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Examining the risk factors of chronic pelvic pain and its effect on the quality of life in refugee and non-refugee women



Zeynep Demirtaş^{1*}, Didem Arslantaş², Alaettin Ünsal², Figen Çalışkan³ and Fulorya İnan⁴

Abstract

Background This study aimed to determine the prevalence of chronic pelvic pain(CPP) in refugee and non-refugee women, determine the factors associated with CPP, and evaluate the effect of CPP on life quality.

Methods This was a cross-sectional study conducted among 283 non-refugee and 278 refugee women in Turkey. A questionnaire including questions assessing chronic pelvic pain and related factors, World Health Organization Quality of Life Scale Short Form(WHOQOL-BREF), Depression Anxiety Stress Scale-21, were administered to the participants. Chi-square test, Mann-Whitney U test and multiple logistic regression analysis were used for statistical analysis.

Results The prevalence of chronic pelvic pain was 41.0% in refugee women and 19.1% in non-refugee women (p<0.001). The prevalence of CPP was 1.68 times higher in refugee women than in non-refugee women (OR;95%Cl:1.68;1.01–2.81). In the multivariate analysis performed in the study group, refugee status, low family income status(OR;95%Cl:2.09;1.26–3.46), low back pain(OR;95%Cl:2.02;1.21–3.35), dyspareunia (OR; 95%Cl:2.96;1.75–4.99), number of three or more miscarriages (OR;95%Cl:3.07;1.18–8.01), history of gynaecological surgery (OR;95%Cl:2.44;1.33–4.50), diarrhea (OR;95%Cl:2.01;1.07–3.76), urinary tract infections(OR; 95%Cl:1.66;1.02–2.71) and anxiety(OR; 95%Cl:1.17;1.10–1.24) were found to be risk factors for CPP. In the refugee and non-refugee groups, those with CPP had lower scores in all subdomains of the WHOQOL-BREF scale than those without CPP (p < 0.05).

Conclusions Refugee status independently contributes to the risk of developing CPP. Targeted interventions to address CPP and its associated risk factors are needed, particularly in vulnerable refugee populations, to improve their quality of life.

Keywords Refugee, Women, Chronic pelvic pain, Quality of life

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Introduction

Refugees, whose numbers are growing due to increasing inequalities, conflicts and wars in the world, face many problems due to their difficult living conditions. Factors such as housing problems, language barrier, lack of access to health services, and social and psychological stress negatively affect the health of refugees [1]. Refugee women, one of the most vulnerable groups in terms of health, are an important public health issue because of the risks they face from being both women and refugees. Refugee women's health suffers disproportionately because of the prioritization of other family members due to gender discrimination, and fear of seeking health care services. Menstrual irregularities, severe pelvic pain or dysmenorrhea, reproductive tract infections, pregnancyrelated problems and mental disorders are reported to be common among refugee women [2-4].

Chronic pelvic pain (CPP) is a problem that significantly affects women's daily activities, social life, and relationships [5]. CPP causes reduced physical activity, social isolation, sexual dysfunction, poor sleep quality in women, negatively impacting on women's daily lives, affecting physical and mental health, and significantly reducing women's quality of life [6, 7]. It is defined by the Royal College of Obstetricians & Gynaecologists as intermittent or constant pain in the lower abdomen or pelvis of at least 6 months' duration, not occurring exclusively with menstruation or intercourse and not associated with pregnancy [8]. Worldwide prevalence has been reported to range from 5.7 to 26.6% [9]. In a recent study, Peinado-Molina et al. (2023), reported the prevalence of pelvic pain as 18.7% [10]. Although there is no study reporting the prevalence of CPP in refugee women, the prevalence of pelvic pain and dysmenorrhea was reported as 51.6% in a study conducted in refugee women in Lebanon [3]. Gynaecological, gastrointestinal, genitourinary, musculoskeletal and psychiatric disorders are known to play a role in the etiology of CPP [11]. Depression, anxiety, stress, history of physical or sexual abuse, post-traumatic stress disorder are the psychiatric conditions associated with CPP [12].

As CPP is associated with stressful life events, history of trauma and mental health disorders, CPP may be a common disorder among refugee women. It has been reported in the literature that chronic pain conditions are more common in refugee populations [13], but no study was found that investigated CPP in refugee women. In this context, the aim of this study was to determine the prevalence of chronic pelvic pain in refugee and non-refugee women, to examine the factors associated with CPP, and to assess the impact of CPP on quality of life.

Methods

Study design

The cross-sectional study was conducted between May and October 2019 among local women who applied to Sivrihisar Family Health Center(FHC) and refugee women who applied to Eskişehir Osmangazi University (ESOGU) Women's Health Counselling Center. Sivrihisar district is a semi-rural district of Eskişehir province in the Central Anatolian Region of Turkey. ESOGU Women's Health Counselling Center is a collaboration between United Nations Population Fund, Eskişehir Public Health Directorate, and ESOGU, providing free health and education services to refugees. Approval (11/22.01.2019) was obtained from the ESOGU Non-Interventional Clinical Research Ethics Committee. Additionally, permissions to conduct the study on refugees was obtained from the Republic of Turkey Ministry of Health, Republic of Turkey Ministry of Interior Presidency of Migration Management and administration of the ESOGU Women's Health Counseling Center.

Participants

The sample size was calculated as a minimum of 246 people for each refugee and non-refugee group with a confidence interval of 95%, a margin of error of 5%, and a prevalence of chronic pelvic pain of 20% [9]. Women aged 18–49 who applied to Sivrihisar FHC for any reason during the study period constituted the non-refugee study group, and women aged 18–49 who visited ESOGU Women's Health Counselling Center for any reason constituted the refugee study group. Pregnant women and women who gave birth in the previous six months were not included in the study.

After informing the women who applied to the ESOGU Women's Health Counselling Centre and Sivrihisar FHC about the purpose and subject of the study, informed consent was obtained from those who agreed to participate in the study. The questionnaire form was completed by the literate participants themselves. and the illiterate participants were completed using the face-to-face interview method by researchers.

Measures

The questionnaire (File 1) used in our study was developed using the literature according to the purpose of the study [14–17]. A questionnaire form was prepared in Turkish for the non-refugee group and in Arabic for the refugee group. The translation of the questionnaire form into the Arabic language was done by an interpreter (E.E.). The first part of the questionnaire form consisted of question to assess some socio-demographic characteristics of the women (age, education, employment status, family income level, source of income), the presence and severity of chronic pelvic pain, and some variables that may be associated with chronic pelvic pain (age at first menstruation, intermenstrual period, duration of menstrual bleeding, dysmenorrhea, urinary incontinence, low back pain, dyspareunia, use of contraceptive method, number of pregnancies, number of miscarriages, history of cesarean section, history of gynecological surgery, history of abdominal surgery other than gynecological surgery, sleep disturbance, constipation, diarrhea, recurrent urinary tract infections, pelvic inflammatory disease). The appropriateness and comprehensibility of each question was evaluated by 6 specialists (3 gynaecologist, 3 public health specialists). The specialists were asked to rate each item as "necessary", "useful but inadequate", or "unnecessary" and any necessary adjustments were made based on the feedback received during the pilot testing phase. The content validity index of the questionnaire was 0.96.

The second part of the questionnaire consisted of the World Health Organization Quality of Life Scale Short Form (WHOQOL-BREF) and Depression Anxiety Stress Scale (DASS-21) questions. The WHOQOL-BREF scale was developed by the WHOQOL-Group in 1998 and consisted of 26 questions selected from a larger assessment tool (WHOQOL-100) consisting of 100 questions. WHOQOL-BREF includes four domains. These are physical health, psychological health, social relationships, and environmental dimensions. The scale is a 5-point Likert scale, and the quality of life increases as the scores obtained from the scale increase [18]. The Arabic validity and reliability of the scale were conducted by Ohaeri and Awadalla in 2009 [19]. Turkish validity and reliability of the scale was conducted by Eser et al. in 1999 [20].

The DASS-21 scale, a 21-question form of the DASS-42 scale, was developed by Antony et al. in 1998 [21]. The Turkish validity and reliability of the scale were conducted by Yilmaz et al. in 2017 [22], and the Arabic validity and reliability were conducted by Moussa et al. in 2001 [23]. The DASS-21 is a 4-point Likert-type self-report scale that includes anxiety, depression, and stress subdimensions, each of which consists of seven items. The higher the score obtained from the subscales, the higher the level of depression, anxiety, or stress.

To assess CPP, participants were asked to answer "yes" or "no" to the question "Have you had persistent or intermittent pain in the lower abdomen or groin area for the last 6 months that is not associated with menstruation, pregnancy or sexual intercourse?" [8]. Those who answered 'yes' were considered to have CPP. The severity of chronic pelvic pain was assessed using the Visual Analog Scale (VAS). The VAS is an equally divided scale with '0 - no pain' at one end and '10 - most severe pain' at the other [24]. According to women's self-perception, the level of family income was rated as 'low', 'medium' and 'high'. Dysmenorrhea was defined as pain in the abdomen or lower back during menstruation [25]. Dyspareunia was asked as 'pain during sexual intercourse or within 24 hours after intercourse [14]. Sleep disturbance was asked as 'difficulty falling asleep, frequent awakening from sleep, not feeling rested after sleep' [26]. Complaints of constipation and diarrhea in the 'last six months' were considered to be present. Pelvic inflammatory disease was asked as 'having an infection of the upper reproductive organs (ovaries, tubes) in the last six months' [27].

Statistical analysis

The data obtained in the study were analysed using the SPSS (Version 15.0) statistical package program. The conformity of the data to normal distribution was evaluated with the Kolmogorov-Smirnov test. The chi-square and Mann Whitney U tests were used for univariate statistical analysis. Multiple logistic regression analysis was performed to evaluate factors independently associated with CPP and to eliminate the effect of confounding factors. Multiple logistic regression analysis was performed using the backward Wald method with the variables found to be associated with CPP in the univariate analysis. Statistical significance level was accepted as $p \le 0.05$.

Results

The study group consisted of 561 women, 283(50.4%) of whom were non-refugee and 278(49.6%) of whom were refugees. Among the refugee women in the study group, 34(12.2%) were from Syria, 207(74.5%) from Iraq, 33(11.9%) from Afghanistan, and 4(1.4%) from other countries. The refugee group had lower levels of education and family income than the non-refugee group. The distribution of non-refugee and refugee women in the study group according to some sociodemographic characteristics is shown in Table 1.

The prevalence of chronic pelvic pain was 41.0% (n=114.) in refugee women and 19.1% (n=54) in non-refugee women (p<0.001). Among women with chronic pelvic pain, the median (min-max) severity of chronic pelvic pain according to VAS was 5.0(2.0–9.0) in the refugee group and 4.5(1.0–8.0) in the non-refugee group. The severity of chronic pelvic pain was higher in the refugee group than in the non-refugee group (z:4.118;p<0.001).

As a result of the univariate analysis performed in the whole study group, family income level, dysmenorrhea, urinary incontinence, low back pain, dyspareunia, number of pregnancies, number of miscarriages, history of gynecologic surgery, history of non-gynecologic abdominal surgery, complaint of sleep disturbance, constipation, diarrhea, urinary tract infections, pelvic inflammatory disease and scores obtained from DASS-21 subdomains found to be associated with chronic pelvic pain(p<0.05). Table 2 shows the results of Logistic Regression Analysis performed with the variables which were found to be

Table 1 Distribution of non-refugee and refugee groups based on some sociodemographic characteristics

Sociodemographic Characteristics	Non-Refugee Group	Refugee	Test değeri	
	n(%)	Group	x²;p	
		n(%)		
Age				
18–29	56(19.8)	127(45.7)	46.142;<0.001	
30–39	107(37.8)	86(30.9)		
40–49	120(42.4)	65(23.4)		
Education level				
Unschooled	14(5.0)	54(19.4)	44.863;<0.001	
Primary school	113(39.9)	96(34.5)		
Secondary school	41(14.5)	58(20.9)		
High school	73(25.8)	31(11.2)		
University	42(14.8)	39(14.0)		
Employment status				
Not working	211(74.6)	241(86.7)	13.186;<0.001	
Working	72(25.4)	37(13.3)		
Family income				
Low	29(10.3)	127(45.7)	90.284;<0.001	
Medium	216(76.3)	137(49.3)		
High	38(13.4)	14(5.0)		
Source of income				
Herself	49(17.3)	15(5.4)	46.206;<0.001	
Partner/Family	221(78.1)	206(74.1)		
Other (charity, society, etc.)	13(4.6)	57(20.5)		
Total	283 (100)	278 (100)		
x ² :Chi-Square Test				

Table 2	Logistic rec	ression i	model re	esults f	ormed	with th	e variables	associated	l with	chronic	pelvic	pain (step fina	al)
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Variables*	β	SE	p	OR	%95 CI
Study group (reference: non-refugee)					
Refugee	0.519	0.262	0.047	1.68	1.01-2.81
Family income level (reference: modera	ate)				
Good	0.427	0.421	0.311	1.53	0.67-3.49
Bad	0.736	0.259	0.004	2.09	1.26-3.46
Dysmenorrhea (reference: no)					
Yes	0.520	0.297	0.08	1.68	0.94-3.01
Low back pain (reference: no)					
Yes	0.702	0.259	0.007	2.02	1.21-3.35
Dyspareunia (reference: no)					
Yes	1.085	0.268	< 0.001	2.96	1.75-4.99
Number of miscarriages (reference: < 3	3)				
≥3	1.124	0.488	0.021	3.07	1.18-8.01
History of gynecological surgery (refe	erence: no)				
Yes	0.894	0.311	0.004	2.44	1.33-4.50
Constipation (reference: no)					
Yes	0.444	0.248	0.073	1.56	0.9–2.53
Diarrhea (reference: no)					
Yes	0.697	0.320	0.03	2.01	1.07-3.76
Urinary tract infections (reference: no)					
Yes	0.507	0.25	0.042	1.66	1.02-2.71
DASS-21 Scale anxiety scores	0.159	0.03	< 0.001	1.17	1.10-1.24

 β :Beta coefficent, SE: Standard Error, OR: Odds Ratio, CI: Confidence Interval

*Study group, family income level, dysmenorrhea, urinary incontinence, low back pain, dyspareunia, number of pregnancies, number of miscarriages, history of gynecologic surgery, history of non-gynecologic abdominal surgery, sleep disturbance, constipation, diarrhea, urinary tract infections, pelvic inflammatory disease and DASS-21 subdomains are variables for which the multivariate analysis is adjusted

associated with chronic pelvic pain after univariate analysis in the study group. As a result of logistic regression analysis, it was found that being a refugee increased the frequency of chronic pelvic pain 1.68 times (OR; 95%CI: 1.68;1.01–2.81).

In refugee and non-refugee women, those with chronic pelvic pain had lower scores in all subdomains of the WHOQOL-BREF scale (p<0.05). The distribution of the median scores of those with and without chronic pelvic pain in the refugee and non-refugee groups in WHO-QOL-BREF subdomains is presented in Table 3.

Discussion

In this study, refugee status, low family income, low back pain, dyspareunia, number of three or more miscarriages, history of gynaecological surgery, diarrhea, urinary tract infections and anxiety were found to be risk factors for CPP. Our study found that chronic pelvic pain is a common problem among refugee women. There are no studies in the literature reporting on the prevalence of chronic pelvic pain in refugee women. A study reported that one of the most common reasons for refugees to apply to primary care is pain problems, and pelvic pain in women has an important share among these pain causes [28]. In a study conducted in Lebanon, the prevalence of severe pelvic pain or dysmenorrhea among refugees was reported as 51.6% [3]. According to the CPP prevalence values (5.7-26.6%) reported in various studies worldwide [9, 16, 29, 30], the CPP prevalence we found in the local group is compatible with the literature, but the CPP prevalence we found in the refugee group is much higher.

In our study, the prevalence of CPP was 1.68 times higher in the refugee group than in the non-refugee group (OR;95%CI:1.68;1.01–2.81). It is known that chronic pain is a very common problem among refugees. This situation is also associated with the history of trauma in refugees, and it is emphasized that the pain that refugees believe to be of physical in origin reflects their emotional distress [31, 32]. One of the reasons for the difference in the frequency of CPP in refugee and non-refugee groups may be genetic factors and ethnicity differences [33]. In addition, the variability of pain perception and expression in different ethnic groups may have contributed to this difference [31].

In this study, the prevalence of CPP was 2.09 times higher in those who reported poor family income compared with those who reported moderate family income (OR;95%CI:2.09;1.26–3.46). According to Özdemir's study, CPP was 1.8 times higher in those with poor income status compared with those with moderate income status [15]. Studies in New Zealand and Brazil, found no relationship was between income level and CPP [14, 34]. The reasons for the different results reported in the literature may be due to differences in the socioeconomic levels of the countries in which the studies were conducted and the lack of a standardized method for assessing income levels. Since being a refugee and having poor family income were important predictors of CPP in our study, it was assumed that CPP was also a problem related to socioeconomic status. In this respect, qualitative studies on CPP may be needed.

This study identified low back pain as a predictive factor for CPP(OR;95%CI:2.02;1.21-3.35); similar findings (OR:1.7) were reported by Silva et al. [17]. Pelvic organ pathologies such as endometriosis and pelvic inflammatory disease are associated with low back pain [35], and women with pelvic pain often have increased pain sensitivity in other areas [36]. Dyspareunia has a similar etiology to CPP and is often associated with it. Our study found that dyspareunia was a significant risk factor for CPP (OR;95%CI:2.96 ; 1.75-4.99), with other studies showing a variable but high increase in the prevalence of CPP in dyspareunia patients [12-14]. In addition, psychogenic problems, including a history of abuse and emotional stress and post-traumatic stress disorder are common in both CPP and dyspareunia [37, 38]. In the study group, three or more miscarriages(OR;95 %CI:3.07;1.18-8.01), history of abdominal surgery(OR;

Table 3 The distribution of the median scores of those with and without chronic pelvic pain in the refugee and non-refugee groups in WHOQOL-BREF subdomains

WHOQOL-BREF	Chronic Pelvic Pain	z;p		
sub-domains	No	Yes		
Non-refugee Group				
Physical Health Median Score (min-max)	69.0(25.0-100.0)	63.0(38.0–94.0)	4.563;0.002	
Psychological Health Median Score (min-max)	63.0(13.0-100.0)	56.0(25.0-81.0)	4.804;0.01	
Social Relationships Median Score (min-max)	69.0(0.0-100.0)	62.5(19.0–94.0)	5.066;0.036	
Environmental Median Score (min-max)	63.0(25.0-100.0)	63.0(38-100.0)	4.881;0.015	
Refugee Group				
Physical Health Median Score (min-max)	63.0(13.0-100.0)	50.0(13.0-100.0)	5.198;<0.001	
Psychological Health Median Score (min-max)	56.0(19.0-88.0)	50.0(6.0-81.0)	6.729;<0.001	
Social Relationships Median Score (min-max)	69.0(6.0-100.0)	56.0(0.0-100.0)	6.720;<0.001	
Environmental Median Score (min-max)	56.0(6.0-88.0)	44.0(13.0-81.0)	6.423;<0.001	

95%CI:2.44;1.33–4.50), diarrhea(OR; 95%CI:2.01;1.07– 3.76), and urinary tract infection(OR; 95%CI:1.66; 1.02– 2.71). Similar results have been reported in the literature [15–17, 30, 38].

Anxiety can decrease pain threshold and tolerance, and increase pain response [39, 40]. Anxiety-induced muscle tension may lead to physical symptoms, creating a vicious cycle in which pain and anxiety exacerbate each other [41]. In our study, depression and stress were not found to be risk factors for CPP; anxiety was found to be a risk factor for CPP (OR;95%CI:1.17;1.10–1.24). In another study, depression (OR:2.8) and anxiety (OR:2.1) were found to be risk factors for CPP [17]. Although psychiatric comorbidity with CPP has been reported in the literature, there is no clear information on which psychiatric disorder is more associated with CPP. Notably, anxiety was found to be a more effective predictor of chronic pelvic pain than depression and stress in our study.

Chronic pain is a problem that significantly reduces an individual's quality of life. A study examining the mechanisms explaining the relationship between chronic pelvic pain and quality of life emphasized that illness-focused coping (such as guarding, resting, and asking for assistance) partially mediated the relationship between pain and physical quality of life. Catastrophizing and illnessfocused coping mediated the relationship between pain and mental quality of life [42]. In our study, the scores obtained from all WHOQOL-BREF subdomains (physical health, psychological health, social relationships, environment) were lower in women with CPP compared to those without CPP. It has been reported in the literature that the scores obtained from WHOQOL-BREF physical, psychological, and social relationships subdomains were lower in women with CPP, whereas no difference was found in the environment subdomain [34, 43]. Tripoli et al. reported that women with CPP had lower scores in the physical and psychological subdomains of WHOQOL-BREF [44]. Contrary to the literature, the scores obtained from the environmental subdomain of quality of life were also lower in women with CPP in this study. This finding suggests that factors such as negative environmental conditions and lack of access to health care may affect CPP. The importance of health services to improve the quality of life in chronic conditions is increasingly being emphasized as a means of alleviating pain and distress [45]. Our study suggests that chronic pelvic pain negatively affects life quality in all dimensions. Therefore, the psychological, physical, and social burden of CPP on women should be considered.

As this is the first study in the literature investigating CPP in refugee women, we think that it will be a reference for future studies. Limitations of our study include its cross-sectional design, which makes establishing causality less reliable, and the reliance on self-reported data through a questionnaire to assess chronic pelvic pain, which may introduce reporting bias. Although we found that refugee women are a risk group for chronic pelvic pain, this finding needs to be supported by clinical trials.

Conclusions

Refugee status independently contributes to the risk of developing CPP. This may be due to various factors associated with the refugee experience such as trauma or limited access to healthcare. Further studies are needed to investigate the underlying reasons why refugees are a risk group for CPP. Considering that CPP is a condition that reduces quality of life and is associated with anxiety, providing social and psychological support to refugee women may be beneficial in terms of coping with chronic pelvic pain. Targeted interventions to address CPP and its associated risk factors are needed, particularly in vulnerable refugee populations, to improve their overall quality of life. It may be beneficial to provide training in the diagnosis, assessment and management of CPP to health professionals working with refugee populations.

Supplementary Information

The online version contains supplementary material available at https://doi. org/10.1186/s12905-024-03348-w.

Supplementary Material 1

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Not applicable.

Author contributions

All authors contributed to the study conception and design. Material preparation and data collection were performed by ZD, Fİ, FÇ. Analysis were performed by ZD, DA, AÜ. The first draft of the manuscript was written by ZD and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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Data availability

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

All steps of the study conformed to the Declaration of Helsinki and approval (11/22.01.2019) was obtained from the ESOGU Non-Interventional Clinical Research Ethics Committee. The researchers were able to maintain and respect the privacy, confidentiality and wellbeing of the participants by not writing down the names or other identities of the participants. All data were used only for the purposes of this study. Written informed consent was obtained from all participants.

Competing interests

The authors declare no competing interests.

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