Check for updates

International Journal of Mental Health Nursing

WILEY

International Journal of Mental Health Nursing

ORIGINAL ARTICLE OPEN ACCESS

A Study on the Relationship Between Post-Traumatic Stress Disorder, Depression and Anxiety Symptoms and the Quality of Life of Syrian Refugees: Case Study for the Province of Kayseri

Emrah Gokkaya[1] | Mehmet Hanefi Topal[2] | Özgür Demirtas[3]

[1]Bunyan Vocational School, Kayseri University, Kayseri, Turkey | [2]Faculty of Economics and Administrative Sciences, Kırklareli University, Kırklareli, Turkey | [3]Develi Faculty of Social Sciences and Humanities, Kayseri University, Kayseri, Turkey

Correspondence: Emrah Gokkaya (egokkaya@kayseri.edu.tr)

Received: 18 October 2023 | **Revised:** 1 June 2024 | **Accepted:** 24 September 2024

Funding: The authors received no specific funding for this work.

Keywords: anxiety | depression | post-traumatic stress disorder | quality of life | Syrian refugees

ABSTRACT

The aim of this study is to investigate the factors related to post-traumatic stress disorder (PTSD), depression and anxiety mental disorders, as well as the quality of life of Syrian refugees and to examine the relationships between mental health disorders and the quality of life of Syrian refugees. Data were collected via face-to-face surveys with 613 adult Syrian refugees in an urban setting. Brislin's methodology was used for translating scale items, involving initial translation, back-translation and review by another professional translator. The study utilised the PTSD Scale, Beck Anxiety Scale, Depression Scale and Quality of Life Scale (QOLS). Descriptive, correlational and multivariate regression analysis were applied. Findings of correlational analysis indicate that PTSD levels among Syrian refugees are significantly related to gender, income level and employment. Depression levels are significantly associated with trauma history, healthcare service use, marital status and employment. Anxiety levels are significantly related to gender, trauma history, healthcare service use, employment and income. According to the findings of the regression analyses, the relationships between depression, quality of life and PTSD are complex. Meanwhile, anxiety decreases quality of life and increases PTSD. Quality of life moderates the relationship between depression and PTSD, as well as between anxiety and PTSD. The study concludes that the mental disorder levels of Syrian refugees, in terms of PTSD, depression and anxiety, are linked to their socio-demographic characteristics. These results highlight the importance of social, economic and cultural factors, healthcare and social services and the socio-demographic characteristics of the region where refugees have settled after displacement.

1 | Introduction

The social order is disrupted in societies dominated by internal conflicts and wars. In these societies, chaos occurs in social life, many people's lives become endangered and the level of social trust is disrupted. Mass social movements, incidents of social violence and acts of terrorism that turn into this type of civil conflict where trust is disrupted may make it necessary for individuals who have been living in that area for a long time to evacuate, which might affect the lives of the people affected by this situation negatively and may even cause significant loss of property and life.

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.

© 2024 The Author(s). *International Journal of Mental Health Nursing* published by John Wiley & Sons Australia, Ltd.

At the end of 2021, 89.3 million people worldwide were forcibly displaced due to interstate wars, civil conflicts or natural disasters, which exceeded 100 million by 2022 following the conflicts in Ukraine (UNHCR 2022). The experiences of both before and after the migration cause mental disorders in individuals. The mental health and quality of life of these individuals who move away from their places of residence and settle in a new place may transform. According to the 2016 report of the United Nations Refugee Agency (UNHCR), tens of thousands of Syrian citizens have taken refuge in nearby countries such as Türkiye, Armenia, Jordan and Lebanon since the 15th of March 2011, which is considered the start date of the Syrian civil war. Subsequently, this migration led to an influx of refugees to Europe.

According to UNHCR (2021) data, as of the first 6 months of 2021, the number of Syrian refugees who forcibly migrated from their country and settled in other countries was approximately 6.5 million. A total of 129 countries hosted these people displaced by war. This civil mobility that emerged due to the Syrian civil war brought with it many psychosocial traumatic problems (post-traumatic stress disorder [PTSD], anxiety, depression etc.), and Syrians who were forced to leave their homes due to the negative environments they experienced were exposed to intense traumas (Ai, Peterson, and Ubelhor 2002) such as witnessing deaths and hearing bomb explosions.

In previous studies conducted on people who experienced war traumas and became refugees, mental disorders such as PTSD, acute stress disorder, adjustment disorder, dissociative disorder, personality disorder, depression and anxiety disorders were observed (Fazel, Wheeler, and Danesh 2005; Henkelmann et al. 2020; Isik, Sismanlar, and Tekeli-Yesil 2024). In addition, mental disorders such as depression and anxiety are among the most common mental disorders accompanying PTSD in individuals who experience traumatic events (Henkelmann et al. 2020). Studies report that the prevalence of PTSD among refugees is 10 times higher compared to local populations (Fazel, Wheeler, and Danesh 2005). Additionally, in the literature, it is emphasised that PTSD is highly comorbid with other mental health disorders (Brady et al. 2000), and that this mental disorder is accompanied by other mental disorders such as depression and anxiety in refugees with PTSD (Henkelmann et al. 2020; Isik, Sismanlar, and Tekeli-Yesil 2024). The World Health Organisation (WHO) states that mental health disorders in individuals are not only associated with mental disorders, but also with quality of life (WHO 2001). Studies on individuals who are not refugees and studies on refugees both reveal findings that support this claim of the WHO (Hermansson, Timpka, and Thyberg 2002; Elwood et al. 2009; Uygun, 2020).

On the other hand, mental disorders do not occur at the same level in every individual who experiences trauma. There are many etiological factors that cause mental disorders to differ in individuals. Among these, gender, age, trauma history, marital status, number of family members, access to healthcare services, employment and income are the factors which are highlighted the most in the literature that affect the mental health disorders of refugees (Porter and Haslam 2005; Ayazi et al. 2012; Karadag and Ogutlu 2020; Scherer et al. 2020; Isik, Sismanlar, and Tekeli-Yesil 2024).

Studies frequently emphasise that traumatic experiences can create various disadvantages for refugees, such as socioeconomic challenges, poverty, changes in family structure and functioning, decreased social support, difficulties accessing educational opportunities, living in crowded environments, racism and hostile attitudes and difficulties adapting to the culture in the host country (Porter and Haslam 2005; Miller and Rasmussen 2017). Additionally, refugees directly exposed to or witnessing the negative effects of war and conflicts may exhibit mental health symptoms, which can adversely affect their psychological development (Isik, Sismanlar, and Tekeli-Yesil 2024). Therefore, examining the link between mental health and quality of life is crucial to understanding the psychosocial effects of man-made disasters like war, mitigating the psychological impacts and improving the quality of life for disaster victims.

Despite the increasing heterogeneity in refugees' living conditions in recent years, there is a lack of robust epidemiological data on the relationship between refugees' mental health and their living conditions (Isik, Sismanlar, and Tekeli-Yesil 2024). The aim of this study is to investigate the factors related to the mental disorders PTSD, depression and anxiety and the quality of life of Syrian refugees who had to migrate due to war and settled in Türkiye and to examine the relationships between mental health disorders and the quality of life of Syrian refugees. In line with this purpose, the most common mental disorders and the quality of life in the literature on refugees were examined for this study, and the research model was chosen by taking into account the factors that were claimed to be common determinants of mental disorders and quality of life. The findings of our study will aid in comprehending the frequency of mental health issues and challenges associated with the living conditions of urban-setting Syrian refugees in Türkiye. Additionally, it will offer perspectives on potential actions for mental health policy and social integration planning.

1.1 | Research Model and Hypotheses of the Study

Some research findings indicate relationships between depression and quality of life (Mollica et al. 1998; Acartürk et al. 2018), as well as between depression and post-traumatic stress disorder (Brady et al. 2000; Henkelmann et al. 2020). Additionally, there are studies that examine significant relationships between anxiety and quality of life (Al-Smadi et al. 2017) and between anxiety and post-traumatic stress disorder (Brady et al. 2000; Henkelmann et al. 2020). A recent study (Isik, Sismanlar, and Tekeli-Yesil 2024) conducted on Syrian refugees residing in both camps and urban setting in Turkey offered evidence regarding the association between quality of life and mental disorders. However, we found no studies emphasising the moderating effect of quality of life in the relationships between depression and post-traumatic stress disorder and between anxiety and post-traumatic stress disorder. Therefore, we established our models and hypotheses based on this potential contribution to the field.

The conceptual form of the research models is shown in Figure 1. Our models are based on findings from the literature

14470348, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/inm.13452 by Emrah Gökkaya - Kayseri University , Wiley Online Library on [12/10/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

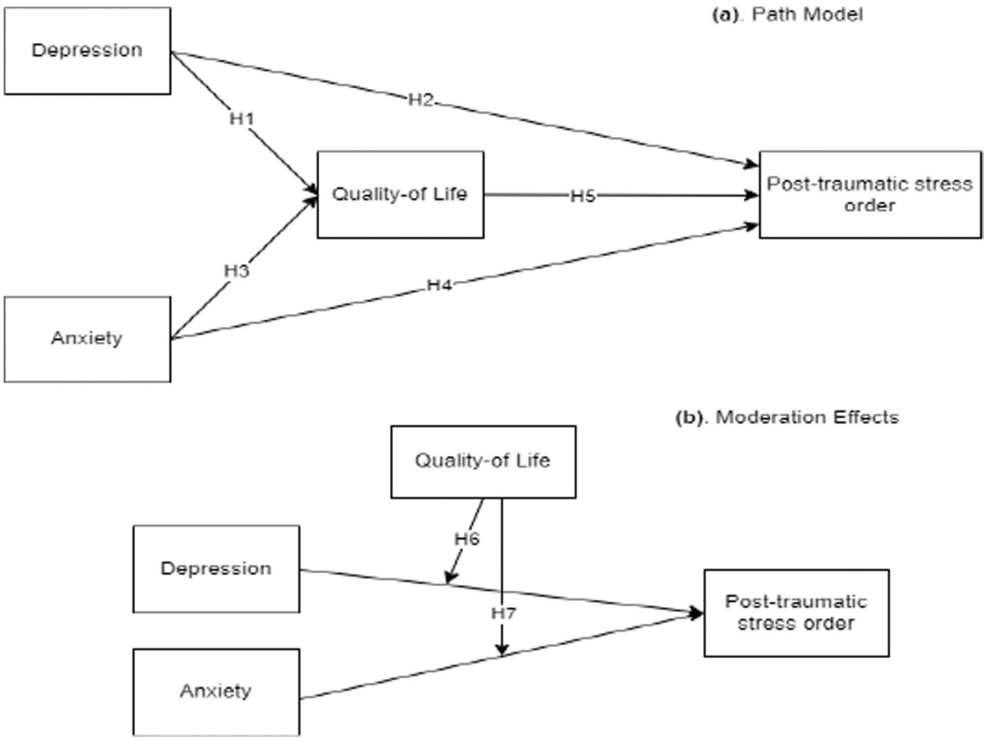


FIGURE 1 | Research models.

and correlations between the variables. In analysis, we used Pearson correlation, structural equation modelling (SEM) path model and moderated regression analysis to examine the significant relations. Additionally, we used independent samples *t*-test (two groups) and one-way analysis of variance (ANOVA) (three or more groups) to examine whether there was a difference between group means.

The research hypotheses (Table 1) are as follows:

2 | Methodology

2.1 | Research Design

This study aims to investigate the relationship between mental disorders and the quality of life of Syrian refugees under temporary protection in Türkiye. It employs a quantitative research design, specifically a correlational survey and predictive research. Data were collected through a questionnaire administered face-to-face by the researcher. The translation of the scale statements in the questionnaire from the original language to Turkish followed Brislin's (1980) methodology. Permissions were obtained to translate and adapt the scales into Turkish. The language validity of these scales was evaluated using Brislin's (1980) translation–retranslation methodology. Initially, two experts (a psychiatrist and a psychology academic) independently translated the scales into Turkish. The authors then compared these translations and reached a consensus on the final version. This final version was subsequently translated back into English by two certified professional translators and reviewed by another English language expert, who compared it with the original scale to finalise it.

TABLE 1 | Research hypothesis.

Hypothesis	Hypothesis statement
H1	The depression negatively affects quality of life
H2	The depression positively affects post-traumatic stress disorder
H3	The anxiety negatively affects quality of life
H4	The anxiety positively affects post-traumatic stress disorder
H5	The quality of life negatively affects their post-traumatic stress disorder
H6	Quality of life moderates the relationship between depression and post-traumatic stress disorder
H7	Quality of life moderates the relationship between anxiety and post-traumatic stress disorder

2.2 | Sample

The sample comprises adult Syrian refugees (over 18 years old) who migrated to Türkiye following the civil war and are currently under temporary protection in Kayseri province, Türkiye. Due to the high costs and time constraints associated with reaching the entire population, the study focused on a representative sample, with data collected in line with scientific guidelines. To accurately define the study population and

14470348, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/inm.13452 by Emrah Gökkaya - Kayseri University , Wiley Online Library on [12/10/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

create a sampling frame that best represents it, the researcher, through a university rectorate, requested information about the refugees and permission to conduct a survey from the Kayseri Provincial Directorate of Migration Management on January 10, 2021. While the Directorate approved the survey application, it only provided the total number of Syrian refugees in the province and their age and gender distribution. Consequently, convenience sampling was utilised, with age and gender stratification applied to ensure the sample's representativeness.

In determining the sample size, the following Equation (1), which is used when the number of units in the population is unknown, was used and according to this formula, and the sample size was calculated to be 384 (Collins 1986).

$$n = \frac{t^2 P\,(1-p)}{d^2} \tag{1}$$

n = sample size; t = table value corresponding to a significance level of 95% (1.96); p = probability of the event in question occurring (50%); d = assumed error rate in sampling (5%).

Since there may be information missing in the data collection form, data was collected above the number 384, which was found with the formula. A total of 613 Syrian refugees were included in the study.

2.3 | Instruments

A questionnaire was used to collect data. Permission to administer the questionnaire was obtained from the Scientific Research and Publication Ethics Committee of a state university. The first page of the questionnaire consisted of an informed consent document. Participants were informed about the purpose of the research and treated as volunteers. They were also informed that the data would only be used for scientific research, and that confidentiality and anonymity of personal data were guaranteed. The questionnaire included a brief explanation of the study's purpose and instructions on how to complete it, and participants were assured of the confidentiality and anonymity of their answers. After obtaining participants' consent, the statements in the main part of the questionnaire were directed to them for response.

The questionnaire used consists of two parts. In the first part of the form, eight questions were used to reveal some sociodemographic characteristics of the participants (gender, age, marital status, how many people live in the same household, whether they receive regular healthcare, employment, average monthly income of the household and whether the person involved had a mental illness that required treatment before the war broke out in Syria).

In the second part of the questionnaire, there are a total of 54 statements to determine the mental disorder levels of participants such as depression, anxiety and PTSD and their quality of life. For all scales, participants' responses were measured on a 5-point scale ranging from 1 to 5. All multivariate analyses were conducted by using the mean scores of all scales.

2.3.1 | Depression

The depression levels of the participants were evaluated using the depression scale originally developed by Zigmond and Snaith (1983) and subsequently refined with modifications by other authors (e.g., Bjelland et al. 2002; Snaith 2003; Hansson et al. 2009; Matsudaira et al. 2009; Terluin et al. 2009) in their studies; it consists of a 10-item scale adapted from the scales in related studies. Responses to the 10 items were measured on a 5-point Likert scale ranging from 1 (=strongly disagree) to 5 (=strongly agree). The reliability of the scale, as measured by Cronbach's alpha, is 0.843. The mean of participant responses across the entire scale was 2.55.

2.3.2 | Quality of Life

The Quality-of-Life Scale (QOLS) developed by Burckhardt et al. (1989) was used. The Turkish adaptation of the scale was made by Erci (2005) and consists of a total of 16 items, regarding personal development and self-completion, leisure evaluation, relationship with other individuals, activities and well-being. Responses were measured on a five-point scale ranging from 1 (=very dissatisfied) to 5 (=very satisfied). The Cronbach's Alpha of the scale is 0.843. The means of the five sub-dimensions of the participant responses were as follows: 3.75 for the well-being, 3.82 for the relationship, 3.02 for the activity, 3.35 for the personal development and 2.90 for the leisure time.

2.3.3 | Anxiety

To reveal the state of anxiety of the participants, the Beck Anxiety Scale developed by Beck et al. (1988) was used. The Turkish adaptation of the scale was made by Ulusoy, Sahin, and Erkmen (1998) and consists of a total of 21 items. A total of 21 items were directed to individuals to reveal their state of anxiety and were measured with a five-point scale ranging from 1 (=never) to 5 (=very often). The Cronbach's Alpha of the scale is 0.896. The mean of participant responses across the entire scale was 1.58.

2.3.4 | PTSD

To determine the PTSD of participants, the PTSD Scale developed by Dokkedahl et al. (2015) was used. A total of seven items were directed to individuals to determine their PTSD and were measured on a scale ranging from 1 (=never) to 5 (=very often). The Cronbach's Alpha of the scale is 0.866. The mean of participant responses across the entire scale was 2.90.

2.4 | Data Analysis

The research data were analysed using multivariate statistical methods, following a four-step process. This comprehensive approach allowed for a thorough examination of the data, ensuring robustness in analysing relationships, evaluating scale adequacy and testing research hypotheses[1] (Creswell 2014).

14470348, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/inm.13452 by Emrah Gökkaya - Kayseri University , Wiley Online Library on [12/10/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

1. Descriptive statistical analysis: In the first step, descriptive statistical analyses such as skewness, kurtosis, frequency distribution, mean, standard deviation and median were applied to reveal the demographic characteristics of the participants and the distributional characteristics of the scale expressions.
2. Evaluation of psychometric adequacy: The second step involved evaluating the psychometric adequacy of the research scales. This included reliability and validity analyses to determine the psychometric adequacy of the scales. Construct validity was assessed through exploratory factor analysis and SEM-CFA. Total variance explained and standardised factor loadings of the scale items were used to evaluate construct validity. Reliability levels of the scales were examined using the Cronbach Alpha (α) statistic, which evaluates internal consistency between statements.
3. Correlational and comparative analysis: In the third step, Pearson correlation coefficients were calculated to reveal correlational relationships between variables. Additionally, *t*-tests and one-way ANOVA analyses were applied to assess the statistical significance of differences between group means of variables.
4. Hypothesis testing: In the fourth and final step of data analysis, SEM path analysis and regression analysis with moderator variables were employed to test the research hypotheses.

3 | Results

3.1 | Participants

In this study, 48.9% (300) of the participants were male and 51.1% (313) were female. When looked at the age distribution of the participants, the most common age group was 18–24 with a rate of 33.6% (206). This was followed by the age group of 25–31 with 28.4% (174), the age group of 32–38 with 14% (86), the age group of 39–45 with 9% (55), the age group of 46–52 with 6.9% (42), the age group of 53–59 with 4.6% (28) and the age group of 60 years and above with 3.6% (22). 98.4% (603) of the participants stated that they did not have a history of trauma, and 1.6% (10) stated that they had a history of trauma. Of the participants who stated that they had a history of trauma, 0.8% (5) stated that they experienced depression, and 0.8% (5) stated that they experienced anxiety. The household size of participants mostly consisted of 5 or more people (61.2%; $n = 419$). A significant fraction of the participants (89.1%; $n = 546$) stated that they were currently able to receive healthcare. In terms of marital status, 71% of the participants were married, 26.6% were unmarried and divorced, and 2.4% were divorced. To the question whether they were employed or not, 52.7% (323) of the participants answered that they were unemployed, 31.3% had a regular job, and 16% answered that they were working occasionally. Finally, the participants were asked about the monthly income of their household, to which they responded that they had an income of up to 5000[2] Turkish Lira (TL), an income of over 5000 TL or no income at all. Participation rates in the responses were 87.6% (537), 8.2% (50) and 4.2% (26), respectively.

3.2 | Correlations Between Variables

Table 2 shows the means and standard deviations (SD) of the research scales and the correlation coefficients between the variables. When the correlation analysis results are examined, it is observed that the correlation between many variables is statistically significant at a minimum level of 5%. When the findings regarding the scale averages are examined, the depression mean of the participants is 2.55 out of 5 (SD = 0.82). The average anxiety of the participants is 1.58 out of 5 (SD = 0.70). Based on the findings, it can be stated that Syrian refugees have low levels of depression and anxiety. The average PTSD of the participants is 2.90 out of 5 (SD = 0.99).

While the depression level of the participants has a positive significant relationship with anxiety and PTSD, it has a negative significant relationship with the development dimension of quality of life. It has a positive relationship with anxiety, depression and PTSD. In addition, anxiety has a negative significant relationship with the well-being, relationship and development sub-dimensions of quality of life and a positive significant relationship with the sub-dimension of leisure. PTSD, on the other hand, has a positive and significant relationship with depression and anxiety. In addition, PTSD has a significantly negative relationship with the well-being, relationships, activity and self-improvement sub-dimensions of quality of life.

3.3 | Independent Samples *t*-Test for Paired Groups

According to the independent samples *t*-test results applied to pairs, the depression characteristics of the participant groups differed significantly in terms of whether they have a history of trauma or not and whether they have access to healthcare services. There is no significant difference according to the gender and household size characteristics of the participant groups. Syrian refugees with a trauma history ($M = 3.45$, SD = 0.75) have higher depression levels than those without ($M = 2.53$, SD = 0.81), and the mean difference between the two groups is statistically significant ($p < 0.05$). Refugees who do not have access to healthcare ($M = 2.92$, SD = 0.90) show higher levels of depression than refugees who do have access ($M = 2.50$, SD = 0.80), and the mean difference between the groups is statistically significant ($p < 0.05$).

While there are significant differences in the anxiety levels of the participants in terms of gender, trauma history and access to healthcare services, there is no difference between the anxiety means in terms of household size. Women ($M = 1.71$, SD = 0.69) have higher anxiety than men ($M = 1.44$, SD = 0.67), and the mean difference in anxiety between the two groups is statistically significant ($p < 0.05$). The anxiety of refugees with a history of trauma ($M = 2.58$; SD = 0.87) is higher than that of refugees without a history of trauma ($M = 1.56$, SD = 0.68), and the mean difference between the two groups is statistically significant ($p < 0.05$). The anxiety of refugees who cannot access healthcare services ($M = 1.94$, SD = 0.80) is higher than that of refugees who have access to healthcare services ($M = 1.53$, SD = 0.67), and the mean difference between the two groups is statistically significant ($p < 0.05$).

14470348, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/inm.13452 by Emrah Gökkaya - Kayseri University , Wiley Online Library on [12/10/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

TABLE 2 | Pearson correlations between variables.

Variables	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	11)	(12)	(13)	(14)	(15)	(16)
Gender (1)	0.51	0.50	1															
Age (2)	2.55	1.67	0.015	1														
Trauma history (3)	0.02	0.13	0.049	0.073*	1													
Household size (4)	5.53	2.17	−0.061	0.198*	0.076*	1												
Healthcare services (5)	0.89	0.31	0.002	0.119*	−0.037	0.061	1											
Marital status (6)	0.76	0.48	−0.17*	0.463*	−0.016	0.060	0.172*	1										
Employment (7)	1.21	0.89	−0.626	0.177*	0.027	0.125*	−0.010	0.132*	1									
Level of income (8)	3.62	0.85	0.038	−0.12*	−0.13*	0.113*	0.088*	−0.09*	−0.20*	1								
Depression (9)	2.55	0.82	0.078*	0.037	0.141*	0.019	−0.15*	−0.063	−0.044	−0.041	1							
Anxiety (10)	1.58	0.70	−0.19*	0.088*	0.185*	−0.005	−0.18*	−0.035	0.243*	−0.11*	0.396*	1						
QOL_well-being (11)	3.75	0.95	0.172*	−0.043	−0.033	−0.019	0.137*	0.013	−0.24*	0.115*	−0.049	−0.30*	1					
QOL_relationship (12)	3.82	0.72	0.146*	0.149*	−0.048	0.041	0.126*	0.194*	−0.20*	−0.050	−0.017	−0.23*	0.432*	1				
QOL_activity (13)	3.02	0.85	0.002	0.015	0.065	−0.028	−0.062	−0.029	−0.018	−0.11*	−0.026	0.056	0.021	0.217*	1			
QOL_self-improvement (14)	3.35	0.76	0.124*	0.004	0.049	−0.049	−0.033	−0.026	−0.12*	−0.07*	−0.07*	−0.11*	0.191*	0.297*	0.445*	1		
QOL_leisure (15)	3.03	0.96	−0.024	−0.046	0.014	−0.07*	−0.07*	−0.048	0.051	−0.07*	−0.041	0.071*	0.079*	0.068*	0.467*	0.580*	1	
PTSD (16)	2.90	0.99	−0.25*	0.071*	0.069*	0.048	−0.06*	0.071*	0.207*	−0.064	0.084*	0.366*	−0.29*	−0.30*	−0.036	−0.22*	−0.004	1

Note: The correlation coefficients are Pearson-correlation coefficients.
Abbreviations: PTSD, post-traumatic stress disorder; QOL, Quality of Life.
*Indicates statistical significance at a minimum level of 5%.

14470349, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/inm.13452 by Erman Gökkaya - Kayseri University , Wiley Online Library on [12/10/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

The quality of life of participants and PTSD only had a significant relationship with gender characteristics. Although the means of male and female refugees' quality of life is close to each other, the quality of life of men ($M = 3.48$, SD = 0.56) is higher than that of women ($M = 3.34$, SD = 0.54) and the means difference between the two groups is statistically significant ($p < 0.05$). According to the findings, the PTSD level of female refugees ($M = 3.15$, SD = 0.96) is higher than of male refugees ($M = 2.65$, SD = 0.95) and the mean difference between the two groups is statistically significant ($p < 0.05$).

3.4 | One-Way ANOVA

According to the findings of the one-way ANOVA applied for the participant age groups, there are no significant differences between the means of the age groups in terms of depression, anxiety, PTSD and quality of life of Syrian refugees. Based on this finding, it can be stated that there is no relationship between depression, anxiety, PTSD, quality of life and age characteristics. According to the findings of the one-way ANOVA analysis applied for participant income groups, there is no significant difference between the group means in terms of depression and quality of life, while there are significant differences between the group means in terms of anxiety and PTSD. The anxiety levels ($M = 2.02$, SD = 0.84) and PTSD levels ($M = 3.71$, SD = 1.14) among refugees with low income are higher compared to those with relatively better income, where anxiety levels were ($M = 1.54$, SD = 0.67) and PTSD levels were ($M = 2.82$, SD = 0.97). The differences in mean anxiety ($F = 8.81$, $p < 0.01$) and PTSD ($F = 14.0$, $p < 0.01$) levels between income groups are found to be statistically significant. According to the findings of the one-way ANOVA applied for the participant marital status groups, there is no significant difference between the group means in terms of anxiety, PTSD and quality of life, while there are significant differences between the group means in terms of depression. The depression level among single refugees ($M = 2.68$, SD = 0.92) was higher compared to married refugees ($M = 2.49$, SD = 0.78), and the mean difference between the groups ($F = 4.39$, $p < 0.05$) was statistically significant. Refugees with regular jobs have lower levels of mental disorders such as depression ($M = 2.56$, SD = 0.77), anxiety ($M = 1.33$, SD = 0.59) and PTSD ($M = 2.62$, SD = 0.92) compared to refugees who are unemployed or do not have a regular job. The levels of depression ($M = 2.73$, SD = 0.79), anxiety ($M = 1.72$, SD = 0.68) and PTSD ($M = 3.08$, SD = 0.99) are higher in refugees who are unemployed or do not have a regular job. Similarly, the quality of life for refugees with a regular job ($M = 3.54$, SD = 0.56) is higher than for those who are unemployed or do not have a regular job ($M = 3.34$, SD = 0.54). The findings indicate that the mean differences in depression ($F = 3.20$, $p < 0.05$), anxiety ($F = 20.1$, $p < 0.01$), PTSD ($F = 13.6$, $p < 0.01$) and quality of life ($F = 7.92$, $p < 0.01$) are statistically significant.

3.5 | Results of the Hypothesis Testing

3.5.1 | SEM Path Analysis

The hypotheses formulated within the research model, as presented in Table 1, were tested using SEM path analysis. For model estimation results in SEM to be reliable, primarily, the model goodness-of-fit must be ensured. In this study, the goodness-of-fit of the models was evaluated using many fit indices that are frequently preferred (Hu and Bentler 1999). Since the observations of all variables in the structural model are approximately normally distributed, the structural model was estimated using the covariance structure and maximum likelihood (ML) method in AMOS (v.21) statistical software. Initially, the goodness-of-fit statistics (Table 3) were evaluated to determine how well the structural model aligned with the data. Subsequently, the probability values of the *t*-statistics for the standardised regression/path coefficients (β) were examined to verify whether each hypothesized relationship was supported by the data. If the probability value of the *t*-statistic is below 0.05 ($p < 0.05$), the null hypothesis is rejected.

According to the findings, the values of three indices (χ^2_*p* value, χ^2/df and root mean square error of approximation [RMSEA]) are within good limits, while the values of five indices (goodness-of-fit index [GFI], adjusted goodness-of-fit index [AGFI], incremental fit index [IFI], normed fit index [NFI] and comparative fit index [CFI]) are within excellent limits. This indicates a very good fit between the data and the structural model, making the model's prediction results reliable. Table 4 presents the estimation results for the hypotheses (H1–H5) formulated within the research model. The table includes the

TABLE 3 | Model goodness-of-fit results for the model.

	Recommended limits		
Fit indices	**Perfect**	**Good**	**Model**
χ^2 [*p*]	$0 < \chi^2 < 2$ df [$0.05 < p < 1$]	$2\,\text{df} < \chi^2 < 3$ df [$0.01 < p < 0.05$]	4.793 $p = 0.023$
χ^2/df	$0 < \chi^2/\text{df} < 3$	$3 < \chi^2/\text{df} < 5$	4.793
GFI	$0.95 < \text{GFI} < 1$	$0.90 < \text{GFI} < 0.95$	0.996
AGFI	$0.90 < \text{AGFI} < 1$	$0.85 < \text{AGFI} < 0.90$	0.961
RMSEA	$0 < \text{RMSEA} < 0.05$	$0.05 < \text{RMSEA} < 0.08$	0.079
IFI	$0.95 < \text{IFI} < 1$	$0.90 < \text{IFI} < 0.95$	0.973
NFI	$0.95 < \text{NFI} < 1$	$0.90 < \text{NFI} < 0.95$	0.967
CFI	$0.95 < \text{CFI} < 1$	$0.90 < \text{CFI} < 0.95$	0.972

Abbreviations: AGFI, adjusted goodness-of-fit index; CFI, comparative fit index; GFI, Goodness-of-fit index; IFI, incremental fit index; NFI, normed fit index; RMSEA, root mean square error of approximation.

14470348, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/inm.13452 by Emrah Gökkaya - Kayseri University , Wiley Online Library on [12/10/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

estimated standardised (β) and unstandardized (B) regression coefficients, calculated t-statistics, standard errors (SE) of statistics and probability values of test statistics. The results indicate that anxiety significantly and positively affects PTSD ($\beta = 0.329$; $t = 8.862$; $p = 0.000$) and significantly and negatively affects quality of life ($\beta = -0.160$; $t = -4.003$; $p = 0.000$). Additionally, quality of life significantly and negatively affects PTSD ($\beta = -0.216$; $t = -5.811$; $p = 0.000$). However, the effects of depression on both PTSD ($\beta = 0.048$; $t = 1.323$; $p = 0.186$) and quality of life ($\beta = 0.043$; $t = 1.077$; $p = 0.281$) were not statistically significant. The findings indicate that hypotheses H1 and H2 are rejected, while the other three hypotheses are accepted.

3.6 | Moderating Effect

In Table 5, the results of regression analysis regarding whether quality of life has a moderating effect on the effect of depression on PTSD are presented. According to the findings, the effect of depression on PTSD is positive and statistically significant ($\beta = 0.188$, $t = 3.69$ and $p < 0.01$). The effect of quality of life ($\beta = -0.568$, $t = -6.07$ and $p < 0.01$) and the interaction of quality of life and depression ($\beta = -0.581$, $t = -6.16$ and $p = p < 0.01$) on PTSD was negative and statistically significant. When the summary results of the model are examined, it is observed that the set of independent variables explains 11.7% of the change in PTSD and the model in its totality is significant ($F = 22.82$ and $p < 0.01$). Change in R^2 was statistically significant ($\Delta R^2 = 5.48$ and $p < 0.01$). Although the structural model's findings show no significant relationship between depression and PTSD, including the moderating effect of quality of life in the model reveals that both the positive relationship between depression and PTSD and the moderating effect of quality of life are statistically significant. The results indicate that enhancements in the quality of life for Syrian refugees moderate the relationship between depression and PTSD levels. Consequently, the research hypothesis H6 is supported.

To determine how the regulatory effect occurs, the slope curves in cases of high and low quality of life, shown in Figure 2, were drawn. As can be observed from the figure, quality of life weakens the effect of depression on PTSD, but this reducing moderating effect is relatively stronger in refugees with higher quality of life (Effect = −0.317, $t = -5.08$ and $p < 0.01$) than in refugees with lower quality of life (Effect = −0.263, $t = -3.72$ and $p < 0.01$).

TABLE 4 | Path analysis results.

Path	*B*	SE	*β*	*t*-statistics	Prob.
Depression ➔ PTSD	0.029	0.022	0.048	1.323	0.186
Anxiety ➔ PTSD	0.466	0.053	0.329**	8.862	0.000
Depression ➔ QOL	0.014	0.013	0.043	1.077	0.281
Anxiety ➔ QOL	−0.127	0.032	−0.160**	−4.003	0.000
QOL ➔ PTSD	−0.384	0.066	−0.216**	−5.811	0.000

Abbreviations: PTSD, post-traumatic stress disorder; QOL, Quality of Life.
**Indicates statistical significance at the 1%. *B* are unstandardized and *β* are standardised regression coefficients.

TABLE 5 | The moderating effect of quality of life on the effect of depression on PTSD.

					Confidence interval	
Variables	***β***	**SE**	***t*-stats**	**Prob.**	**LLCI**	**ULCI**
Constant	2.90	0.037	76.70**	0.000	2.82	2.97
Depression (DEP)	0.188	0.511	3.698**	0.002	0.088	0.288
Quality of life (QOL)	−0.568	0.093	−6.076**	0.000	−0.752	−0.384
QOL × DEP	−0.581	0.943	−6.160**	0.000	−0.764	−0.395
Summary of the model	***R***	***R*²**	**MSE**	***F***	**DF1**	**Prob.**
	%34.2	%11.7	0.873	22.82**	3	0.000
Change as a result of interaction			$\Delta R^2 = \%\ 5.48$ ($F = 37.9$ and Prob = 0.000)			
Moderating effect of QOL						
	Effect	**SE**	***t*-stats**	**Prob.**	**LLCI**	**ULCI**
Low QOL	−0.263	0.070	−3.724**	0.000	−0.402	−124
High QOL	−0.317	0.062	−5.088**	0.000	−0.440	−0.195

Note: Dependent variable = post-traumatic stress disorder (PTSD).
Abbreviations: LLCI, lower limit confidence interval, SE, standard errors; UCLI, upper limit confidence interval; *β*, standardised regression coefficient.
**Indicates statistical significance at the 1% level.

14470348, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/inm.13452 by Emrah Gökkaya - Kayseri University , Wiley Online Library on [12/10/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

In Table 6, the findings of regression analysis regarding whether quality of life has a moderating effect on the effect of anxiety on PTSD is shown. As can be observed from the findings, the effect of anxiety on PTSD is positive and statistically significant ($\beta = 0.492$, $t = 11.28$ and $p < 0.01$). The effect of quality of life ($\beta = -0.515$, $t = -5.20$ and $p < 0.01$) and the interaction of quality of life and anxiety ($\beta = -0.337$, $t = -2.96$ and $p = p < 0.01$) on PTSD was negative and statistically significant. When the summary results of the model are examined, it is observed that the set of independent variables explains 18.4% of the change in PTSD and the model in its totality is significant ($F = 59.4$ and $p < 0.01$). Although the change in R^2 is statistically significant ($\Delta R^2 = 0.001$ and $p < 0.01$), this effect is quite close to 0. Therefore, it can be concluded that research hypothesis H7 is only 'partially' supported.

4 | Discussion

This study aims to analyse the relationship between mental disorders and quality of life of Syrian refugees. Understanding the relationship between mental health disorders and quality of life may help to mitigate the psychosocial effects of war trauma and improve the well-being of refugees. In this context, a survey was conducted with 613 adult refugees living in a city in Türkiye.

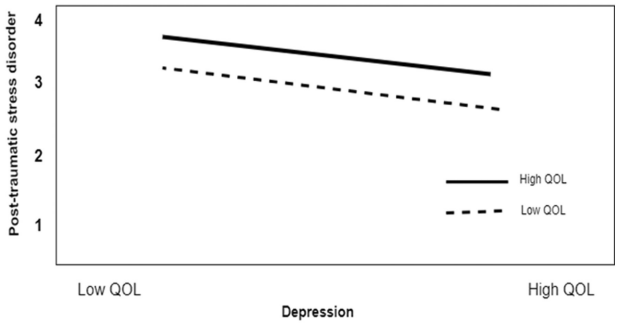


FIGURE 2 | Depression—quality of life interaction.

Descriptive statistics of the variables show that the levels of depression ($M = 2.55$), anxiety ($M = 1.58$) and PTSD ($M = 2.90$) among Syrian refugees are not negligible. PTSD and depression are higher in refugees living in urban areas compared to anxiety. Participating refugees did not report their quality of life as very low. In particular, the mean scores for the relationship ($M = 3.82$) and well-being ($M = 3.75$) dimensions of quality of life are higher than the mean scores for other quality of life dimensions. The strong family ties and adherence to traditions among Syrian refugees may be related to the high mean score of the relationship dimension. The high mean score of the well-being dimension is likely due to the provision of free services such as education, security, social services and financial aid to refugees in Turkey. However, their standard of living skills and equipment for self-management and self-efficacy, such as activities ($M = 3.02$), leisure time utilisation ($M = 3.03$) and self-improvement ($M = 3.35$), are relatively weak.

Correlation, *t*-test and ANOVA analyses provide insights into the relationships between socio-demographic variables, mental disorders and quality of life. The results show significant associations between some socio-demographic variables and mental disorders and quality of life among Syrian refugees. Among the eight socio-demographic variables, refugees' employment status is the only covariate jointly associated with three mental disorders and quality of life. Being unemployed or not having a regular job is associated with more depression, anxiety and PTSD symptoms in refugees living in urban areas, and naturally, refugees in this group have a lower quality of life.

The income level of Syrian refugees in Turkey is not only related to their employment status. Refugees receive financial aid and

TABLE 6 | The moderating effect of quality of life on the effect of anxiety on PTSD.

					Confidence interval	
Variables	**β**	**SE**	***t*-st.**	**Prob.**	**LLCI**	**ULCI**
Constant	2.907	0.036	79.17**	0.000	2.83	2.97
Anxiety	0.492	0.043	11.28**	0.000	0.406	0.587
Quality of life (QoL)	−0.515	0.099	−5.20**	0.000	−0.709	−0.320
QoL * Anxiety	−0.337	0.114	−2.96**	0.003	−0.561	−0.113
Summary of the model	***R***	***R*²**	**MSE**	***F***	**DF1**	**Prob.**
	%43.0	%18.4	0.806	59.4**	3	0.000
Change as a result of interaction			$\Delta R^2 = \%\ 0.01$ ($F = 8.76$ and Prob = 0.000)			
Moderating effect of QoL						
	Effect	**SE**	***t*-st.**	**Prob.**	**LLCI**	**ULCI**
Low QoL	−0.229	0.103	−2.21*	0.026	−0.433	−0.026
High QoL	−0.567	0.047	−11.9**	0.000	−0.661	−0.473

Note: Dependent variable = Post-Traumatic Stress Disorder (PTSD).
Abbreviations: LLCI, lower limit confidence interval; SE, standard errors; UCLI, upper limit confidence interval; β, standardised regression coefficient.
** and * indicate statistical significance at the 1% and 5% levels, respectively.

14470348, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/inm.13452 by Emrah Gökkaya - Kayseri University , Wiley Online Library on [12/10/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

can benefit from some services free of charge. However, sufficient income to reach a higher standard of living can be increased by working. According to the results, income is associated with both PTSD and anxiety, but not with depression. In Turkey, finding a job with a wage level that guarantees humane living conditions is one of the most significant challenges for refugees, and the stress of finding a job is a major source of their anxiety. Naturally, refugees with low income levels, where this anxiety is the highest, also have higher levels of PTSD and anxiety.

A history of trauma and access to health services are common correlates of depression and anxiety. Additionally, marital status was found to be associated with depression, but not with PTSD and anxiety. These results suggest that mental disorders in refugees are comorbid, as shown by many previous studies (e.g., Porter and Haslam 2005; Acartürk et al. 2021), in addition to economic deprivation (e.g., Porter and Haslam 2005; Ayazi et al. 2012; Karadag and Ogutlu, 2020; Scherer et al. 2020; Acartürk et al. 2021; Isik, Sismanlar, and Tekeli-Yesil 2024) and loneliness (Isik, Sismanlar, and Tekeli-Yesil 2024).

Although previous research on the associations between gender and mental disorders has provided mixed results, this study showed that anxiety and PTSD were associated with gender characteristics, but not depression, in refugees. Many previous studies (e.g., Porter and Haslam 2005; Ayazi et al. 2012; Sağaltıcı 2013; Chung et al. 2018) have found that anxiety and PTSD are relatively higher in women than in men. In addition, the quality of life of women refugees is also lower than that of men. Living in harsh urban conditions is a common challenge for both women and men refugees (Isik, Sismanlar, and Tekeli-Yesil 2024). Therefore, the sources of depression may be related to other life challenges beyond gender characteristics. However, refugee women under temporary protection in Turkey tend to perpetuate traditional gender roles (such as childcare), which poses additional challenges for them. While female refugees maintain these traditional roles, men are relatively more active in life. This can create opportunities for men to improve their mental state and increase their standard of living. Undoubtedly, one of these opportunities is participation in the workforce. While work contributes positively to the quality of life of refugee families by increasing household income, refugees who participate in the workforce (mostly men) can improve their mental, spiritual and behavioural well-being through interaction with other people.

The findings of our study yield intriguing insights into the relationship between PTSD, other mental disorders and the quality of life of refugees. Some studies (e.g., Mollica et al. 1998; Acartürk et al. 2021; Ginzburg, Ein-Dor, and Solomon 2010; Birinci 2021) have indicated that depression, as a mental disorder, does not predict both PTSD and quality of life. Conversely, our findings demonstrated that anxiety, another mental disorder, exacerbates both the quality of life and PTSD of refugees (similarly noted by Al-Smadi et al. 2017). However, to our knowledge, no prior research has empirically examined how quality of life moderates the associations between mental disorders. Our study unveiled that quality of life moderates the positive interaction between depression and PTSD, albeit it does not sufficiently moderate the relationship between anxiety and PTSD. These findings suggest that living conditions are an important contextual factor affecting refugees' mental health. Designing context-specific mental health and support services for refugees can help identify and address their psychosocial needs. If these services are easily accessible, the prevalence of mental disorders among refugees can be reduced.

4.1 | Limitations

Our study specifically focused on the Syrian refugee population and mental disorders such as PTSD, depression and anxiety. Other mental health disorders not addressed in our study may be related to PTSD and quality of life, and the results may vary for migrant groups who migrated for reasons other than war. Additionally, our study was a field study limited to individuals aged 18 and over, with data collected using a questionnaire technique. The results of our study might differ in other study groups (e.g., adolescents and children) and should be confirmed by clinical research. Furthermore, our research is limited to Syrian refugees living in Kayseri province and involved in daily life. Kayseri is a medium-sized province with a relatively high population density, high industrialization and relatively good living standards compared to other provinces in Türkiye. As supported by the existing literature, the region of migration can affect variables such as the mental state and quality of life of refugees (Koochek et al. 2007; Tosun and Azazi 2019; Isik, Sismanlar, and Tekeli-Yesil 2024). Therefore, further research on refugees living in areas with different local conditions (e.g., rural or metropolitan areas) or those under protection in camps may yield different results.

5 | Conclusion

Understanding the relationship between mental health and quality of life is essential for comprehending the psychosocial consequences of man-made disasters such as war on affected individuals. This understanding can help mitigate the psychological consequences of disasters and improve the well-being of victims. Our study findings provide valuable insights for planning mental health policies and social integration measures for Syrian refugees residing in urban settings.

The results highlight the need to integrate health and social service policies to reduce mental health disorders and improve the quality of life of Syrian refugees. Increasing context-specific psychosocial services and ensuring adequate access to these services is imperative to reduce the negative psychological impact of war and other hardships on refugees and improve their quality of life. In particular, we emphasise that psychosocial support services for women refugees require greater sensitivity. Generally, Syrian refugees have very low access to psychosocial services in Turkey. Awareness-raising programs and appropriate policy planning should facilitate refugees' access to these services. These services can be incorporated into general health services. Additionally, increasing interpreter services to overcome language barriers, raising awareness among health service providers and adapting services according to the socioeconomic status of individuals can enhance access to these services.

It is vital to adapt family and social service policies to the needs of refugees and to protect the unity and integrity of families. Increasing employment opportunities for refugees, especially

14470348, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/inm.13452 by Emrah Gökkaya - Kayseri University , Wiley Online Library on [12/10/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

women, and preventing uninsured or precarious employment are crucial to facilitating refugees' participation in the labor force. Furthermore, improving access to education services is essential for the socialisation and integration of refugees. Finally, civil society organisations can play a more active role in providing psychosocial services, education, participation processes and social interactions.

6 | Relevance For Clinical Practice

The findings of this study show that mental disorders of Syrian refugees fleeing war are associated with quality of life. They need more clinical treatments and social supports to improve their mental disorders and improve their quality of life. Trauma-based practices need to be developed to reduce the negative effects of war trauma.

Author Contributions

E.G., M.H.T., and Ö.D. contributed to the conceptualization of the study. Data collection and analysis were performed by M.H.T. and E.G. Ö.D. drafted the original manuscript. Significant contributions to manuscript revision were made by E.G., M.H.T. and Ö.D. All authors have read and approved the final manuscript.

Acknowledgements

We want to thank editor and two reviewers for their insightful comments and sharing knowledge with us. This study was derived from the doctoral thesis titled: "A Study on the Relationship Between Post Traumatic Stress Disorder, Depression and Anxiety Symptoms and Quality of Life of Syrian Refugees: Case Study for the Province of Kayseri".

Ethics Statement

The approval for the questionnaire used in this study was obtained from Gumushane University Scientific Research and Publication Ethics Committee (Year/Number: 2021/45).

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Endnotes

[1] To obtain the descriptive statistics results of the 54 items and the validity and reliability analysis results revealing the psychometric adequacy of the four scales, you can reach out to the corresponding author of the study. He should be able to provide you with the requested information upon your request.

[2] 5000 TL corresponds to the monthly minimum wage level in Türkiye at the time of the survey.

References

Acartürk, C., M. Cetinkaya, I. Senay, B. Gulen, T. Aker, and D. Hinton. 2018. "Prevalence and Predictors of Posttraumatic Stress and Depression Symptoms Among Syrian Refugees in a Refugee Camp." *Journal of Nervous and Mental Disease* 206, no. 1: 40–45.

Acartürk, C., M. McGrath, B. Roberts, et al. 2021. "Prevalence and Predictors of Common Mental Disorders Among Syrian Refugees in Istanbul, Turkey: A Cross-Sectional Study." *Social Psychiatry and Psychiatric Epidemiology* 56, no. 3: 475–484.

Ai, A. L., C. Peterson, and D. Ubelhor. 2002. "War-Related Trauma and Symptoms of Posttraumatic Stress Disorder Among Adult Kosovar Refugees." *Journal of Traumatic Stress* 15, no. 2: 157–160.

Al-Smadi, A. M., L. I. Tawalbeh, O. S. Gammoh, A. F. Ashour, A. Alshraifeen, and Y. M. Gougazeh. 2017. "Anxiety, Stress, and Quality of Life Among Iraqi Refugees in Jordan: A Cross Sectional Survey." *Nursing and Health Sciences* 19, no. 1: 100–104.

Ayazi, T., L. Lien, A. H. Eide, M. M. Ruom, and E. Hauff. 2012. "What Are the Risk Factors for the Comorbidity of Posttraumatic Stress Disorder and Depression in a War-Affected Population? A Cross-Sectional Community Study in South Sudan." *BMC Psychiatry* 12, no. 1: 1–12.

Beck, A. T., N. Epstein, G. Brown, and R. A. Steer. 1988. "An Inventory for Measuring Clinical Anxiety: Psychometric Properties." *Journal of Consulting and Clinical Psychology* 56, no. 6: 893–897.

Birinci, E. 2021. "Investigation of Quality of Life and Depression Status of Elderly Individuals." *Journal of Medical Social Work* 17: 119–129.

Bjelland, I., A. A. Dahl, T. T. Haug, and D. Neckelmann. 2002. "The Validity of the Hospital Anxiety and Depression Scale: An Updated Literature Review." *Journal of Psychosomatic Research* 52, no. 2: 69–77.

Brady, K. T., T. K. Killeen, T. Brewerton, and S. Lucerini. 2000. "Comorbidity of Psychiatric Disorders and Posttraumatic Stress Disorder." *Journal of Clinical Psychiatry* 61: 22–32.

Brislin, R. W. 1980. "Cross-Cultural Research Methods: Strategies, Problems, Applications." In *Environment and Culture*, edited by I. Altman, A. Rapoport, and J. F. Wohlwill, 47–82. Boston, MA: Springer US.

Burckhardt, C. S., S. L. Woods, A. A. Schultz, and D. M. Ziebarth. 1989. "Quality of Life of Adults With Chronic Illness: A Psychometric Study." *Research in Nursing and Health* 12, no. 6: 347–354.

Chung, M. C., N. AlQarni, M. AlMazrouei, et al. 2018. "Posttraumatic Stress Disorder and Psychiatric Comorbidity Among Syrian Refugees of Different Ages: The Role of Trauma Centrality." *Psychiatric Quarterly* 89, no. 4: 909–921.

Collins, M. 1986. "Sampling." In *Consumer Market Research Handbook*, edited by R. M. Worcester and J. Downham, 3rd ed. Maidenhead, UK: Esomar, McGraw-Hill.

Creswell, J. W. 2014. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 4th ed. Los Angles, CA, London, UK, New Delhi, India, Singapore, Singapore, Washington, DC: Sage.

Dokkedahl, S., H. Oboke, E. Ovuga, and A. Elklit. 2015. "ICD-11 Trauma Questionnaires for PTSD and Complex PTSD: Validation Among Civilians and Former Abducted Children in Northern Uganda." *Journal of Psychiatry* 18, no. 6: 1000335. https://doi.org/10.4172/2378-5756.1000335.

Elwood, L. S., K. S. Hahn, B. O. Olatunji, and N. L. Williams. 2009. "Cognitive Vulnerabilities to the Development of PTSD: A Review of Four Vulnerabilities and the Proposal of an Integrative Vulnerability Aodel." *Clinical Psychology Review* 29, no. 1: 87–100.

Erci, B. 2005. "Reliability and Validity of the Turkish Version of the Quality of Life Scale." *Anatolian Journal of Nursing and Health Sciences* 8, no. 2: 74–81.

Fazel, M., J. Wheeler, and J. Danesh. 2005. "Prevalence of Serious Mental Disorder in 7000 Refugees Resettled in Western Countries: A Systematic Review." *Lancet* 365, no. 9467: 1309–1314.

Ginzburg, K., T. Ein-Dor, and Z. Solomon. 2010. "Comorbidity of Posttraumatic Stress Disorder, Anxiety and Depression: A 20-Year

14470348, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/inm.13452 by Emrah Gökkaya - Kayseri University , Wiley Online Library on [12/10/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Longitudinal Study of War Veterans." *Journal of Affective Disorders* 123, no. 1–3: 249–257.

Hansson, M., J. Chotai, A. Nordstöm, and O. Bodlund. 2009. "Comparison of Two Selfrating Scales to Detect Depression: HADS and PHQ-9." *British Journal of General Practice* 59, no. 566: e283–e288.

Henkelmann, J. R., S. de Best, C. Deckers, et al. 2020. "Anxiety, Depression and Post-Traumatic Stress Disorder in Refugees Resettling in High-Income Countries: Systematic Review and Metaanalysis." *BJPsych Open* 6, no. 4: 1–8. https://doi.org/10.1192/bjo.2020.54.

Hermansson, A. C., T. Timpka, and M. Thyberg. 2002. "The Mental Health of Warwounded Refugees: An 8-Year Follow-Up." *Journal of Nervous and Mental Disease* 190, no. 6: 374–380.

Hu, L. T., and P. M. Bentler. 1999. "Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives." *Structural Equation Modeling: A Multidisciplinary Journal* 6, no. 1: 1–55.

Isik, E., S. G. Sismanlar, and S. Tekeli-Yesil. 2024. "PTSD, Depression, and Migration-Related Experiences Among Syrian Refugees Living in Camp vs Urban Settings." *Transcultural Psychiatry*: 13634615241250216.

Karadag, M., and H. Ogutlu. 2020. "Prevalence of Psychiatric Symptoms Among Refugee Adolescents in Turkey: A Controlled Study." *Brazilian Journal of Psychiatry* 43: 55–60.

Koochek, A., A. Montazeri, S. E. Johansson, and J. Sundquist. 2007. "Health-Related Quality of Life and Migration: A Cross-Sectional Study on Elderly Iranians in Sweden." *Health and Quality of Life Outcomes* 5, no. 1: 1–8.

Matsudaira, T., H. Igarashi, H. Kikuchi, et al. 2009. "Factor Structure of the Hospital Anxiety and Depression Scale in Japanese Psychiatric Outpatient and Student Populations." *Health and Quality of Life Outcomes* 7, no. 1: 1–9.

Miller, K. E., and A. Rasmussen. 2017. "The Mental Health of Civilians Displaced by Armed Conflict: An Ecological Model of Refugee Distress." *Epidemiology and Psychiatric Sciences* 26, no. 2: 129–138.

Mollica, R. F., K. McInnes, C. Pool, and S. Tor. 1998. "Dose-Effect Relationships of Trauma to Symptoms of Depression and Post-Traumatic Stress Disorder Among Cambodian Survivors of Mass Violence." *British Journal of Psychiatry* 173, no. 6: 482–488.

Porter, M., and N. Haslam. 2005. "Predisplacement and Postdisplacement Factors Associated With Mental Health of Refugees and Internally Displaced Persons: A Meta-Analysis." *Journal of the American Medical Association* 294, no. 5: 602–612.

Sağaltıcı, E. 2013. "Screening for Posttraumatic Stress Disorder in Syrian Refugees." Unpublished Dissertation, Department of Mental Health and Diseases, Faculty of Medicine, Gaziantep University, Gaziantep. Turkish Thesis Database.

Scherer, N., S. Hameed, C. Acarturk, et al. 2020. "Prevalence of Common Mental Disorders Among Syrian Refugee Children and Adolescents in Sultanbeyli District, Istanbul: Results of a Population Based Survey." *Epidemiology and Psychiatric Sciences* 29: 1–9.

Snaith, R. P. 2003. "The Hospital Anxiety and Depression Scale." *Health and Quality of Life Outcomes* 1, no. 1: 1–4.

Terluin, B., E. P. Brouwers, H. W. van Marwijk, P. F. Verhaak, and H. E. van der Horst. 2009. "Detecting Depressive and Anxiety Disorders in Distressed Patients in Primary Care; Comparative Diagnostic Accuracy of the Four-Dimensional Symptom Questionnaire (4DSQ) and the Hospital Anxiety and Depression Scale (HADS)." *BMC Family Practice* 10, no. 1: 1–12.

Tosun, S., and H. Azazi. 2019. "Social Policy Practices for Refugees and Asylum Seekers at the Local Level: Balıkesir Case." *Journal of Entrepreneurship and Development* 14, no. 2: 213–234.

Ulusoy, M., N. H. Sahin, and H. Erkmen. 1998. "Turkish Version of the Beck Anxiety Inventory: Psychometric Properties." *Journal of Cognitive Psychotherapy* 12, no. 2: 163.

UNHCR. 2016. "Syria Regional Refugee Response Inter-Agency." http://data.unhcr.org/syrianrefugees/regional.php.

UNHCR. 2021. "Figures at a Glance." https://www.unhcr.org/figures-at-a-glance.html.

UNHCR. 2022. "Refugee Numbers." https://www.unhcr.org/figures-at-a-glance.html.

Uygun, E. 2020. "The Relation Between Syrians' Quality of Life, Depression and Anxiety Levels and Economic Conditions: A Cross-Sectional Study at an Adult Refugee Mental Health Clinic in Turkey." *Anatolian Journal of Psychiatry* 21, no. 4: 403–408.

WHO. 2001. "The World Health Report 2001: Mental Health: New Understanding, New Hope."

Zigmond, A. S., and R. P. Snaith. 1983. "The Hospital Anxiety and Depression Scale." *Acta Psychiatrica Scandinavica* 67, no. 6: 361–370.

14470348, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/inm.13452 by Emrah Gökkaya - Kayseri University , Wiley Online Library on [12/10/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License