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ORIGINAL ARTICLE / ÖZGÜN MAKALE

# Evaluation of Syrian Refugees from the Perspective of Gynecology and Obstetrics in a Border Region: 8 Years of Experience

## Suriye Mültecilerinin Jinekoloji ve Obstetrik Açısından Değerlendirilmesi: Sınır Bölgesinde 8 Yıllık Deneyim

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## Abstract

**Objective:** This retrospective study aimed to evaluate the gynaecological and obstetric aspects of Syrian refugees in a border region over 8 years, with a specific focus on healthcare utilization patterns in gynecology and obstetrics. The objective was to ascertain the impact of Syrian refugees on healthcare services in Sanliurfa province, comparing their experiences with Turkish patients, particularly in the field of gynaecology and obstetrics practice.

**Materials and Methods:** The study included female patients over 18 seeking medical care at gynecology and obstetrics outpatient clinics and emergency departments in the specified border region between 2011 and 2019. Electronic medical records were comprehensively reviewed. Statistical analyses were conducted using IBM SPSS Statistics 26.0, employing descriptive statistics and comparative analyses to assess differences within the study population.

**Results:** The study focused on 1,557,878 patients, with 95.2% being Turkish and 4.8% Syrian refugees. Significant differences were observed in demographic characteristics, hospitalization rates, and reasons for hospital applications, particularly in pregnancy-related conditions, highlighting variations in healthcare utilization patterns between Turkish and Syrian refugee patients.

**Conclusion:** The findings underscore the multifaceted challenges posed by refugee patients on health systems, necessitating a comprehensive and compassionate approach. Innovative strategies are essential to address the diverse needs arising from language barriers, cultural differences, and mental health concerns. This study provides valuable insights for governments, policymakers, and healthcare providers to improve service delivery, resource allocation, and equitable healthcare for both host and refugee populations.

**Keywords**: Gynecology, Obstetrics, Outpatients, Refugees, Turkiye

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**Öz**

**Amaç:** Bu retrospektif çalışmanın amacı, sınır bölgesinde yaşayan Suriye mültecilerinin jinekolojik ve obstetrik yönlerini 8 yıllık bir süreçte değerlendirmek ve özellikle jinekoloji ve obstetri alanındaki sağlık hizmeti kullanım desenlerini incelemektir. Çalışmanın hedefi, Suriye mültecilerinin sağlık hizmetlerine etkisini ortaya koymak ve Şanlıurfa ilindeki deneyimlerini Türk hastalar ile karşılaştırmak, özellikle kadın hastalıkları ve doğum uygulamaları açısından farklılıkları değerlendirmektir.

**Gereç ve Yöntem:** Çalışmaya, 2011 ile 2019 tarihleri arasında sınır bölgesindeki kadın hastalıkları ve doğum poliklinikleri ile acil servislerine başvuran 18 yaş üzeri kadın hastalar dahil edilmiştir. Elektronik tıbbi kayıtlar kapsamlı şekilde incelenmiştir. İstatistiksel analizler IBM SPSS Statistics 26.0 programı ile yapılmış, tanımlayıcı istatistikler ve karşılaştırmalı analizler kullanılarak çalışma popülasyonundaki farklılıklar değerlendirilmiştir.

**Bulgular:** Çalışma kapsamında toplam 1.557.878 hasta incelenmiş, bunların %95,2'si Türk, %4,8'i ise Suriye mültecisi olarak saptanmıştır. Demografik özellikler, hastaneye yatış oranları ve başvuru nedenleri arasında anlamlı farklılıklar bulunmuştur. Özellikle gebelikle ilişkili durumlarda belirgin farklılıklar gözlenmiş, Türk ve Suriyeli mülteci hastalar arasında sağlık hizmeti kullanım kalıplarının değişkenlik gösterdiği belirlenmiştir.

**Sonuç:** Bulgular, mülteci hastaların sağlık sistemleri üzerinde oluşturduğu çok yönlü zorlukların altını çizmektedir. Dil engeli, kültürel farklılıklar ve ruh sağlığı sorunlarından kaynaklanan çeşitli ihtiyaçların karşılanması için kapsamlı ve insancıl bir yaklaşım gereklidir. Yenilikçi stratejiler, hem ev sahibi hem de mülteci topluluklar için hizmet sunumunu, kaynak tahsisini ve adil sağlık hizmetlerini geliştirmek açısından önemlidir. Bu çalışma; hükümetlere, politika yapıcılara ve sağlık hizmeti sunucularına hizmet kalitesini artırmaya yönelik değerli bilgiler sunmaktadır.

**Anahtar Kelimeler:** Jinekoloji, Obstetri, Ayaktan hastalar, Mülteciler, Türkiye

## INTRODUCTION

Wars give rise to global health challenges (1). The most significant refugee and asylum predicament impacting the entire world post-Second World War originates from the Syrian civil war (2). Turkiye has been notably affected by this surge in migration. The 'open door policy' directive was enacted in Turkiye in 1994. The status of being a refugee or asylum seeker has been replaced by the designation of a guest (3). Individuals whose refugee applications are pending are referred to as asylum seekers (4). In July 2001, the United Nations High Commissioner for Refugees (UNHCR) conferred 'international protection status' upon refugees (5). Under this resolution, nations hosting refugees are obligated to fulfil fundamental needs like shelter, sustenance, healthcare, and education for refugees and asylum seekers. Turkiye has accorded 'temporary protection status' to all asylum seekers and refugees. According to the UNHCR report dated April 30, 2019, out of the 3.9 million refugees residing in Turkiye, 3.6 million are of Syrian origin, 170,000 are Afghan, 142,000 are Iraqi, 39,000 are Iranian, and 5,700 are Somali (6). The Ministry of Internal Affairs reported the number of Syrian refugees as 3,643,870 as of August 2019. While the population of Sanliurfa province, which has the longest border with Syria, is 2,035,809, the refugee count is documented as 429,735 (21.1%) (7). In Turkiye, refugees have commenced residing in camps and informal settlements (8). Refugees encounter numerous challenges, with language barriers being the foremost issue. Factors such as difficulties in accessing healthcare facilities, substandard living conditions, low-income levels, inadequate nutrition, language barriers, hygiene concerns, and limited education levels have repercussions on both individual and public health (9). The language barrier in healthcare facilities leads to communication challenges between healthcare professionals and patients, particularly in physician-patient interactions. This, in turn, results in patients

not receiving adequate health support, a decline in the workforce, increased costs, and diagnostic challenges. The objective of this study is to ascertain the impact of Syrian refugees on healthcare services in Sanliurfa province, which presently boasts the highest birth rate in the country, and to compare the healthcare utilization patterns between refugee and Turkish patients, specifically from the perspective of gynaecology and obstetrics practice.

## MATERIALS AND METHODS

This retrospective study aimed to comprehensively evaluate the gynaecological and obstetric aspects of Syrian refugees in a border region over an 8-year period. The research design involved an extensive review of medical records, focusing on gynaecological and obstetric data, to derive insights into the health status and trends among Syrian refugee women. The study included female patients over the age of 18 who sought medical care at gynaecology and obstetrics outpatient clinics and the obstetrics emergency department in the specified border region between, 2011 and 2019. The primary focus was on Syrian refugees within this population. Since it was evaluated on an application-based basis, repeated outpatient examinations were included in the study. Patients with missing data were excluded from the study. Exclusions from the study encompassed male patients, individuals below 18 years old, and inpatient consultations.

Data sources consisted of electronic medical records from Sanliurfa Gynaecology and Obstetrics Hospital and Sanliurfa Training and Research Hospital. Institutional permission was obtained to access and analyse the data. The study also received ethical approval from the Harran University Ethics Committee (No: 74059997-050.04.04).

Communication with patients primarily relied on translators on duty due to language barriers. In cases where translators were insufficient, communication was established with other patients or patient relatives proficient in the language. The collected data encompassed various variables, including patient demographics, complaints at admission, method of application, referral rates, delivery methods, elective surgeries, and the number of admissions to regular and perinatology wards. The diagnoses, treatments, and outcomes of the patients were compared.

Statistical analysis was conducted using the IBM SPSS Statistics 26.0 for Windows (Statistical Package for Social Sciences). Descriptive statistics were employed to present continuous variables as mean ± standard deviation, while categorical variables were expressed as percentages. Comparative analyses were performed to assess differences between various subgroups within the study population. A p-value $< 0.05$ was considered statistically significant. The study design and analysis aimed to provide a comprehensive understanding of the gynaecological and obstetric experiences of Syrian refugees in the specified border region, offering valuable insights for healthcare planning and service delivery.

## RESULTS

Between 2011 and 2019, a total of 1,664,682 women presented to Şanlıurfa Training and Research Hospital and Şanlıurfa Gynaecology and Obstetrics Hospital, encompassing both outpatient and obstetric emergency admissions. After excluding incomplete records, 1,557,878 patients were included in the final analysis. Of these, 95.2% (n = 1,482,800) were Turkish citizens and 4.8% (n = 75,078) were Syrian refugees.

The comparative demographic analysis revealed statistically significant differences across nearly all variables ($p < 0.001$). The majority of both Turkish and Syrian refugee patients were aged 18–30 years (38.7% and 41.2%, respectively) or 30–40 years (27.4% and 30.8%). The distribution of parity indicated that multiparity was more common among refugees (85.1%) than Turkish women (80.4%, $p < 0.001$). Regarding BMI, while most patients in both groups were within the 20–30 kg/m² range, underweight cases (BMI < 20 kg/m²) were almost twice as frequent among refugees (8.5%) as among Turkish patients (4.9%, $p < 0.001$).

Educational status showed a clear disparity: illiteracy was identified in 21.7% of refugees versus 14.6% of Turkish patients ($p < 0.001$). Unemployment was prevalent in both groups but higher among refugees (92.8% vs 86.3%, $p < 0.001$).

Household income below the national minimum wage was significantly more common

**Table 1.** Demographic features of Turkish patients and Syrian refugee patients

| Variables | Turkish patients (n=1,482,800) n | % | Refugee patients (n=75,078) n | % | Total (n=1,557,878) | p-value |
|---|---|---|---|---|---|---|
| Age | | | | | | <0.001* |
| 18–30 | 573,843 | 38.7 | 30,932 | 41.2 | 604,775 | |
| 30–40 | 406,287 | 27.4 | 23,124 | 30.8 | 429,411 | |
| 40–50 | 320,285 | 21.6 | 16,742 | 22.3 | 337,027 | |
| >50 | 182,385 | 12.3 | 4,280 | 5.7 | 186,665 | |
| Parity | | | | | | <0.001* |
| Nulliparous women | 290,628 | 19.6 | 11,187 | 14.9 | 301,815 | |
| Multiparous women | 1,192,172 | 80.4 | 63,891 | 85.1 | 1,256,063 | |
| Body Mass Index (kg/m²) | | | | | | <0.001* |
| <20 | 72,657 | 4.9 | 6,382 | 8.5 | 79,039 | |
| 20 to <25 | 647,983 | 43.7 | 37,088 | 49.4 | 685,071 | |
| 25 to <30 | 615,362 | 41.5 | 25,677 | 34.2 | 641,039 | |
| >30 | 146,798 | 9.9 | 5,931 | 7.9 | 152,729 | |
| Education level | | | | | | <0.001* |
| Illiterate | 216,488 | 14.6 | 16,292 | 21.7 | 232,780 | |
| Literate | 1,266,312 | 85.4 | 58,786 | 78.3 | 1,325,098 | |
| Employment status | | | | | | <0.001* |
| Unemployed | 1,279,656 | 86.3 | 69,672 | 92.8 | 1,349,328 | |
| Worker | 203,144 | 13.7 | 5,406 | 7.2 | 208,550 | |
| Marriage status | | | | | | <0.001* |
| Single | 481,910 | 32.5 | 18,544 | 24.7 | 500,454 | |
| Religious marriage | 398,873 | 26.9 | 47,900 | 63.8 | 446,773 | |
| Civil marriage | 602,017 | 40.6 | 8,634 | 11.5 | 610,651 | |
| Total household income | | | | | | <0.001* |
| ≤ Minimum wage | 1,012,752 | 68.3 | 57,360 | 76.4 | 1,070,112 | |
| > Minimum wage | 470,048 | 31.7 | 17,718 | 23.6 | 487,766 | |
| Smoking status | | | | | | <0.001* |
| Non-smoker | 1,233,690 | 83.2 | 67,195 | 89.5 | 1,300,885 | |
| Smoker | 249,110 | 16.8 | 7,883 | 10.5 | 256,993 | |

* $p < 0.05$ indicates statistically significant difference (Chi-square test)

among refugees (76.4% vs 68.3%, $p < 0.001$). A similar trend was noted for marital status, where civil marriage predominated among Turkish patients (40.6%), whereas religious marriage was markedly higher among refugees (63.8%, $p < 0.001$). Finally, smoking prevalence was significantly lower in the refugee group (10.5%) than in Turkish patients (16.8%, $p < 0.001$). Collectively, these data demonstrate that refugee women represent a younger, less educated, and socio-economically more vulnerable population (Table 1).

Pregnancy-related conditions were the leading cause of hospital presentation, observed in 41.1% of Turkish and 52.9% of refugee patients, showing a highly significant difference ($p < 0.001$). Benign gynaecological disorders were almost twice as common among Turkish women (22.8%) as among refugees (13.1%, $p < 0.001$). Furthermore, menstrual-cycle-related complaints differed signifi-

**Table 2.** Reasons for applying to hospital

| | Turkish patients | | Refugee patients | | |
|---|---|---|---|---|---|
| | *n* | *%* | *n* | *%* | *p-value* |
| Pregnancy-related conditions | 608,935 | 41.1% | 39702 | 52.9% | <0,001 |
| Benign gynaecological conditions | 338,133 | 22.8% | 9869 | 13.1% | <0,001 |
| Urogenital system infections | 261,462 | 17.6% | 13658 | 18.2% | >0,05 |
| Menstrual cycle disorders | 161,234 | 10.8% | 4181 | 5.6% | <0,001 |
| Infertility | 57387 | 3.9% | 2815 | 3.7% | >0,05 |
| Menopausal conditions | 17,266 | 1.2% | 792 | 1.1% | >0,05 |
| Other | 38,383 | 2.6% | 4061 | 5.4% | <0,001 |
| Total | 1482800 | 100.0 | 75078 | 100.0 | |

cantly between the two cohorts ($p < 0.001$). These results indicate a higher proportion of obstetric, rather than gynaecologic, presentations among the refugee population (Table 2).

A detailed comparison of service utilization revealed significant discrepancies in access patterns. Turkish patients predominantly applied to outpatient clinics (86.3%) compared with refugees (79.3%, $p < 0.001$). In contrast, obstetric emergency department visits and hospitalizations were substantially higher among refugees (21.7% and 42.1%, respectively) than Turkish patients (13.7% and 19.6%; both $p < 0.001$). However, referrals to another clinic did not differ significantly between the groups (3.0% vs 2.7%, $p > 0.05$).

These findings suggest that refugee women tend to present with more acute or advanced conditions requiring inpatient management, whereas Turkish women more frequently utilize routine outpatient services (Figure 1).

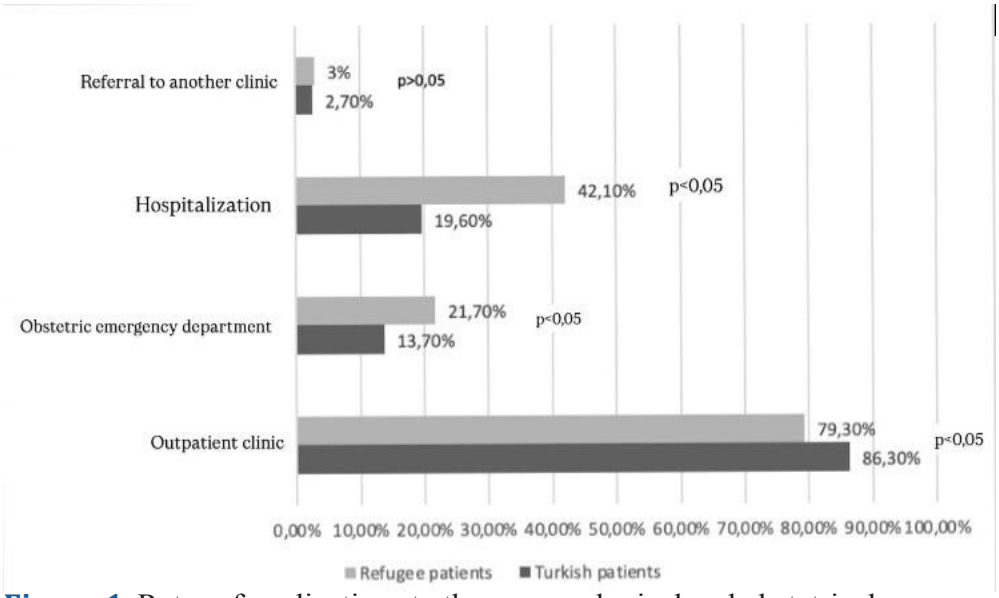


**Figure 1.** Rates of applications to the gynaecological and obstetrical emergency department and outpatient clinic, rates of hospitalization, and referral to other clinics

Between 2011 and 2019, a cumulative total of 211,035 deliveries occurred, comprising 183,538 births among Turkishand 27,497 births among Syrian refugee mothers, corresponding to 13.02% of all deliveries. The proportion of refugee births exhibited a sharp and statistically significant rise—from 0.4% in 2011 to 24.0% in 2019 ($p < 0.001$) (Table 3). Expected vaginal delivery remained the predominant mode of birth in both populations (Turkish = 125,881; refugee = 18,570), while multiple and repeat caesarean deliveries followed similar trends ($p < 0.001$). Nevertheless, primary caesarean section rates did not differ significantly (11.57% vs 11.43%, $p > 0.05$). The mean maternal age at delivery was significantly lower among refugees (26.21 ± 2.7 years) compared with Turkish mothers (27.61 ± 3.2 years, $p < 0.001$) (Table 4).

**Table 3.** Distribution of births by year and the ratio of refugee deliveries to total births between 2011 and 2019

| Variables | Turkish patients | Refugee patients | Ratio of refugees to total births (%) | Total births | p-value |
|---|---|---|---|---|---|
| Year of birth | | | | | <0.001* |
| 2011 | 18,503 | 75 | 0.40 | 18,578 | |
| 2012 | 23,065 | 182 | 0.78 | 23,247 | |
| 2013 | 21,853 | 974 | 4.26 | 22,827 | |
| 2014 | 22,936 | 2,391 | 9.44 | 25,327 | |
| 2015 | 20,249 | 4,952 | 19.65 | 25,201 | |
| 2016 | 20,833 | 4,228 | 16.87 | 25,061 | |
| 2017 | 24,047 | 5,492 | 18.59 | 29,539 | |
| 2018 | 22,891 | 6,301 | 21.58 | 29,192 | |
| 2019 (first 5 months) | 9,161 | 2,902 | 24.05 | 12,063 | |
| Total | 183,538 | 27,497 | 13.02 | 211,035 | — |

[a] SD: Standard deviation,* $p < 0.05$ indicates statistically significant difference (Chi-square or t-test as appropriate).

**Table 4.** Comparison of delivery outcomes and maternal characteristics between Turkish and refugee patients

| Variables | Turkish patients | Refugee patients | p-value |
|---|---|---|---|
| Vaginal delivery rate (%) | 68.6 | 67.5 | $p > 0.05$ |
| Caesarean section rate (%) | 31.4 | 32.5 | $p > 0.05$ |
| Primary caesarean rate (%) | 11.57 | 11.43 | $p > 0.05$ |
| Mean maternal age at birth (years) | 27.61 ± 3.2 | 26.21 ± 2.7 | <0.001* |

## DISCUSSION

The Syrian civil war has exerted a profound impact on Türkiye, particularly on border provinces such as Sanlıurfa, which hosts one of the largest Syrian refugee populations. Türkiye accommodates 3.6 million of the 5.5 million displaced Syrians, positioning it as the world's largest host country. As of 2019, more than 3.6 million Syrians were registered under temporary protection, with approximately half a million residing in Sanlıurfa (10-14).

For a developing country like Turkiye, grappling with economic fragility, the multi-program integration of refugees poses financial challenges despite fulfilling obligations through its open-door policy (15). Refugees commonly encounter difficulties in health, shelter, and education upon arrival in the host country (16). While the basic needs of registered refugees are generally met, including shelter, food, health, and education, the situation differs for unregistered refugees (17). Health challenges faced by refugees include a lack of vaccination, difficulty in accessing health facilities due to language barriers, inadequate utilization of available services, and the risk of contracting infections in unhygienic living spaces (18). To address integration challenges, Turkiye has established education and social cohesion centres (19). Child and youth centres, legal and vocational consultancy centres, rehabilitation centres, and immigrant health centres staffed by Syrian doctors offer free services (20). However, public hospitals, particularly for childbirth, surgery, or inpatient treatment, are preferred over specialized centres providing only outpatient services (20,21). Green card holders, indicative of low income, and Syrian refugees exhibit a high referral rate, likely attributed to limitations in direct access to universities and tertiary hospitals.

The region's sociocultural, ethnic, and religious characteristics contribute to low contraceptive use, resulting in high pregnancy and birth rates (22). Sanliurfa holds the highest fertility rate in Turkiye, as indicated by Turkish Statistical Institute (TUIK) data (23). Consequently, a majority of outpatient clinic visits comprise pregnant women, constituting 41.1% of Turkish patients and 52.9% of refugees. The desire for numerous children, symbolizing social power, is evident in outpatient clinics, with complaints of infertility. In addition, 5% of the refugees who came to the outpatient clinics applied for a report to be given to official institutions or aid organizations. Although it is more evident in Syrian refugee patients, the prevalence of illiteracy is remarkably high in both groups. As stated in TUIK statistics, this rate, which is significantly higher than that of men, can be explained by the cultural and religious structure of the region (24). Another example of this is evident at the height of religious marriage. Again, the rate of religious marriage is high in both groups, but one of the most important reasons for the significant increase in Syrian patients, along with religious reasons, may be that the region where the patients come from is the focal point of the civil war and is not under the control of the Syrian central government (25).

The reason for the higher rate of patients with BMI<20 in Syrian patients (8.5%) compared to Turkish patients (4.9%) may be the inability to obtain quality nutrition, although it cannot be fully predicted (26,27). With the majority falling below the minimum wage threshold, financial constraints on basic needs such as shelter and nutrition can be clearly anticipated. The primary caesarean section rate was observed to be nearly 11.5% in both groups, a significantly lower figure compared to the national Turkish average of 33.9%. This higher national average is linked to the prevalence of primary caesarean sections in private hospitals, where the rate reaches 55.3% (28,29). In Sanliurfa, the number of refugee births, initially only 75 in 2011, escalated to constitute 19.65% of total births by 2015. This trend has continued, with the birth rate for the first five months of 2019 reaching 24.05% (30). Remarkably, one in every four children born in Sanliurfa has Syrian refugee origins. The disparity between the relatively low number of outpatient clinic applications by refugee patients compared to their birth rate can be explained by their preference for refugee health centres, managed by Syrian doctors during the initial two trimesters, before turning to public hospitals as childbirth approaches. Language barriers might contribute to patients' inability to access appointment systems (31). A study in Kilis found similarly low rates of refugees applying to public hospitals for non-birth and surgery-related reasons, aligning with the observations in our study (32).

The diverse reasons for hospital applications underscore distinct healthcare needs. Turkish

patients predominantly favour outpatient clinics, while Syrian refugees exhibit a higher rate of hospitalization. The analysis of birth trends emphasizes the substantial contributions of both groups, with normal vaginal deliveries being prevalent. These findings underscore the significant impact of both Turkish and refugee patients on the overall childbirth landscape, emphasizing the necessity for comprehensive maternal care strategies tailored to the diverse needs of the population.

Patients under the age of 18 were not included in the study because they were registered in paediatrics. Since citizenship is granted through marriage, the number of refugee women who marry Turkish men is unknown. Additionally, not mentioning diseases and surgical procedures other than birth can be considered a limitation of the study. Furthermore, although there were examination entries for 106804 patients who were not included in the study, detailed information could not be accessed in the system. The lack of any data on why these patients could not be examined can be considered among the other limitations of the study.

In conclusion, the impact of refugee patients on health systems is a multifaceted challenge that demands a holistic and compassionate approach. The influx of refugees often strains healthcare resources, requiring innovative strategies to address both immediate and long-term healthcare needs. From language barriers to cultural differences and mental health concerns, healthcare providers must navigate a complex landscape to ensure the delivery of effective and inclusive care. These types of studies can provide insight to governments, policymakers, and health care providers on how to ensure equitable and effective health care for both their own and refugee populations by improving service delivery and resource allocation. Future studies will be useful in terms of improving the health service delivery of countries, optimizing the use of personnel, and conducting comprehensive cost analysis in an environment where wars continue, and refugees are looking for illegal ways to go to developed countries day by day.

## CONCLUSION

The findings of this study demonstrate that COVID-19 outcomes cannot be explained solely through biological or clinical determinants but are strongly shaped by economic and demographic structures. Specifically, the results show that fatality rates are most closely associated with economic parameters such as GDP, income inequality, and conflict levels, while the spread of the virus is strongly linked to population-related factors, particularly population size and indoor pollution deaths. These outcomes highlight the importance of viewing the pandemic not only as a medical crisis but also as a socio-ecological event shaped by interactions between host biology, economic conditions, and urban structures.

By integrating concepts from urban ecology and socio-biology, this study underscores the necessity of considering multiple layers of human-environment interactions when evaluating pandemic dynamics. Although limitations such as missing data and overfitting should be acknowledged, the global distribution of the dataset strengthens the generalizability of the conclusions. Future work should expand on these findings by incorporating more detailed ecological and evolutionary mechanisms, examining how economic disparities and urbanization processes influence population-level vulnerabilities. Ultimately, recognizing the central role of socio-economic parameters in shaping phenotypic responses to viral infections may guide more effective and equitable public health interventions in the face of future pandemics.

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**Conflicts of interest**

All authors declare no conflict of interest.

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**Ethical Approval:**

The study received ethical approval from the Harran University Ethics Commitee.

**Authors› contributions**

H.K. and K.S. contributed to the design and implementation of the research, to the analysis of the results. H.K., K.S., D.L. contributed to the writing and reviewing of the manuscript.

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