounded theory approach, our analysis demonstrated a wide spectrum of definitions and interpretations of faith among Arabic-speaking refugees and asylum-seekers seeking mental health services, most of which had been shaped by challenging and often traumatic experiences before, during, and throughout their displacement and extending into the integration process. This was most explicitly demonstrated in the first three themes: (i) faith-based coping during flight, (ii) changes in faith practices upon arrival, and (iii) faith-based coping methods to address distress during integration.

Most participants in this sample had experienced significant challenges ahead of their arrival to Germany, including exposure to stressful events in Syria and Iraq before departure, multiple displacements and attempts to integrate into other host country contexts, detention and torture, and dangerous journeys by land or boat to arrive to Europe. Following arrival, participants cited social and economic barriers to integrating into German society, including difficulties learning the language, becoming accustomed to new culture, finding housing and employment, and the chronic uncertainty of what the future held for them. This had resulted in significant distress and negative mental health symptoms among those in the study sample, who had all decided to seek mental health treatment at the Charité Universitaetsmedizin-sponsored mental health clinic, where interviews took place.

Upon inquiry, our study found that the participants' dynamic relationship with their faith following their arrival to Germany played a direct role in how faith-based coping methods were or were not utilized when experiencing mental health symptoms. Most of those interviewed had only ever lived in Syria or Iraq, or had been displaced to Muslim-majority countries before their arrival to Germany. Particularly for male participants in this study, Germany provided a novel landscape for the exploration and interpretation of varying faith practices outside of own's own, and the integration process often involved a determination of which practices were helpful, or not so helpful, to their mental health and well-being. These trends are similar to findings from a recent study of Syrian refugees in the Netherlands, which demonstrated that levels of commitment to faith or religious practices influence coping strategies and overall feelings of integration (30). Those demonstrating a stronger commitment to faith were more likely to utilize faith-based coping strategies

when seeking mental health services, including seeking support from religious leaders or local religious institutions.

We found notable differences in perspectives between male and female participants, female participants demonstrated of which demonstrated a greater reliance on faith-based coping mechanisms, including attending regular religious lectures and support groups in mosques, asking religious clerics for support with mental health symptoms, and reading Quran or praying in one's personal time. Male participants, on the other hand, expressed greater dissent than females with the religious infrastructures in Germany, including distrust of imams and particular religious bodies, lack of engagement with clerics for treatment and lower attendance of weekly (Friday) prayers. Nonetheless, and consistent with previous studies published on this topic (20, 26, 31) which highlight the intertwined nature of cultural and religious norms in these populations, faith was an enduring force in the lives of the majority of the Syrian and Iraqi refugee adults interviewed in this study, regardless of level of commitment to faith practices.

The fourth and final theme (iv) identified in this study included constructive advice from participants for German mental health providers, particularly providers who do not have a shared migrant background. These findings, which include a call for greater empathy and understanding of Syrian and Iraqi culture and faith practices, as well as specific ways of interpreting distress, could be particularly useful for German mental health providers engaging refugee and asylum-seeking populations. This includes the significance of family and community in the healing process, a common source of social support mechanism that may be absent for most refugees and asylum-seekers in Europe who are restricted from visiting family or have pending family reunification status. Positive faith-based coping strategies identified by participants to improve mental health outcomes, such help-seeking from religious leaders, reading Qur'an, remembering God, or making supplication can help inform service delivery by sharing these insights with mental health care providers in Germany (32). These perspectives also help identify themes of broader religious and social support in order to facilitate the integration of this population in their current context. The results of this study have implications for a variety of actors and stakeholders invested in facilitating both the short- and the long-term integration of such populations, including the need to develop culturally- and faith-sensitive interventions and to introduce cultural mediators to the clinical setting in order to facilitate the relationship between mental health provider and patient. Furthermore, results regarding positive faith-based coping methods demonstrate opportunities for local engagement from mosques and Islamic organizations with the Syrian, Iraqi, or broader Muslim refugee population, particularly in providing basic psychosocial support, mental health awareness, and expanding referrals to mental health professionals.

The cultural and context-specific interpretations of optimal mental healthcare by refugee communities provide insight on how non-profit organizations, faith-based organizations, and religious institutions can collaborate with mental health professionals to provide faith-based training and culturally-sensitive approaches to working with refugee populations as well as pose alternatives to the linguistic and cultural barriers posed by the German health system. This includes training for German mental health providers regarding the cultural and religious backgrounds of refugee clients they often provide care for, as well as overall sensitivity to the sociopolitical circumstances refugee clients escaped from ((33, 34). Religious clerics and spiritual leaders who are approached by refugee clients seeking faith-based treatment should also be trained to provide referrals to specialized mental health services for refugee populations (35).

An unanticipated finding was that many participants, when answering questions about their own faith identity and integration experiences, cited the experiences of others. This included current and former friends, members of their families, acquaintances, roommates, and a broader description of the refugee community at large (often identified as "the Syrians" or "the Arab community"). These generalizations provided a useful comparison for the participant, in order to either differentiate or state their similarity to this broader refugee community, particularly when describing shifts in their faith identities, their integration process, and their reliance on faith as a coping mechanism.

Furthermore, an important ethnographic consideration was the interchangeability of the concepts of religion, spirituality, cultures, and traditions that were utilized during the interviews. For example, expressing the extent of "religiosity" led to discussions regarding Syrian and Iraqi culture and traditions and how they differed extensively from those in Germany. The term "spirituality" was less understood by participants and is less referred to in the literature describing faith-based coping methods among Arab or Muslim populations (25, 36). Although there is limited information regarding the application of religious and spiritual healing methods for refugee populations who may have endured religious or ethnic persecution, there is significant literature on the application of these concepts in Islam and on Muslim populations broadly (37).

Due to the conceptual nature of the interviews, there were a number of limitations that emerged throughout the study.

The first limitation was that questions regarding faith-based coping often required an additional layer of explanation by the interviewer to each participant in order to clarify the intentions of the questions asked. This may have influenced answers given by participants following examples posed by the interviewer regarding faith-based coping, which included relying on prayer, reciting or reading scripture, or attending the mosque, in order to cope with particular mental health challenges. This was particularly the case given that these concepts, although designed using frameworks regarding faith-based coping in English, were inquired about and discussed in Arabic.

Another limitation of this study was the sensitive nature of the questions asked, particularly of participants who had faced religious persecution in their countries of origin. To address this issue, we aimed to clarify during interviews that these questions were aimed to support the improvement of mental health care and treatment provided to Arabic-speaking patients in Germany

and in other Western contexts. This may have also led to answers that seemed more favorable or acceptable to the interviewer.

Lastly, all participants in this study were receiving treatment for their mental health symptoms and were therefore considered patients of the clinic in which the study was being conducted. This may have resulted in an overall wariness regarding what could be shared during the interviews, particularly criticisms of German or Arab mental health professionals who were currently working in the clinic. Furthermore, our sampling procedure included only Arabic-speaking individuals who demonstrated an interest in the topic of the study regarding faith-based coping and mostly represented individuals from Syria and Iraq. Future studies should attempt to represent the experiences of other refugee and asylum-seeking populations living in Germany and in Europe, more broadly.

CONCLUSION

Overall, the results of this study demonstrate a variety of faith-based strategies for coping with displacement and the integration process among refugees and asylum-seeking populations from Arabic-speaking and Muslim-majority countries. The study also addresses changes in faith that this population may experience during integration and includes recommendations from refugees themselves to make mental healthcare services more culturally-sensitive. These findings also indicate the importance of understanding cultural- and faith-specific interpretations of mental health symptoms and subsequent actions for diagnosis and treatment of mental health conditions experienced by these populations. As European and North American countries remain top destinations for refugees and asylum-seekers, studies exploring culturally-specific mental health needs of refugees from Muslim-majority countries across Germany are critical to improving the quality of mental health services and in turn, facilitating social integration for these populations. The outcomes of this research could be beneficial for mental health professionals, non-governmental organizations, faith-based organizations, humanitarian aid agencies, and hospitals providing mental health and psychosocial support services to Arabic-speaking refugees in Western contexts. Future studies should take note of the perspectives of mental healthcare providers and other healthcare workers and mediators working with refugees throughout mental health clinics in Germany and in other Western contexts where a large majority of refugees from Arabic-speaking or Muslim-majority countries have been resettled.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Ethical Committee of the Charité Universitaetsmedizin Berlin. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

DR conceived of the study, collected the data, and coded the transcripts with inputs from MB throughout. DR performed the thematic analysis with feedback and input from MB and LW. DR wrote the manuscript with multiple revisions from MB, CK, DC, and LW. All authors contributed to the article and approved the submitted version.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2021.595979/full#supplementary-material

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• 7.5 PUBLICATION FIVE •

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Rank	Full Journal Title	Total Cites	Journal Impact Factor	Eigenfactor Score
1.	World Psychiatry	6,486	40.595	0.017130
2.	JAMA Psychiatry	13,433	17.471	0.056110
3.	Lancet Psychiatry	6,405	16.209	0.028290
4.	PSYCHOTHERAPY AND PSYCHOSOMATICS	4,275	14.864	0.006480
5.	AMERICAN JOURNAL OF PSYCHIATRY	41,967	14.119	0.034380
6.	MOLECULAR PSYCHIATRY	22,227	12.384	0.054730
7.	BIOLOGICAL PSYCHIATRY	44,016	12.095	0.053910
8.	JOURNAL OF NEUROLOGY NEUROSURGERY AND PSYCHIATRY	30,621	8.234	0.028510
9.	SCHIZOPHRENIA BULLETIN	17,703	7.958	0.027070
10.	BRITISH JOURNAL OF PSYCHIATRY	24,380	7.850	0.020520
11.	JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY	19,837	7.035	0.021080
12.	JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY	19,837	7.035	0.021080
13.	JOURNAL OF THE AMERICAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY	19,831	6.936	0.017840
14.	NEUROPSYCHOPHARMACOLOGY	26,281	6.751	0.040680

15.	BRAIN BEHAVIOR AND IMMUNITY	16,285	6.633	0.028560
16.	JOURNAL OF ABNORMAL PSYCHOLOGY	16,003	6.484	0.014170
17.	ADDICTION	19,861	6.343	0.030820
18.	Epidemiology and Psychiatric Sciences	1,584	5.876	0.004770
19.	PSYCHOLOGICAL MEDICINE	26,702	5.813	0.039350
20.	Clinical Psychological Science	2,599	5.415	0.011100
21.	BIPOLAR DISORDERS	4,838	5.410	0.006610
22.	ACTA PSYCHIATRICA SCANDINAVICA	13,539	5.362	0.011750
23.	Translational Psychiatry	9,160	5.280	0.029500
24.	Journal of Behavioral Addictions	2,184	5.143	0.005970
25.	CNS DRUGS	4,768	4.786	0.007670
26.	PSYCHONEUROENDOCRINOLOGY	19,287	4.732	0.027100
27.	DEPRESSION AND ANXIETY	9,355	4.702	0.013860
28.	AUSTRALIAN AND NEW ZEALAND JOURNAL OF PSYCHIATRY	7,192	4.657	0.008620
29.	Current Psychiatry Reports	4,785	4.539	0.010670
30.	EUROPEAN PSYCHIATRY	6,054	4.464	0.009470
31.	CURRENT OPINION IN PSYCHIATRY	4,182	4.392	0.006260
32.	JOURNAL OF PSYCHIATRY & NEUROSCIENCE	3,297	4.382	0.004290
33.	PROGRESS IN NEURO-PSYCHOPHARMACOLOGY & BIOLOGICAL PSYCHIATRY	11,179	4.361	0.013670
	PHARMACOPSYCHIATRY	1,787	4.340	0.001580

34.				
35.	INTERNATIONAL JOURNAL OF NEUROPSYCHOPHARMACOLOGY	6,749	4.333	0.011150
36.	npj Schizophrenia	502	4.304	0.002060
37.	JOURNAL OF CLINICAL PSYCHIATRY	18,652	4.204	0.018530
38.	WORLD JOURNAL OF BIOLOGICAL PSYCHIATRY	2,567	4.164	0.004200
39.	DRUG AND ALCOHOL DEPENDENCE	20,269	3.951	0.040630
40.	EUROPEAN CHILD & ADOLESCENT PSYCHIATRY	5,422	3.941	0.009450
41.	JOURNAL OF AFFECTIVE DISORDERS	32,869	3.892	0.055920
42.	SUICIDE AND LIFE-THREATENING BEHAVIOR	4,512	3.867	0.005980
43.	EUROPEAN NEUROPSYCHOPHARMACOLOGY	7,597	3.853	0.013120
44.	SCHIZOPHRENIA RESEARCH	22,003	3.759	0.030040
45.	JOURNAL OF PSYCHIATRIC RESEARCH	16,085	3.745	0.020560
46.	PSYCHOSOMATIC MEDICINE	12,560	3.702	0.009890
47.	PSYCHOSOMATIC MEDICINE	12,560	3.702	0.009890
48.	INTERNATIONAL JOURNAL OF EATING DISORDERS	9,613	3.668	0.010750
49.	Eating and Weight Disorders-Studies on Anorexia Bulimia and Obesity	1,977	3.634	0.002830
50.	Mindfulness	4,006	3.581	0.008500
51.	World Journal of Psychiatry	701	3.545	0.002190
52.	JMIR Mental Health	1,103	3.535	0.003440
53.	Internet Interventions-The Application of Information	996	3.513	0.002720

	Technology in Mental and Behavioural Health			
54.	European Journal of Psychotraumatology	1,987	3.478	0.004940
55.	AMERICAN JOURNAL OF GERIATRIC PSYCHIATRY	7,144	3.393	0.009920
56.	AMERICAN JOURNAL OF MEDICAL GENETICS PART B-NEUROPSYCHIATRIC GENETICS	4,033	3.387	0.006040
57.	CNS SPECTRUMS	2,479	3.356	0.003480
58.	PSYCHIATRY AND CLINICAL NEUROSCIENCES	3,696	3.351	0.004260
59.	SOCIAL PSYCHIATRY AND PSYCHIATRIC EPIDEMIOLOGY	8,775	3.335	0.012760
60.	CANADIAN JOURNAL OF PSYCHIATRY-REVUE CANADIENNE DE PSYCHIATRIE	6,097	3.313	0.007620
61.	EUROPEAN ARCHIVES OF PSYCHIATRY AND CLINICAL NEUROSCIENCE	4,136	3.288	0.004760
62.	BEHAVIOR THERAPY	5,758	3.243	0.006320
63.	PSYCHOPHARMACOLOGY	22,417	3.130	0.019820
64.	JOURNAL OF PSYCHOPHARMACOLOGY	6,262	3.121	0.009340
65.	JOURNAL OF ANXIETY DISORDERS	7,130	3.079	0.009390
66.	HARVARD REVIEW OF PSYCHIATRY	1,889	3.072	0.003020
67.	ACTA NEUROPSYCHIATRICA	930	3.000	0.001790
68.	Therapeutic Advances in Psychopharmacology	621	3.000	0.001230
69.	International Journal of Bipolar Disorders	457	2.966	0.001480
70.	INTERNATIONAL PSYCHOGERIATRICS	7,341	2.940	0.009920
71.	GENERAL HOSPITAL PSYCHIATRY	5,299	2.860	0.006750

72.	JOURNAL OF PSYCHOSOMATIC RESEARCH	13,356	2.860	0.010250
73.	Frontiers in Psychiatry	6,685	2.849	0.017420
74.	Journal of Eating Disorders	795	2.828	0.002190
75.	Journal of Attention Disorders	3,620	2.826	0.005840
76.	BMC Psychiatry	11,448	2.704	0.025790
77.	JOURNAL OF CLINICAL PSYCHOPHARMACOLOGY	4,841	2.700	0.004710
78.	INTERNATIONAL JOURNAL OF GERIATRIC PSYCHIATRY	9,290	2.675	0.010310
79.	PSYCHOLOGY AND PSYCHOTHERAPY-THEORY RESEARCH AND PRACTICE	1,290	2.645	0.001660
80.	PSYCHOLOGY AND PSYCHOTHERAPY-THEORY RESEARCH AND PRACTICE	1,290	2.645	0.001660
81.	INTERNATIONAL REVIEW OF PSYCHIATRY	2,999	2.630	0.004460
82.	Revista de Psiquiatria y Salud Mental	419	2.630	0.000630
83.	Psychological Trauma-Theory Research Practice and Policy	2,371	2.595	0.005650
84.	JOURNAL OF THE INTERNATIONAL NEUROPSYCHOLOGICAL SOCIETY	6,899	2.576	0.006490
85.	COMPREHENSIVE PSYCHIATRY	6,735	2.567	0.010040
86.	PSYCHIATRIC SERVICES	10,568	2.539	0.015710
87.	Asian Journal of Psychiatry	1,905	2.529	0.003370
88.	EPILEPSY & BEHAVIOR	11,202	2.508	0.016950
89.	Archives of Womens Mental Health	3,208	2.500	0.005430
90.	AGING & MENTAL HEALTH	6,080	2.478	0.008140
91.	JOURNAL OF ECT	1,644	2.454	0.002100

92.	JOURNAL OF PERSONALITY DISORDERS	3,271	2.440	0.003790
93.	Behavioral Sleep Medicine	1,405	2.390	0.002240
94.	International Journal of Mental Health Nursing	2,130	2.383	0.002940
95.	Crisis-The Journal of Crisis Intervention and Suicide Prevention	1,705	2.356	0.002170
96.	STRESS AND HEALTH	2,055	2.350	0.003130
97.	INTERNATIONAL JOURNAL OF METHODS IN PSYCHIATRIC RESEARCH	3,245	2.341	0.003010
98.	DEMENTIA AND GERIATRIC COGNITIVE DISORDERS	4,582	2.310	0.003390
99.	BJPsych Open	618	2.286	0.002430
100.	ARCHIVES OF SUICIDE RESEARCH	1,525	2.274	0.002510
101.	EUROPEAN ADDICTION RESEARCH	1,146	2.269	0.001830
102.	Early Intervention in Psychiatry	2,163	2.257	0.004270
103.	ANXIETY STRESS AND COPING	2,191	2.250	0.002570
104.	EXPERIMENTAL AND CLINICAL PSYCHOPHARMACOLOGY	2,673	2.217	0.003000
105.	JOURNAL OF CHILD AND ADOLESCENT PSYCHOPHARMACOLOGY	2,693	2.195	0.004480
106.	International Journal of Mental Health Systems	1,185	2.193	0.002560

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RESEARCH

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Development of a culturally sensitive Arabic version of the Mini International Neuropsychiatric Interview (M.I.N.I.-AR) and validation of the depression module

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Abstract

Background: Arabic represents one of the most frequently spoken languages worldwide, especially among refugee populations. There is a pressing need for specialized diagnostic tools corresponding to the DSM-5 criteria in Modern Standard Arabic, which can be administered on Arabic speakers in the West and Arab region alike.

Objectives: To develop and validate the culturally-adapted version of the most recent M.I.N.I. 7.0.2 into Modern Standard Arabic—a form of Arabic commonly used across all Arab countries.

Methods: 102 participants were recruited between April 2019 to March 2020 at the Charité - Universitätsmedizin in Berlin. Symptoms were assessed with Arabic versions of rater-based and self-rated measures, including Mini International Neuropsychiatric Interview (M.I.N.I.), Patient Health Questionnaire (PHQ-9), and Harvard Trauma Questionnaire (HTQ). Arabic-speaking psychiatrists saw participants for diagnostic assessment.

Results: Cohen's kappa (κ) values were moderate for major depression, and slight for post-traumatic stress disorder, as well as generalized anxiety disorder. Moreover, kappa values indicated moderate agreement between M.I.N.I.-AR and PHQ-9 for depression, as well as HTQ for post-traumatic stress disorder, respectively.

Conclusion: The translated and culturally adapted version of the M.I.N.I. addresses an existing need for a reliable, efficient, and effective comprehensive diagnostic tool using the most recent DSM-5 criteria in Modern Standard Arabic (MSA). Based on the obtained results, only a validation of the depression module (Module A) of the M.I.N.I-AR was possible. Study outcomes also show evidence for the validation of Module H covering Post-Traumatic Stress Disorder. Potential valuable contributions can be extended to this translation and validation.

Keywords: Validation, MINI, Psychiatric diagnosis, Arabic, Cultural adaptation, Assessment, Arabic-speakers, Refugee

Introduction

There are as many as 274 million native Arabic speakers worldwide, making Arabic the 6th most spoken language [1]. Furthermore, 25 countries consider Arabic their official or co-official national language. Nowadays, Arabic is not only spoken in indigenous settings, but due to migration and refugee resettlements, Arabic-speakers now live dispersed globally [2, 3]. According to the German

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Federal Office for Migration and Refugees [4], Arabic is the most frequently spoken native language within Germany's refugee population. In 2018, it was also reported that Arabic-speaking refugees had shown an increase in the prevalence of mental disorders [3] and are thus in need of accurate and efficient, culturally sensitive diagnostic assessments and treatment plans [2]. Furthermore, in Arabic-speaking countries, the burdens of mental health have been estimated to be much higher than in Western counterparts [5, 6]. Hence, Arabic-speakers face several disadvantages not only in their home countries but also in host countries and humanitarian aid settings [2, 7, 8]. Some of the challenges that they experience include lack of available effective and efficient culturally sensitive mental health services, cultural misunderstandings, stigma, and language barriers [2, 7, 8]. The aforementioned barriers have led to poor diagnoses and treatment choices.

Despite the high demand for specialized services for Arabic-speakers, a considerably large treatment gap exists [5, 9]. Furthermore, large-scale epidemiological studies and national data are scarce in the Arab region [10], making it challenging to estimate psychiatric prevalence rates and needs. In a study summarizing mental health services across the Arab region, it was found that there were less than 1 to 5 psychiatrists for every 100,000 inhabitants in 22 Arab countries [9]. Moreover, a comprehensive assessment using multiple search engines, found that in about 30 years (from 1966 to 1996), only a total of 1058 research papers were produced addressing the topic of mental health in the Arab world [10]. However, in the past decade, research contributions in the Arab world have reportedly increased by almost 160%, compared with only 57% for other regions. Although this number represents exponential growth (particularly in Egypt, Saudi Arabia and Lebanon), in total the number of research outputs is still comparably lower than the rest of the world [11]. The dearth of literature may explain the scarcity in available professional resources, assessment tools and specialized expertise in the region [5, 10], leading some Arab psychiatrists/psychologists to seek training in western contexts, thereby ignoring essential cultural pillars [8, 10]. As a result, over the years many unvalidated assessments and treatment methods have been adopted and used with Arab populations yielding to 'culturally incongruent' applications [2, 10]. However, in the last decade, significant progress has been made to address these issues in Arab and Western contexts resulting in increased research and hybrid mental health interventions taking elements from multiples cultures into consideration [7, 8, 10].

Clinical structured interviews were developed for diagnostic precision, speed and accuracy and carry several advantages. Because the questions are precise and elicit only a limited number of responses, these assessments can largely be administered by non-specialized interviewers, leading to high inter-rater reliability. Special algorithms are built to distinguish between clinically significant symptoms from regular stressors—a feature that can be used to ensure homogenous groups in clinical trials. Among the most commonly used clinical structured interviews internationally, are the Mini International Neuropsychiatric Interview (MINI) [12], Structured Clinical Interview (SCID), Present State Examination (PSE), Diagnostic Interview Schedule (DIS) and the Composite International Diagnostic Interview (CIDI) [13, 14]. From these interviews, only the DIS [15], the PSE-10 [16] and the CIDI [17], exist in Modern Standard Arabic, in addition to a Moroccan dialect validated version of the M.I.N.I. [18].

The M.I.N.I. was developed by Sheehan et al. [14] to explore some psychiatric disorders according to the DSM and ICD diagnostic criteria. Every few years, the M.I.N.I. is updated and validated versions in other languages also become available [14]. Initially, the M.I.N.I. was designed to meet the need for a short yet valid and reliable psychiatric interview for multicenter clinical trials and epidemiological studies. However, in recent years, the assessment tool is also being used in humanitarian aid and global health settings [7]. The M.I.N.I. is particularly attractive since it offers a fee waiver for researchers and clinicians who will use the assessment to assist refugees or victims of terrorism (for more information see https://harmresearch.org/index.php/mini-international-neuropsychiatric-interview-mini/). This stipulation may be more relevant now than ever, as refugee groups resettle worldwide.

The Moroccan version of the M.I.N.I. developed by Kadri et al. [18] corresponds to the DSM-IV criteria and was compared with expert diagnoses. This version uses the colloquial Moroccan dialect, which is quite different from Modern Standard Arabic and also includes French. The M.I.N.I. has been widely used in several studies in the Arab world, however, the majority of these studies developed their translations and focused on specific modules, such as post-partum depression [19], post-traumatic stress disorder [20], alcohol abuse and dependence [21] and schizophrenia [22, 23]. To the authors' knowledge, there is no fully translated, culturally adapted and validated version of the M.I.N.I. available in Modern Standard Arabic (MSA) corresponding to the latest DSM-5 criteria.

This study aims to develop and validate a culturally-adapted version of the M.I.N.I. 7.0.2 in Modern Standard Arabic. Although various Arabic dialects exist, MSA—a standardized, formal version of the language,

most commonly used in schools, the press and other official contexts—is widely understood by all native Arabic speakers.

Methods

Procedure and participants

The current cross-sectional validation study of the Arabic-version of the Mini International Neuropsychiatric Interview (M.I.N.I.-AR) was conducted to address the existing gap in available validated diagnostic assessment tools in Modern Standard Arabic language. Therefore, this adaption was developed in response to a need for the M.I.N.I.-AR to be used in a large German multi-center trial for Arabic speaking refugees in Germany (MEHIRA: Mental Health in Refugees and Asylum Seekers) [7]. The MEHIRA project depicts a multicenter randomized control trial investigating a stepped care and collaborative model (SCCM) for refugees and asylum seekers across eight university cities in Germany. All participants for the current trial were recruited through the similar recruitment channels of the MEHIRA network, which include regionally heterogeneous allocation paths, such as general practitioners, central clearing clinics, residential care settings, and social agencies in Berlin, Germany. Assessments took place either at the Charité - Universitätmedizin Berlin central clearing clinic, a specialized first-contact outpatient facility for refugees and asylum seekers in Berlin, or the Arabic-speaking outpatient clinic of the Department of Psychiatry and Psychotherapy, Campus Benjamin Franklin—both institutions led by the Charité - Universitätsmedizin in Berlin, Germany.

A sample of 102 participants was recruited between April 2019 to March 2020. Inclusion criteria were defined as age between 18 and 75 years and native Arabic speakers. Initially, two interviewers received in-depth structured training and supervision by two licensed psychologists to ensure consistency in the administration of the interview process. In the next step, participants received an information sheet about the study aims and were asked for their interest in participation. Throughout the whole study process, participants were encouraged to ask any questions that remain unclear. Participants who were interested and willing to participate gave their signed informed consent before any trial-related procedures were conducted. Study participation was voluntary, and no monetary compensation was provided. In the next step, participant symptomatology was assessed by using rater-based and self-rated measures, including the Mini International Neuropsychiatric Interview (M.I.N.I.), the Patient Health Questionnaire (PHQ-9), and the Harvard Trauma Questionnaire (HTQ). All assessments were conducted in Arabic. In parallel, participants were also seen by an Arabic-speaking licensed psychiatrist for a diagnostic assessment and consultation. Three separate psychiatrists were available in rotation at the outpatient clinic. Both interviewers and the psychiatrist were blind to the diagnosis of each other. The whole assessment procedure took between 60 and 90 min. The study was approved by the ethics committee of Charité - Universitätsmedizin Berlin, Germany, and is in line with the Declaration of Helsinki.

The Mini International Neuropsychiatric Interview (M.I.N.I.)

For the current study, the M.I.N.I 7.0.2. validated English version was used and translated into Modern Standard Arabic (MSA, M.I.N.I.-AR; Additional file 1). The M.I.N.I. is a short (needing between 15 and 30 min for completion), structured diagnostic interview compatible with the DSM-5 and ICD-10 criteria. It was specifically designed for implementation in clinical practice and research in psychiatric-, as well as primary health care settings. The M.I.N.I. includes 130 questions with "yes" and "no" answer options examining 16 axis-I DSM-5 disorders as well as one personality disorder. Each of the 16 modules starts with a screening question to exclude the diagnoses and possibly skip the module accordingly if answered negatively or explore symptoms severity when responded positively. Several validation studies [12, 24] have demonstrated excellent interrater and test reliabilities of the M.I.N.I. Furthermore, moderate validity with both the extensive Composite International Diagnostic Interview (CIDI) [12, 14] and the Structured Clinical Interview for DSM-4 (SCID) [12, 14] have been exhibited. Through a previous trial by our research group with a pilot sample size (N = 20), initial validity has been shown for the translated M.I.N.I.-AR [25].

Cultural adaptation and translation

In a pilot trial published by our research group [25], a translation and cultural/linguistic adaptation of the M.I.N.I. 5.0.0 version was carried out. As a follow-up project, the validation of the most recent M.I.N.I. 7.0.2 version, with the same constellation of a multilingual, interdisciplinary team, including five psychologists and three psychiatrists, collaborated on a multilevel adaption process for the translation into the Arabic language (M.I.N.I.-AR). Members of the research group who were involved in the translation process are native Arabic speakers from different Arab nations. They have extensive experience in the mental health sector, as well as board knowledge and familiarity with the cultures of the original (English) and targeted language (Arabic). According to the World Health Organization guidelines [26], for the translation and adaptation process of instruments and aligned with Brislin [27], the steps of the adaption model are illustrated in Fig. 1.

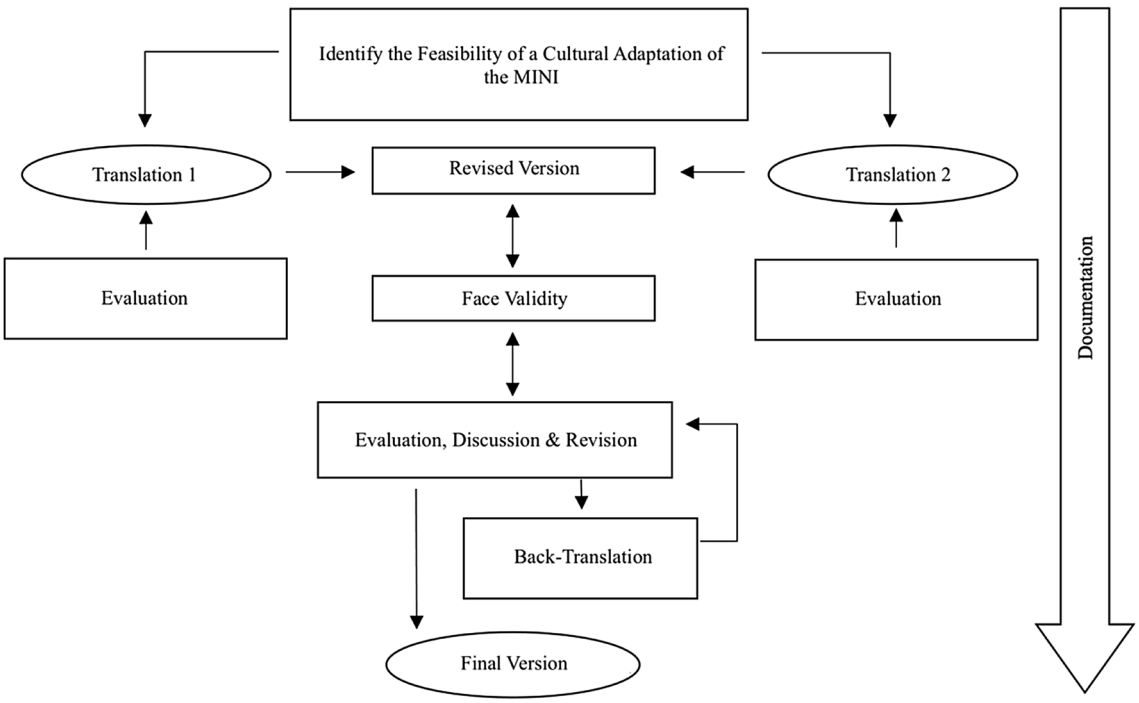

Fig. 1 Illustrates the steps of the adaptation model of the MINI intro Modern Standard Arabic (MSA)

In the first step, two translators (psychologists) evaluated the M.I.N.I. concerning its feasibility and practicability for a culturally-sensitive adaptation and translation. Secondly, both independently translated, assessed and revised all items. Afterward, potentially challenging and unclear items were discussed with a further psychologist (native English- and Arabic speaker) for accuracy and cultural relevance, and the translations were merged into one main revised version. To ensure face validity one trained interviewer according to the criteria by Lecrubier et al. [24], revised the version, and subsequently conducted it together with a licensed psychiatrist on Arabic speaking refugees as recommended by Bannigan and Watson [28].

Consequently, any unclear, problematic and challenging phrasing and linguistic expressions mentioned by the participants and the research staff were adjusted and adapted under special considerations of the Arab culture and cultural idioms within an iterative process of various feedback and revision loops (see example Table 1). Parallelly, a back-translation was performed into English by a blind, independent and bilingual psychologist to the original MINI-7.0 version according to international guidelines [26, 27]. In a final evaluation and revision, five psychologists and three psychiatrists discussed and adjusted outcomes until an agreement for a final version was reached. For a more detailed description of the cultural and linguistic adaptation and translation, see Churbaji et al. [25].

Questionnaires

The Patient Health Questionnaire-9 (PHQ-9) is a short and concise self-rating screening tool to assess the severity of depressive symptoms. It consists of nine items that cover all symptoms of a major depressive episode according to DSM-4 criteria [29]. Responses are given by participants on a four-point Likert scale (0 "not at all" to 3 "almost every day"), indicating their symptom severity for the past 2 weeks. Total scores can range from 0 to 27, with higher values indicating symptom severity. An overall score > 10 indicates the presence of depression. Cut-off values for symptoms severity are as following: minimal (2–9), mild (10–14), moderate (15–19), and severe ($\geq$ 20). For the Arabic translation of the PHQ-9, a discriminant, factorial, and convergent validity and high reliability ($0.86 \leq \alpha \leq 0.88$) have been shown [30].

The Harvard Trauma Questionnaire (HTQ) is a well-established self-reported screening instrument for trauma, torture, and post-traumatic stress disorder (PTSD) symptoms [31]. It covers three parts with 42 items, an open-ended question part, and 16 items, respectively. For the current study, only the third part was included to assess the severity of PTSD symptoms. Participants report their experiences with trauma

Table 1 Examples of the cultural adaptation of the MINI

Question MINI	Translation 1	Final translation	Type of equivalence	Explanation
Have you been consistently depressed or down most of the day, nearly every day, for the past two weeks?	هل شعرت بالحزن أو الاكتئاب بشكل مستمر، أغلب الوقت، بشكل يومي تقريباً، خلال الأسبوعين الماضيين؟	هل كنت تشعر بالحزن أو الاكتئاب بشكل مستمر، معظم اليوم، بشكل يومي تقريباً، طوال الأسبوعين الماضيين؟	Vocabulary equivalence	"down" ↔ "sad". The term "down" can't be used to describe emotions in the Arabic language
Did you have trouble sleeping nearly every night (difficulty falling asleep, waking up in the middle of the night, early morning wakening or sleeping excessively)?	هل واجهتك مشاكل في النوم، بشكل يومي تقريباً؟ (صعوبة في الخلود للنوم، أو الاستيقاظ المتكرر في منتصف الليل، أو الاستيقاظ وقت باكر جداً، أو النوم بشكل مفرط)	هل واجهتك مشاكل في النوم، بشكل يومي تقريباً؟ (صعوبة في الخلود للنوم، أو الاستيقاظ المتكرر في منتصف الليل، أو الاستيقاظ في وقت باكر جداً، أو النوم بشكل مفرط)	Idiomatic equivalence	"falling asleep" ↔ "go to sleep". The term "falling asleep = غفوة" is used in the Arabic language for a nap
In the past 12 months, have you had 3 or more alcoholic drinks within a 3-h period on 3 or more occasions?	خلال الأشهر الـ ١٢ الماضية، هل شربت ثلاثة مشروبات كحولية أو أكثر، خلال ٣ ساعات، وحدث ذلك في ثلاث مناسبات أو أكثر؟	خلال الأشهر الـ ١٢ الماضية، هل شربت ثلاثة اواني كحولية أو أكثر، خلال ٣ ساعات، وحدث ذلك في ثلاث مناسبات أو أكثر؟	Experiential equivalence is not given	"alcoholic drinks" ↔ "alcoholic pots". The quantity was not clearly understood. Even after adjustment, questions were asked about the size and the strength of the alcoholic drinks

symptoms such as "feeling detached or withdrawn from people", "difficulty concentrating", or "trouble sleeping" on a four-point Likert scale (1 "not at all" to 4 "extreme") for each of the 16 items. A total score is calculated by dividing the sum of scores of items 1–16 by the number of items answered, with higher scores indicating an ascending level of PTSD symptom severity. The value can be between 1 and 4 with 2.5 as a cut-off value for a present PTSD, according to DSM-4 [31]. The scale has been validated in numerous cultures and languages, including Arabic, and has shown good psychometric properties [32, 33].

Statistical analysis

All data was collected and stored pseudonymized in a spreadsheet using Package for the Social Science (SPSS) 25, MacOS-X. Statistical analyses were set at an exploratory significance level of $p < 0.5$. Descriptive measures of the sample are summarized as means and standard deviations (SD) for continuous measures and as frequencies and percentages for categorical variables. The criterion validity of the M.I.N.I.-AR was tested by comparing each M.I.N.I. diagnosis with the clinical diagnosis of a blind psychiatrist and its concordance with two screening tools namely the Patient Health Questionnaire 9 (PHQ-9) [29] for depressive symptoms (cut-off score set at 10), and the Harvard Trauma Questionnaire (HTQ) [34] (cut-off score set at 2.5) to detect the presence of post-traumatic stress symptoms. Numerous studies have highlighted that the assessment of criterion validity through the use of clinical diagnoses is a well-established method [13, 18]. Cohen's kappa (κ) was used as a statistically adjusted measure of concordance between two measures [35]. It has been recommended that only for diagnoses with a frequency of 5% or more kappa values are calculated [13]. According to Landis and Koch [36] the following values were used to interpret significant results: < 0 no agreement, 0–0.20 slight, 0.21–0.40 fair, 0.41–0.60 moderate, 0.61–0.80 substantial, 0.81–1.0 perfect. Additionally, statistics for specificity, sensitivity, negative (NPV) and positive predictive values (PPV), and the number of false-positive and false-negative diagnoses were calculated.

Results

Clinical and sociodemographic characteristics

In total, the data of 102 Arabic-speaking refugee outpatients, 45 males, and 57 females, were analyzed. The mean age was 35.29 years (SD = 9.66; range 19–61). The vast majority of the sample named Syria as their country of origin (81%), followed by Iraq (7.8%) and Lebanon (4.5%). All sociodemographic characteristics assessed are illustrated in Table 2.

Table 2 Sociodemographic characteristics of the study sample

Sociodemographic data	*N* = 102
Gender	
Male	45 (44.1%)
Female	57 (55.9%)
Age in years M ± SD 35.29 ± 9.66*	*n* = 97
19–30	35 (34.3%)
31–40	35 (34.3%)
41–50	19 (18.6%)
51–61	8 (7.8%)
Country of origin	
Syria	81 (79.4%)
Iraq	8 (7.8%)
Lebanon	5 (4.9%)
Egypt	4 (3.9%)
Palestine	3 (2.9%)
Morocco	1 (1.0%)

Across all measures used, only major depressive episode or disorder (MDE) (M.I.N.I.: 83.3%, Expert: 61.5%, PHQ-9: 74.5%), posttraumatic stress disorder (PTSD) (M.I.N.I.: 36.3%, Expert: 14.6%, HTQ: 52.0%), and generalized anxiety disorder (M.I.N.I.: 36.6%, Expert: 5.2%) had a occurance of < 5% in the M.I.N.I. screening as well as expert diagnoses. Detailed prevalence estimates for each disorder of the present sample by at least one of the measures assessed is depicted in Table 3.

M.I.N.I.-AR concordance with clinical diagnoses

A total of 96 individuals received a diagnosis from both the M.I.N.I.-AR and a clinical expert. Since only major depressive episode, post-traumatic stress disorder, and generalized anxiety disorders had a prevalence of < 5% in the M.I.N.I. screening and expert diagnoses, all other diagnoses were excluded from the validity assessment. Generally, kappa values were moderate for major depression episodes/disorders (0.54) and slight for post-traumatic stress disorders (0.2), and generalized anxiety disorder (0.12). All results for the three disorders are depicted in Table 4.

M.I.N.I.-AR concordance with the PHQ-9 and HTQ

102 participants were administered the M.I.N.I.-AR and filled self-rating measures PHQ-9 and HTQ. Kappa values indicated moderate agreement between M.I.N.I.-AR and PHQ-9 (0.58) as well as HTQ (0.53), respectively. Detailed results are summarized in Table 5.

Table 3 Prevalence estimates, depending on the measure used

Prevalence estimates	M.I.N.I *N* = 102	Expert *N* = 96	PHQ/HTQ *N* = 102
A. Major depressive episode/disorder	78 (76.5%)*	59 (61.5%)	76 (74.5%)
C. Manic episode/bipolar disorder	2 (2.0%)	1 (1.0%)	
D. Panic disorder	34 (33.3%)	3 (3.1%)	
E. Agoraphobia	12 (11.8%)	0 (0.0%)	
F. Social anxiety	14 (13.7%)	4 (4.2%)	
G. Obsessive–compulsive disorder	16 (15.7%)	2 (2.1%)	
H. Post-traumatic stress disorder	37 (36.3%)	13 (13.5%)	53 (52.0%)
I. Alcohol use disorder	3 (2.9%)	3 (3.1%)	
J. Substance use disorder	3 (2.9%)	3 (3.1%)	
K. Psychotic disorder	0 (0.0%)	1 (1.0%)	
L. Anorexia nervosa	1 (1.0%)	0 (0.0%)	
M. Bulimia nervosa	1 (1.0%)	0 (0.0%)	
MB. Binge-eating disorder	0 (0.0%)	0 (0.0%)	
N. Generalized anxiety disorder	11 (10.8%)	9 (9.4%)	
P. Antisocial PS	7 (6.9%)	0 (0.0%)	
Adjustment disorder		12 (12.5%)	
Somatoform disorders		3 (3.1%)	
Dissociative disorders		3 (3.1%)	
Sexual dysfunctions		1 (1.0%)	
Emotionally unstable PS		1 (1.0%)	
Hyperkinetic disorders		1 (1.0%)	
Nonorganic sleep disorders		1 (1.0%)	
Histrionic PS		1 (1.0%)	
Pathological gambling		1 (1.0%)	

*Excluding 7 past episodes. Multiple diagnoses per individual are possible

M.I.N.I. Mini International Neuropsychiatric Interview, *Expert* clinical expert diagnoses, *PHQ* Patient Health Questionnaire 9, *HTQ* Harvard Trauma Questionnaire, *PS* personality disorder

Discussion

The overall aim of the current study was to validate a translated and culturally adapted version of the most recent M.I.N.I. 7.0.2 into Modern Standard Arabic—a form of Arabic commonly used across all Arab countries in official settings and the press. Although the obtained results did not show evidence for the validation of all the modules within the instrument, it was possible to validate the depression module (Module A). Results showed moderate agreements between Module A of the M.I.N.I.-AR 7.0.2 compared with expert diagnosis and the PHQ. Also noteworthy to reveal were the moderate to slight agreements between M.I.N.I.-AR, HTQ and expert diagnosis concerning post-traumatic stress disorder. The M.I.N.I.-AR 7.0.2 was translated and culturally-adapted to address a diagnostic gap in a large German research trial for the psychological treatment of refugees of Arab descent [7]. Together with our pilot trial [25], this Arabic version of the M.I.N.I. can contribute to the existing literature and be used in mental health care settings serving Arabic-speaking populations as a whole. The adapted instrument is relevant to both Arab and Western contexts alike. Nonetheless, further studies and extensions may use this carefully adapted translation and compare it with a gold standard structured interview that may offer more robust results.

Our study outcomes are in line with a similar validation study using the same method [13] and our initial pilot study [25]. The original authors of the M.I.N.I. also reported a rather poor agreement between expert diagnoses and M.I.N.I. diagnoses in their validation studies [14]. This is not surprising, since the M.I.N.I. was originally designed to be oversensitive. As reported by Sheehan et al. [14], over-diagnosing cases may be less harmful than missing a case. One explanation could be

Table 4 Concordance of the M.I.N.I.-AR with clinical diagnoses

Disorder	Expert diagnosis			Kappa (95% CI)	Sensitivity (%) (95% CI)	Specificity (%) (95% CI)	PPV (%) (95% CI)	NPV (%) (95% CI)
M.I.N.I.		−	+					
	−	TN	FN					
	+	FP	TP					
Major depressive episode/disorder		19	1	0.54 (0.38 to 0.71)	98.31 (90.91 to 99.96)	51.35 (34.40 to 68.08)	74.32 (67.79 to 81.80)	95.00 (72.63 to 99.27)
		18	58					
Post-traumatic stress disorder		55	4	0.20 (0.04 to 0.37)	69.23 (38.57 to 90.91)	66.27 (55.05 to 76.28)	24.32 (16.71 to 33.99)	93.22 (85.71 to 96.93)
		28	9					
Generalized anxiety disorder		79	7	0.12 (−0.13 to 0.39)	22.22 (2.81 to 60.01)	90.86 (82.68 to 95.95)	20.00 (5.87 to 50.07)	91.86 (88.78 to 94.15)
		8	2					

N = 96

M.I.N.I. Mini International Neuropsychiatric Interview, *Expert* clinical expert diagnoses, *CI* confidence interval, *TP* true positive, *FP* false positive, *FN* false negative, *TN* true negative, *PPV* positive predictive value, *NPV* negative predictive value

Table 5 Concordance of the M.I.N.I.-AR with the PHQ-9 and the HTQ

Disorder	PHQ-9/HTQ			Kappa (95% CI)	Sensitivity (%) (95% CI)	Specificity (%) (95% CI)	PPV (%) (95% CI)	NPV (%) (95% CI)
M.I.N.I.		−	+					
	−	TN	FN					
	+	FP	TP					
Major depressive episode/disorder		17	7	0.58 (0.39 to 0.76)	90.79 (81.94 to 96.22)	65.38 (44.33 to 82.79)	88.46 (81.81 to 92.89)	70.83 (53.20 to 83.84)
		9	69					
Post-traumatic stress disorder		45	20	0.53 (0.38 to 0.69)	62.26 (47.89 to 75.21)	91.84 (80.40 to 97.73)	89.19 (75.91 to 95.57)	69.23 (61.19 to 76.25)
		4	33					

N = 102

M.I.N.I. Mini International Neuropsychiatric Interview, *Expert* clinical expert diagnoses, *CI* confidence interval, *TP* true positive, *FP* false positive, *FN* false negative, *TN* true negative, *PPV* positive predictive value, *NPV* negative predictive value

that experts may not be able to review all the information available and thus overlook diagnoses [37]. In contrast, the M.I.N.I. is a particularly comprehensive tool offering fast, efficient and accurate diagnoses. This is a particular asset of the M.I.N.I. since it can be administered by non-specialists leading to resource-saving and cost-effectiveness—both highly relevant benefits, especially in the case of Europe's refugee resettlements and the scarcity of resources and qualified personnel in the Arab world.

Recent studies have highlighted that patients from a Muslim cultural background may experience feelings of discomfort when alone with a therapist from the opposite gender [38], sometimes resulting in an inaccurate representation of symptoms during psychiatric evaluation. In the present study, gender may have played a role in participant responses. Matching gender between psychiatrists and patients was not always possible in the expert interviews, whereas there was more flexibility in the administration of the M.I.N.I.. Since the M.I.N.I. was designed to be administered by non-specialists, it provides an efficient solution to the shortage of available specialized professional care, who sometimes lack the language skills and cultural competence training needed in diagnosing Arabic-speaking populations. Taken together, these reports may explain the slight to moderate Kappa values when comparing the M.I.N.I.-AR and expert diagnoses. Nonetheless, the specific effect of matching gender was not within the scope of this paper, however, it may be interesting to assess this in future validation studies.

The present study has several strengths, especially when considering the limited availability of diagnostic tools and research targeting this specific population. A key strength of the present study is the careful translation and cultural adaptation process of the M.I.N.I. 7.0.2 into Modern Standard Arabic. As mentioned above, Modern Standard Arabic is particularly useful since it is a form of Arabic that is pluricentric—a major practical advantage for Arabic speakers and clinicians worldwide. Language and cultural barriers are one of the factors contributing to the underrepresentation of minorities in clinical settings and research samples [39]. This instrument can thus be used to increase the representation of minorities from the Arab region in clinical practice and research. The translation and adaptation process of the M.I.N.I. was based on experiences from our pilot study [25] and included the same multilingual and interdisciplinary team of psychologists and psychiatrists, each with their unique set of expertise. The team included Arabic-speakers from different Arab countries. The translation and adaptation followed the WHO guidelines [26] and were in line with the adaptation model developed by Brislin [27]. Furthermore, the use of culturally appropriate stories or metaphors to emphasize key concepts helps keep patients engaged and can be used in the diagnosis and different stages of the therapeutic encounter [40]. Sometimes, patients are unable to name an illness to describe their condition—in some languages, words used to name emotions may not correspond to those used in psychiatric settings in the West. For example, using words such as feeling "down" or "high" to describe an emotion does not exist in Arabic. Careful consideration was given to the meaning of the translation to ensure exact understanding. Therefore, by including culturally appropriate words to describe emotions, this instrument can improve the quality of diagnosis and therapeutic encounters when applied with Arabic-speakers and refugee communities in the West [38] and in the Arab region. The M.I.N.I-AR also contains a comprehensive table of drugs that are commonly used in the Arab region including their local street names.

The findings of this study have to be seen in the light of several limitations. To conduct a robust validation, a gold standard structured interview coupled with a

larger sample size and a more clinically diverse sample is needed. This was not possible due a scarcity of resources (clinic capacity), and the vulnerability of our sample (difficultry concentrating and fatigue), therefore valuable future contributions can be extended to this validation. Furthermore, study results show a high count of adjustment disorders in expert diagnoses, but no possibility to diagnose this with the M.I.N.I. Indeed, this is a weakness of the M.I.N.I. In many settings, the diagnosis of adjustment disorder seems less stigmatizing and more easily acceptable [41] and may thus be especially appropriate for individuals from the Arab world, where mental health stigma plays an important role [42]. Nonetheless, similar symptoms are present in depression and PTSD, so they are accounted for. A further limitation is a comparison of HTQ and PHQ (DSM-IV) with the M.I.N.I. trauma section and depression sections (DSM-5). Even though there was a considerable amount of changes from the DSM-IV to 5 in the definition of trauma [43], and rather small changes in the depression section [44], the questions in the M.I.N.I. versions remained mostly the same and should thus be appropriate for the comparison with questionnaires using the DSM-IV as a basis. This may also be a consideration for future research. Moreover, study results also revealed a low prevalence of general disorders. In our sample, the most prevalent diagnoses were depression, PTSD, and anxiety; therefore, reliable kappa values could not be calculated for many disorders. Yet, the proportion of disorders in the current study mirrors the prevalence of the most reported disorders in the refugee community [45], reflecting ecological validity. The M.I.N.I-AR was validated on a sample made up of mostly young Syrians, and Arab patients living in the West may differ from those living in their country of origin [38]. Therefore, for generalizability, future directions for this research may target Arab populations with a more diverse representation of psychiatric disorders.

In conclusion, our translated and culturally-adapted M.I.N.I-AR addresses an existing gap and need for a reliable, efficient, and effective diagnostic tool that can be used in both clinical and research settings involving Arabic speakers worldwide. Based on the obtained results, we were only able to validate module A of the M.I.N.I-AR covering depression and show some evidence in support of the validation of Module H covering Post-Traumatic Stress Disorder. Since no other diagnostic tool corresponding to the DSM-5 criteria is currently available in Modern Standard Arabic, the present translation and cultural adaptation particularly useful for Western host countries and humanitarian aid settings that are unable to find an alternative. Although the instrument was validated on a sample of Syrian refugees, it was developed in Modern Standard Arabic, leading to its potential usefulness in the entire Arab region.

Supplementary Information

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Additional file 1. M.I.N.I.-AR.

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Authors' contributions

CK: study concept and design, management, implementation, translation, data collection, data interpretation and preparation of manuscript. KB: study design, methodology, management, data analysis, data interpretation and preparation of manuscript. NL: data analysis and contribution in preparation of manuscript. DC: translation, data collection and contribution in preparation of manuscript. SA: translation and review of manuscript. EH: study design, supervision, editing and review of manuscript. MB: study design, supervision, management, editing and review of manuscript. All authors read and approved the final manuscript.

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Availability of data and materials

The dataset used and analysed in the current study is available upon request from the corresponding author.

Declarations

Ethics approval and consent to participate

Written consent was collected from all of the study participants. The study was approved by the ethics committee of Charité - Universitätsmedizin Berlin, Germany, and is in line with the Declaration of Helsinki.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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Publisher's Note

(For reasons related to data protection, the CV is not published in the electronic version of my dissertation)

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9. LIST OF PUBLICATIONS

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