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Role of resilience in general health and mental wellbeing among Syrian and Palestinian refugees in Lebanon: a mixed methods study

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Abstract

Background This pilot study explored the challenges experienced by Syrian and Palestinian refugees in Lebanon and the role of resilience in general health and mental wellbeing.

Methods This was a mixed methods cross-sectional study conducted in the cities of Beirut and Tripoli in Lebanon. Two hundred Syrian and Palestinian refugees were surveyed and 20 of them participated in in-depth interviews. Descriptive statistics summarized the demographic characteristics, depression, anxiety, resilience, somatic symptoms, and technological use. Associations between resilience and depression, anxiety, and somatic symptoms were measured by calculating Pearson correlation coefficients and Spearman's rank correlation coefficients. Inductive and deductive coding and analysis was used in qualitative data.

Results Refugees' migration journey was characterized by fear, lack of safety, and lack of food. In Lebanon, they experienced discrimination, racism, and challenges in meeting necessities. The three most important challenges experienced by refugees were securing electricity (40.8%), getting medicines (41.6%), and accessing medical care (37%). The mean resilience score was 68.20 ± 19.35. Palestinian refugees had higher mean resilience scores (77.01 ± 17.4) compared to Syrian (61.34 ± 19.45) and Syrian Palestinian (61.14 ± 14.69) refugees. Majority of participants had high levels of somatic complaints with a mean PHQ-15 score of 14.29 ± 6.77. The median GAD-7 score was 14.7 [11.0, 20.0], with the majority of participants ($n = 161$, 80.5%) reporting moderate or severe anxiety. The mean PHQ-9 score was 15.38 ± 7.33, with most of the participants ($n = 121$, 60.5%) reporting moderately severe or severe major depression symptoms. Higher resilience levels were associated with lower anxiety, depression, and somatic levels. Religion, friends, family, and good communication were reported as helping refugees cope with challenges.

Conclusion Resilience impacts physical and mental health. Participants with high resilience were found to have better mental and physical health outcomes. Those with higher resilience also reported stronger ties and use of these factors to overcome their challenges.

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Introduction

Lebanon hosts an estimated 1.5 million Syrian refugees and 489,000 Palestinian refugees [1]. Both Syrian and Palestinian refugees experience poor conditions including overcrowding, poor housing, unemployment, discrimination and information precarity [1–3]. The Lebanese host communities are equally affected due to the ongoing national economic downturn exacerbated by the COVID – 19 pandemic, Beirut blast, the 2023 Israel-Gaza war and the 2024 Israeli attacks of Lebanon [2].

When the war in Syria broke in 2011, of the three main receiving countries in the Middle East: Lebanon, Jordan, and Turkey, Lebanon experienced the fastest growth of Syrian refugees. Since 2015, Syrians are required to have a visa to stay in Lebanon, register with the General Security Office (GSO), and get a legal permit costing 200 USD annually. As a result, about 60% of Syrian refugees lost their legal status [4] and experience progressive decline in protection, livelihoods and health [4,5,6].

The majority of Palestinian refugees in Lebanon live in refugee camps or informal settlements, separated from the Lebanese society. They have severe restrictions on accessing the labor market as well as social and health services. They struggle to pay rent, electricity, and water [4, 7, 8]. Palestinian refugees from Syria arrived in Lebanon from 2011, with many not having legal status [6].

Resilience

Resilience represents the ability to cope with hard, stressful and traumatic situations while restoring normal functioning [9]. Within the framework of war and trauma, resilience is defined as personality traits that help to protect against psychological disorders resulting from exposure to terrifying incidents, such as mass violence, and being able to bounce back and positively adapt in the face of challenging experiences [10–12]. Studies have found that factors aiding refugee resilience include family and social support, religion or spirituality, personal qualities, attitudes, belief systems and the meaning that refugees attribute to their experiences [13–15]. A study among Syrian adult refugees in Jordan found that place of residence, educational level, employment status, and monthly income were significantly associated with resilience scores [16]. Supportive relationships was a resilience protective factor and highly correlated with less depressive symptoms among Syrian refugee children in Jordan [17].

The objectives of this study were to: (1) identify the most significant challenges of survival for Syrian and Palestinian refugees in Lebanon; (2) analyze the role of resilience and its influence on mental wellbeing and general health among Syrian and Palestinian refugees, and (3) explore how refugees utilize information and communication technologies (ICTs) as a coping mechanism.

Methods

Design and study setting

This was a cross-sectional mixed methods pilot study (quantitative surveys and qualitative in-depth interviews). The study was conducted from July to September 2023 at the facilities of Women's Programs Association (WPA), a non-governmental organization (NGO), in the cities of Beirut and Tripoli. WPA provides social services to the Palestinian and Syrian refugee communities in Lebanon.

We estimated the sample size using an alpha of 0.05, power of 0.8, and a moderate correlation of 0.3, resulting in 193 participants, rounded to 200. The study participants were Syrian and Palestinian refugees from settlements in Beirut and Tripoli, receiving services from WPA. A systematic random sampling method (every third person in the list) was used to choose 200 potential study participants, 100 in Tripoli (from 3800 beneficiaries) and 100 in Beirut (from 1610 beneficiaries). Two WPA staff contacted and communicated the study objective to potential participants and made appointments to meet at the WPA facility. All the 200 participants contacted agreed to take part in the study.

Data collection

Survey tools and study guide

For the quantitative component, we used a structured questionnaire translated into Arabic. The survey questionnaire (Appendix 1a&b) was divided into two sections: A-C, developed based on previous studies by research team members DJ [3] and JU. They collected basic sociodemographic characteristics, challenges of survival in Lebanon, and use of ICTs. Sections D-G were validated tools to measure health status (somatization)- Patient Health Questionnaire 15-Item Somatic Symptom Severity Scale (PHQ-15), anxiety (Generalized Anxiety Disorder (GLAD 7), depression (PHQ-9- Questionnaire for Depression), and resilience (Connor-Davidson Resilience Scale 25 (CD-RISC-25). The questionnaire was entered in Kobo Toolbox.

A study guide (Appendix 2a&b) was used for the qualitative component to complement the quantitative survey questions. Through in-depth interviews, we explored participants' perceptions and experiences of their migration journey and life in Lebanon. Every 10th participant in the quantitative surveys was invited to stay for in-depth interviews. A total of 20 in-depth interviews were conducted, audio-recorded, with each lasting 30 to 60 min.

Each study participant was taken to a private room at the WPA facilities and read a consent form (Appendix 3) by the research assistant. They were informed that participation is voluntary and reassured of their confidentiality.

Table 1 Demographic and socio-economic information

	***N* (%)**
Age	39.72 (±8.55)
Sex designated at birth (*N* = 198)	
Female	104 (52.5)
Male	94 (47.5)
Marital status (*N* = 199)	
Married	151 (75.9)
Single	22 (11.1)
Divorced/separated/widowed	26 (13.1)
Have children (*N* = 184)	
Yes	165 (89.7)
No	19 (10.3)
Median number of children	3.5 [2 to 5]
Mean no of children	3.79 ± 1.90
Nationality (*N* = 200)	
Syrian	76 (38.0)
Palestinian	88 (44.0)
Syrian Palestinian	36 (18.0)
Immigration status (*N* = 200)	
Refugee registered with UNHCR	73 (36.5)
Refugee registered with UNRWA	113 (56.5)
Refugee but no formal papers	6 (3.0)
Asylum seeker	1 (0.5)
Others	7 (3.5)
Education (*N* = 200)	
Illiterate	15 (7.5)
Elementary	71 (35.5)
Intermediate	55 (27.5)
Secondary/vocational	30 (15.0)
University	29 (14.5)
Current residence (*N* = 200)	N (%)
Rented apartment	158 (79.0)
Shared apartment	15 (7.5)
My own place	15 (7.5)
Others	12 (6.0)
Employment status (*N* = 200)	
Full time	44 (22.0)
Part-time	22 (11.0)
Self-employed	37 (18.5)
Don't work	97 (48.5)
Family income (*N* = 137)	
Mean	USD 205.07 ± 163.88
median	USD 150 [98,265]
Other income sources (*N* = 127)	
Family	23 (18.1)
United Nations (UN) aids	82 (64.6)
others	5 (4)
United Nations Relief and Works Agency (UNRWA)	17 (13.4)

Those who agreed to participate gave verbal consent and had the option to take a copy of the form.

Data management and analysis

Quantitative analysis was done using SPSS version 26. Descriptive statistics were performed to summarize the demographic characteristics and major outcomes of the study, including depression (PHQ9), anxiety (GAD7), resilience (CD-RISC-25), somatic symptoms (PHQ15), and technological use. Central tendency calculations were measured (mean, median). Median imputation was used to handle less than 10% missing values for GAD7, PHQ9, and CD-RISC-25 score measures. For PHQ15, we had 120 participants who had one to three missing items. For example, male participants did not respond to the menstrual cycle question. We used the prorated score rather than the sum- which is (partial raw score * 15/(15 – missing items)).

To examine the associations between resilience and mental illness (depression or anxiety) and somatic symptoms, Pearson correlation coefficients were employed, assessing the relationships among the PHQ9, Resilience Score, and Health Well-being. Since these variables were normally distributed, Spearman's rank correlation coefficients were calculated to assess the strength and direction of the relationship between GAD7 and Resilience Score, as GAD7 was skewed. One-way ANOVA was used to examine the relationship between resilience, depression, anxiety, and somatic symptoms on the one hand and the nationality of participants on the other hand. Post hoc pairwise comparisons were performed using the Bonferroni adjustment.

In-depth interviews were transcribed and translated from Arabic to English. Two researchers (MAO and MA), read the typed transcripts separately for accuracy and completeness, developed initial codes individually and final codes were chosen via consensus. The typed transcripts were imported into NVivo 14, a qualitative data analysis software, for coding and analysis. Data was continuously reviewed for emerging patterns, themes, and relationships.

Results

Demographics information

Among the 200 study participants (Table 1), 38% ($n = 76$) identified as Syrian, 44% ($n = 88$) Palestinian, and 18% ($n = 36$) as Syrian Palestinian. The mean age of participants was 39.72 years old).

Challenges

The migration journey for Syrian and Syrian Palestinian refugees was characterized with fear, lack of safety, food and water. Road blocks and long wait times at the

Table 2 Challenges currently faced in Lebanon*

	There is no problem	Rather serious	Very and extremely serious
Getting medicine (*N* = 193)	27 (18.8)	33 (16.8)	127 (64.4)
Accessing medical care (*N* = 197)	44 (22.3)	28 (14.2)	125 (63.5)
Securing electricity (*N* = 196)	41 (20.9)	39 (19.9)	106 (59.2)
Feeling unsafe or unprotected (*N* = 193)	72 (37.3)	19 (9.8)	102 (52.8)
Paying rent (*N* = 197)	72 (36.5)	28 (14.2)	97 (49.2)
Problem with having clothes, shoes, bedding, or blankets (*N* = 197)	54 (27.4)	48(24.4)	95 (48.2)
Not getting enough support from people in your general community (*N* = 197)	61 (31.0)	46 (23.4)	90 (45.7)
Securing transport (*N* = 197)	64 (32.5)	44 (22.3)	89 (45.2)
Taking care of family members (*N* = 197)	89 (45.2)	24 (12.2)	84 (42.7)
Securing water (*N* = 198)	77 (38.9)	37 (18.7)	84 (42.4)
Threatened with eviction for non-rent payment (*N* = 196)	93 (47.4)	25 (12.8)	78 (39.8)
Securing internet (*N* = 198)	98 (49.5)	25 (12.6)	75 (37.9)
Securing stable housing (*N* = 199)	109 (54.8)	18 (9.0)	72 (36.2)

* **Sorted by very and extremely serious challenge**

Table 3 Mental and physical health scores

PHQ-9 (*N* = 200)	*n* (%)
No depression	19(9.5)
Minimal symptoms	30 (15.0)
Mild depression	30 (15.0)
Moderately severe depression	52 (26.0)
Severe major depression	69 (34.5)
Mean	15.38 ± 7.33
GAD7 (*N* = 200)	n(%)
No anxiety	18 (9.0)
Mild anxiety	21 (10.5)
Moderate anxiety	39(19.5)
Severe anxiety	122 (61.0)
Median	14.7 [11.0, 20.0]
PHQ15 (*N* = 200)	n(%)
No somatization	19(9.5)
Low somatic symptoms severity	27(13.4)
Medium somatic symptoms severity	57(28.4)
High somatic symptoms severity	97(48.5)
Mean	14.29 ± 6.77

border made it harder to reach Lebanon. One participant described their experience,

> *"There was no water no food, there was nothing, every time we tried to escape, they would put us back, the army would say you cannot leave until the kidnapped people come back"- Syrian Palestinian male refugee.*

Once in Lebanon, the three most important challenges noted by refugees as very and extremely serious (Table 2) were getting medicines (64.4%), accessing medical care (63.5%), and securing electricity (59.2%). Refugees complained of discrimination and racism from Lebanese people leading to difficulties in finding jobs and paying for their basic needs.

> *"They tell me that my degrees are impressive, but that the problem is that I am Palestinian. So, the problem is my nationality."– Palestinian male refugee.*

Mental and physical health scores

The mean PHQ-9 score was 15.38 ± 7.33, indicating that the participants had moderate levels of depression on average (Table 3). Most of the participants (*n* = 121, 60.5%) reported moderately severe or severe major depression symptoms. The median GAD-7 score was 14.7 [11.0, 20.0], indicating that the participants had moderate levels of anxiety on average. The majority of participants (*n* = 161, 80.5%) reported moderate or severe anxiety. The mean PHQ-15 score was 14.29 ± 6.77, indicating that the participants had high levels of somatic complaints on average. Almost all reported medium to severe somatic symptoms (*n* = 69, 86.3%).

Resilience, mental and physical health

The mean resilience (CD-RISC-25) score was 68.20 ± 19.35. Participants who had a resilience score between 14 and 33 were more likely to give up on overcoming their challenges, accept their fate and deem themselves unlucky,

> *"I tell my mother that I have no luck. I am unlucky and unfortunate. I am upset for my children.... Every mother wants her children to have a life."- Syrian female refugee.*

Inferential statistics examined the association between resilience with mental and physical health (Table 4). The

Table 4 Bivariate correlation between resilience and mental and physical health

	Resilience	GAD7	PHQ9	PHQ15
Resilience (*N* = 200)	1.000	-0.295 *	-0.478 *	-0.463*
GAD 7 (*N* = 200)	-0.295 *	1.000	0.783 *	0.642 *
PHQ9 (*N* = 200)	-0.478 *	0.783 *	1.000	0.585*
PHQ15 (*N* = 200)	-0.463*	0.642 *	0.585 *	1.000

Pearson correlation between resilience score and PHQ-9 was −0.463 ($p < 0.001$), indicating a significant negative association, meaning that higher levels of resilience were associated with lower levels of depression. The Spearman's rank correlation coefficient between resilience score and GAD7 was −0.295 ($p < 0.001$), indicating a significant negative association. Higher levels of resilience were associated with lower levels of anxiety. The Pearson correlation between resilience score and PHQ-15 was −0.463 ($p = 0.000$), indicating a significant negative association. Higher levels of resilience were associated with lower levels of somatization. However, PHQ-15 was positively associated with PHQ-9 and GAD-7, with higher levels of somatic symptoms associated with higher levels of anxiety or depression.

The nationality of the participants was associated with PHQ-9, GAD-7, and PHQ-15 (Table 5). Palestinians had the highest resilience (77.01 ± 17.4) as compared to Syrians (61.34 ± 19.45) and Syrian Palestinians (61,14 ± 14.69). Palestinians had the lowest scores on depression (13.35 ± 7.40) as compared to Syrians (16.30 ± 7.05) and Syrian Palestinians (18.39 ± 6.49). Palestinians had lower anxiety scores (13.48 ± 6.54) than Syrian Palestinians (16.3 ± 0.402).

During in-depth interviews, more than half of the participants used the word 'tired' to describe their mental and physical health, mainly due to their current situation,

> *"My health is tired, it's getting worse slowly, and mentally I am always distracted, my thoughts are always distracted. Circumstances are difficult in Lebanon and even more than difficult, nothing is clear…doors are closed and you cannot do anything about it."- Syrian Palestinian male refugee.*

Participants also reported that they were struggling to overcome their challenges and verbalized how anxious and depressed they were, as one participant expressed below,

> *"I feel completely helpless. I can't think clearly. I haven't been feeling well. In the past 20 days or so, I shiver whenever I hear of a problem. It's like I'm drugged. My head feels unbalanced."- Syrian female refugee.*

Coping with the challenges

Religion

During qualitative interviews, all participants reported strong faith in God (Allah), which made them feel hopeful and able to overcome challenges. Regardless of their resilience scores, many participants stated that what was happening to them is God's doing. The religion of Islam is omnipresent and seems to bring peace to the refugees, both Syrians and Palestinians.

> *"I believe in God. I pray. As God said, pray for me and I shall answer. So, when I pray, I ask God to help me and my family stay in good health and avoid needing doctors and hospitals. I ask him to help me travel to a country where I can live in comfort. I always pray to God. I believe in him."- Syrian male refugee.*

Friends and family

Friends and family brought relief and support to the refugees in times of need. However, those with lower resilience scores (scores below 50) had revealed more conflicts with family compared to those with higher resilience (scores more than 75) who reported strong family ties.

> *"When I meet friends and spend time with them, I feel good. Family and neighbor gatherings also make me happy."- Syrian Female.*

Table 5 Associations between nationality and resilience, mental and physical health

	Syrian	Palestinian	Syrian Palestinian	*P*-value ANOVA	F-statistic	Post hoc differences (Bonferroni)
Resilience	61.34 ± 19.45[a]	77.01 ± 17.4 [a, b]	61.14 ± 14.69 [b]	0.000	19.281	Palestinian > Syrian, Syrian-Palestinian
PHQ9	16.30 ± 7.05 [a]	13.35 ± 7.40 [a, b]	18.39 ± 6.49 [b]	0.001	7.438	Syrian-Palestinian > Palestinian; Syrian more than Palestinian
GAD7	15.40 ± 5.40	13.48 ± 6.54 [a]	16.3 ± 0.402 [a]	0.020	3.975	Syrian-Palestinian > Palestinian
PHQ15	14.53 ± 7.31	13.7 ± 6.64	15.17 ± 5.84	0.507	0.681	No significant differences

Post hoc pairwise comparisons were performed using the Bonferroni adjustment. Significant group differences are indicated with superscript letters denoting groups that differ significantly

Good communication

Participants with the highest resilience scores (more than 80) said that communicating calmly with others helped them resolve issues and come up with a solution to them. It also allowed them to become stronger and better able to control other challenges.

> *"The challenges I faced push me to push my kids forward and change the status quo and to push for education and security."– Palestinian female.*

Role of information communication and technology (ICT)

On the role of ICTs pre-migration, 42.6% of the participants sometimes/often used their cell phones to help them decide to leave or plan their trip. During their migration journey, about one third of participants (55 out of 142, 38.5%) had minimal access to cell phones. However, most participants had access to cell phones post-migration (163, 81.9%).

> *"But sometimes [talking with relatives] make things better. 'Be patient. Take care of yourself. Take care of your health.' A simple word can do a lot of good"- Syrian Palestinian male.*

There were significant findings of using cell phones for housing, connecting with support groups and help with the transition (Supplement File A-Table 6).

Discussion

Although there are existing frameworks that have explored the complexity of resilience and its definition among refugees [18], resilience of Syrian and Palestinian refugees in Lebanon and other Middle Eastern countries in relation to general and mental health have not been sufficiently examined. Findings from our pilot study compliments and adds to the growing body of literature on resilience among refugees and lays ground for potential larger follow up studies in the region.

A recent study to understand Syrian migration in Lebanon revealed that their safety and survival was compromised due to weak public institutions, insufficient aid, and un-equal distribution of assistance [19]. Complimenting these findings, refugees in our study faced discrimination, lack of employment and struggled to meet their daily basic needs after resettling in Lebanon. Compared to Syrian refugees, Palestinians have been refugees in Lebanon for much longer and subjected to lots of trauma and displacement throughout their lives. They may have adapted and made resilience and other coping mechanisms fundamental to their survival. Closely similar to our findings, a study conducted in Lebanon found that Palestinian males and females show greater resilience when compared to the Syrian sample of both genders [20].

Other studies done outside of Lebanon on adult Syrian refugee resilience are also consistent with our findings [21, 22]. A study with Syrian youth refugees in Norway found that resilience was associated with better quality of life [23]. Factors such as individual and/or community resilience and social support have been highlighted as key potential mediators between forced displacement experience and subsequent mental health impact and good health outcomes [24, 25]. Among adolescent Syrians in Lebanon, previous research highlighted supportive relationships, communal activities and spaces, memories of home, employment, and shared environments as integral elements to their personal adaptation [26].

Convergent with our findings, a study of a sample of adult and Muslim Syrian and Palestinian refugees in Jordan, found that religious coping contributed and played a unique role in psychological resilience [27]. Other studies although conducted in high income countries, have also shown that religion, spirituality and faith serve as coping mechanisms and support for refugees, contributing to their mental wellbeing and perception of illness [28, 29].

We found that following forced displacement, the cellphone played a role in connecting refugees with others and for support. The low access to cell phones during pre-migration among Syrian refugees could have been because the Syrian government at the time was suppressing communication. For refugee communities, engaging with the environments that they create and share is an important facet of resilience and occurs through group gatherings, hobbies, and online communication [26].

Our findings support other studies showing that resilience occurs in a multilevel scenario of individual, community, and societal conditions that can facilitate or hinder refugees' ability to bounce back from the trauma(s) they have experienced [30]. It is therefore necessary to consider culturally sensitive strength-based interventions that focus on people's resilience and aim to increase factors such as personal strengths, positive emotions, positive relations, and self-esteem by identifying resources available at all these levels.

Conclusion

Although not many studies have focused on resilience among Syrian and Palestinian refugees in Lebanon, the few conducted in other countries are consistent with our findings. Our study suggests that resilience impacts physical and mental health as participants with high resilience were found to have better mental and physical health outcomes. Refugees used factors such as religion, family and community ties, and communal activities to overcome their challenges. Participants with higher resilience

reported stronger ties and use of these factors to overcome their challenges.

Study limitations

The study was limited by its small sample size, focusing solely on refugees outside of camps receiving services at WPA which is not representative of all refugees. This being a cross-sectional study, we could only establish associations but not causality. The study relied on self-reporting which may have led individuals to portray their experiences in a certain light. This narrow scope could have led to overestimation of the measures. However, this being a pilot study, its mixed design provided insight on the role of resilience in physical and mental health among refugees.

Supplementary Information

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Supplementary Material 1

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Author contributions

JU and MAO conceived and led the study design. JU coordinated data collection in Lebanon. RG collected data and reviewed drafts and final versions of manuscript. MAO and MA led in writing drafts of manuscript. JA led quantitative data analysis and prepared Tables 1, 2, 3, 4, 5 and 6 (see supplemental file A), RG reviewed drafts and final versions of the manuscript, and DJ reviewed drafts and final versions of the manuscript. All authors reviewed and approved the final manuscript.

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Data availability

Provision of this study data has been restricted due to the vulnerability of refugees and the fact that they were reassured that their data will not be shared outside the study team. However, with permission from American University of Beirut Institutional Review Board, some parts of data can be made available on request from the first author, Dr Jinan Usta.

Declarations

Ethics approval and consent to participate

This study was approved by the Boston Medical Center and Boston University Medical Campus Institutional Review Board (IRB) and American University of Beirut IRB. All study participants gave verbal consent.

Consent for publication

Our manuscript does not contain any individual person's data in any form.

Competing interests

The authors declare no competing interests.

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