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Universal public health insurance for Afghan refugees in Iran: a contextual analysis

Sahar Amuzadeh-Araei[1], Amirhossein Takian[2,3,4] and Alireza Jabbari[5*]

Abstract

Background The right to health for all individuals, including refugees, is recognized as one of the most fundamental human rights. However, refugees continue to face numerous barriers in accessing healthcare services. Iran has not yet achieved full coverage despite implementing a health insurance scheme for refugees. Therefore, this study aims to identify the contextual factors influencing the basic universal health insurance program for Afghan refugees in Iran using the PESTEL framework.

Methods This qualitative study was conducted between October 2024 and March 2025. Data were collected through semi-structured interviews with 22 key individuals, including managers and experts from the Health Insurance Organization, the Bureau for Aliens and Foreign Immigrants Affairs (BAFIA), the United Nations High Commissioner for Refugees (UNHCR), refugee researchers, educated Afghan refugees, and healthcare service providers. Participants were selected through purposive sampling. Data analysis was conducted using framework analysis based on the PESTEL framework. MAXQDA 20 software was used to assist with data management and analysis.

Results The contextual determinants of the universal public health insurance policy for Afghan refugees in Iran were 61 factors that were categorized into six main themes and 17 sub-themes. The main themes identified in this study included political (four factors), economic (five factors), legal and regulatory (two factors), sociocultural (four factors), technological (one factor), and environmental factors (one factor).

Conclusion Findings from this study, based on the PESTEL framework, revealed that the refugee health insurance policy in Iran is influenced by a range of political, economic, social, technological, legal, and environmental factors. To improve insurance coverage among refugees, policymakers—particularly senior health system managers—can create an enabling environment for equitable and sustainable access to healthcare services by strengthening information infrastructures, reforming financial and legal mechanisms, and enhancing intersectoral and international collaboration.

Clinical trial number Not applicable.

Keywords Refugees, Universal public health insurance, Health insurance, Health policy, Iran

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Background

The right to health is recognized as a fundamental human right. All individuals, including migrants and refugees, should have equitable access to healthcare services, regardless of their nationality, legal status, or social conditions [1]. Reflecting this principle, the United Nations (UN) has emphasized ensuring health and well-being for all at all ages as a key strategy in Goal 3 of the 2030 Sustainable Development Goals (SDGs) [2] One of the key strategies to achieve this goal is Universal Health Coverage (UHC) [3–5]. The primary goal of Universal Health Coverage (UHC) is to ensure that all individuals, including vulnerable groups such as refugees, have access to essential health services without experiencing financial hardship.

Migration and refugee are considered social determinants of health that contribute to health disparities between migrant populations and host communities. Ongoing conflicts in Myanmar, Afghanistan, Turkey, Gaza, and Lebanon have intensified this issue, making it a global concern. According to the 2024 United Nations High Commissioner for Refugees (UNHCR) report, over 122.6 million people have been displaced due to war, armed conflict, human rights violations, or crises that disrupt public order, with 38 million formally recognized as refugees [6]. Based on 2024 data, Iran has become the world's largest refugee-hosting country [1], accommodating over 3.8 million registered refugees [7]. Additionally, it is estimated that around 8 million Afghans reside in Iran, the majority of whom are undocumented [8].

In alignment with the SDGs and under its Health Transformation Plan (HTP) to achieve UHC, Iran has introduced new policies to improve healthcare access for refugees and extend health insurance coverage at a level similar to that offered to Iranian citizens [9]. In 2015, Iran launched the Universal Public Health Insurance (UPHI) scheme to meet the healthcare needs of refugees. This initiative was developed in collaboration with the Ministry of Health, the Iran Health Insurance Organization, the Bureau for Aliens and Foreign Immigrants Affairs (BAFIA), and UNHCR, aiming to provide insurance coverage to all registered (legal) refugees living in the country [8, 10–25]. Throughout the four phases of the UPHI project for refugees, an average of 112,000 refugees have been insured annually, the majority of whom were vulnerable refugees [9]. The health insurance for vulnerable refugees is fully funded by UNHCR, while non-vulnerable refugees are required to pay their insurance premiums [21, 22]. However, undocumented migrants are not eligible to access this health insurance scheme.

According to the International Organization for Migration (IOM), migration negatively affects other social determinants of health at both individual and societal levels. As a result, access to healthcare and the overall health status of most refugees and migrants are shaped by a complex interplay of social, cultural, legal, and economic factors [26]. Moreover, refugees in host countries face various forms of discrimination and numerous social, cultural, economic, and political barriers in accessing healthcare services [27]. These barriers contribute to poorer health outcomes among refugees compared to the general population [28]. Although the Iranian government has introduced supportive policies to integrate refugees into the national health insurance system, significant obstacles remain., such as the limited financial resources of refugees [22, 23, 29], high insurance premiums [22, 30], legal and administrative restrictions [31–33], lack of coverage for certain services under the basic insurance package and high out-of-pocket payments [22, 29], lack of awareness about insurance rights [8], and fragmented financial support from international organizations [15] have contributed to reduced utilization of healthcare services and limited access to health insurance among refugees. Moreover, language barriers, cultural differences [23, 29], and fear of detention or deportation have further decreased the frequency of healthcare visits [34, 35].

To identify these challenges, various contextual factors, such as government policies, international interactions and sanctions, refugees' limited financial capacity, social attitudes, health literacy levels, development of health technologies, and residency regulations play a decisive role by creating either barriers or opportunities that affect refugees' access to basic health insurance and their overall health status. Given that the improvement of migrant and refugee health is strongly emphasized in international legal and policy frameworks [36] Analyzing these challenges through a multidimensional approach that considers contextual factors and reduces structural barriers can contribute to the reform of refugee health insurance policies in Iran and the development of effective solutions at both national and international levels. Accordingly, this study aims to analyze the policy context of Iran's UHC program for Afghan refugees using the PESTEL framework, to support evidence-informed decision-making and guide meaningful reform efforts within Iran's health system.

Methods

Study design setting

This study is qualitative research conducted between October 2024 and March 2025. Data were collected through semi-structured interviews. The rationale for choosing a qualitative approach lies in its ability to access participants' inner experiences and extract tacit knowledge, insights, and unspoken information [37].

Table 1 Demographic characteristics of participants (n: 22)

Title	Criteria	*N*	Title	Criteria	*N*
Work history	2–10	10	Work area	Policymaker in the Ministry of Health and Medical Education	2
	11–20	7		Managers and experts in insurance organizations, NGO, international organizations (UNHCR), BAFIA	16
	Over 20	5		Researchers in refugee and migrant health	2
				Stakeholders	2
Educational level	Bachelor	8	Age	30–40	6
				41–50	11
	Master	6		Over 50	5
	Doctorate (PhD)	8			
Gender	Male	15			
	Female	7			

Study participants

This study included 22 participants selected through stratified purposeful sampling [38]. The participants comprised health insurance managers and experts, officials from the Bureau for Aliens and Foreign Immigrants Affairs (BAFIA), representatives from the UNHCR, refugee researchers, educated refugees, and healthcare service providers. In this method, individuals who possess the richest and most comprehensive information and can effectively share their knowledge with the researchers are selected as participants. Additionally, this sampling approach combines two typical case sampling strategies: typical case sampling and maximum variation sampling [39]. The sample size continued until data saturation was reached, meaning no new information or data emerged (Table 1).

Including and excluding criteria for experts selecting

- At least two years of executive or academic experience in the field of health insurance,
- Holding responsibilities related to the UHC program for Afghan refugees in Iran,
- Refugee status and being a beneficiary of the UHC program,
- Willingness and ability to participate in the study.

Data collection tool and technique

Data collection was carried out through semi-structured interviews using a guide developed based on a comprehensive literature review and input from subject matter experts. Informed consent was obtained from all participants before each session, including permission for audio recording. To maintain confidentiality, each interview was assigned a unique identification code. Additionally, note-taking was used during interviews to capture supplementary information. Each interview lasted approximately 60 min. Audio recordings were reviewed multiple times immediately after each session and subsequently transcribed verbatim. The transcriptions, along with the initially extracted codes, were then shared with participants for member checking. Participants were asked to review the codes, verify their accuracy, and suggest any necessary modifications, deletions, or additions to ensure the credibility and trustworthiness of the findings.

Data analysis

Framework analysis was used to analyze qualitative data. Qualitative framework analysis is a flexible data analysis method that can be used in systematic qualitative reviews [40, 41]. The UPHI policies of Afghan refugees in Iran were examined according to the PESTEL framework (Fig. 1). This model is designed in six political, environmental, social, technological, economic, and legal sectors [42, 43].

Categorizing was done by two researchers (SA and AJ) using the following steps:

1. Familiarization with data.
2. Generating and restate clarifying themes;

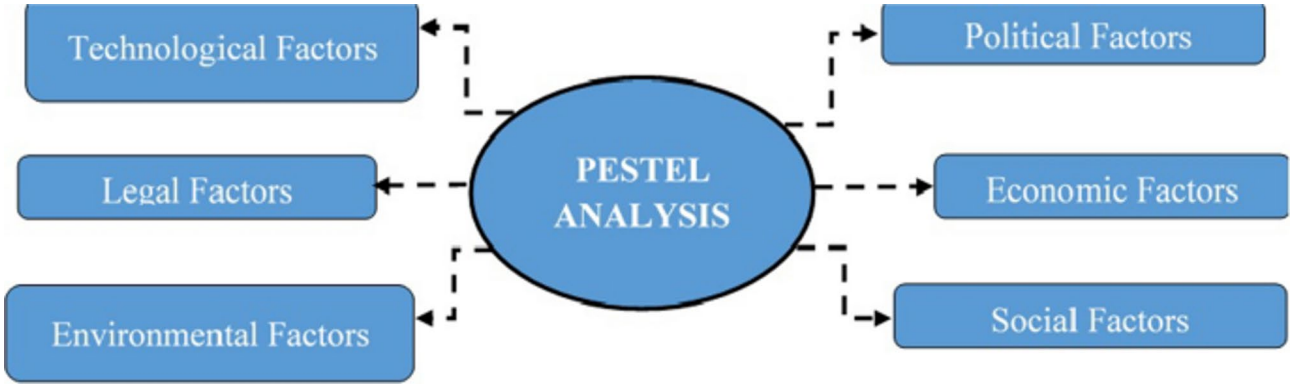

Fig. 1 PESTEL framework

3. Classifying extracted factors based on content relationship and conceptual proximity;
4. Reviewing themes, merging and categorizing themes into the PESTEL framework columns;
5. Generating refined and clear definitions for themes in the PESTEL framework.

MAXQDA 2020 software was used for data management and organization.

Trustworthiness

To ensure the trustworthiness of the data, the study employed Guba and Lincoln's four criteria: credibility, dependability, confirmability, and transferability [44]. To enhance credibility, sufficient time was dedicated to data collection, detailed notes were taken during interviews, and transcribed interviews were returned to participants for member checking. Additionally, to verify the accuracy of the coding process, two independent coders reviewed a sample of preliminary interviews. Dependability was addressed by thoroughly documenting the research process, including all procedures and methodological decisions, and maintaining detailed interview notes to ensure consistency and transparency. For confirmability, the research steps were documented, the details of the research method were recorded, and contradictory cases were examined to understand the reasons for these contradictions. To establish transferability, feedback was obtained from individuals not involved in the study to assess the applicability of the findings in other contexts. Additionally, the study's limitations, data collection and analysis methods, participant selection, and subject descriptions were clearly stated to improve the study's transferability, enabling other researchers to continue this work.

Ethical considerations

Ethical approval of the research was obtained from the Research Ethics Committee of Isfahan University of Medical Sciences (ethical code: IR.MUI. NUREMA. REC.1402.153). To comply with the ethical issues in this study, informed consent was obtained from the participants, and individuals have the right to withdraw from the study at any time they want. In addition, the objectives of the study will be explained to the participants at the beginning.

Results

A total of 22 managers and experts participated in this study. The majority of participants were male (15 individuals). The largest age group was between 40 and 49 years old, and most held specialist positions. The highest educational qualification among participants was a doctoral degree.

After analyzing the participants' perspectives, 253 factors influencing the policy context of the UPHI program for Afghan refugees in Iran were identified. Following the removal of duplicates and consolidation of similar items, 61 factors were categorized into 6 main themes and 17 subthemes. The theme of social support for refugees had the highest frequency with 38 factors. The main themes included economic, political, legal and regulatory, social, technological, and environmental factors. (Fig. 2; Table 2).

Political factors

Policy analysis of refugee health insurance in Iran reveals that political factors, at both national and international levels, play a critical role in shaping the implementation and sustainability of related policies. At the international level, ongoing conflicts and global instability have diminished the capacity and commitment of international organizations to provide sustained financial and technical support. As one participant explained:

> *…Given the emergencies and numerous wars occurring worldwide, and the insufficient level of international contributions, this has impacted humanitarian aid and refugee support… (P1).*

At the domestic level, frequent changes in government administrations, discontinuity in insurance agreements, and the centralized monopoly of the state in the policy-making process have posed significant barriers to refugee access to health insurance. According to one informant:

> *…In my opinion, in the health sector policy-making, the Iranian government acts in a monopolistic way and does not allow the consultations of international organizations to be utilized. It formulates policies exclusively, which prevents those organizations from being involved in the policymaking process… (P16).*

Despite these challenges, international frameworks and national strategic documents offer important opportunities to advance refugee health policy. Commitments such as the 1951 Refugee Convention, the 2018 Astana Declaration, and various national development plans can serve as leverage points for mobilizing global support and expanding inclusive insurance coverage. As one participant noted:

> *…The 2018 Astana Declaration on Universal Health Coverage obliges governments to establish inclusive insurance structures. This framework presents an opportunity for host countries to implement health*

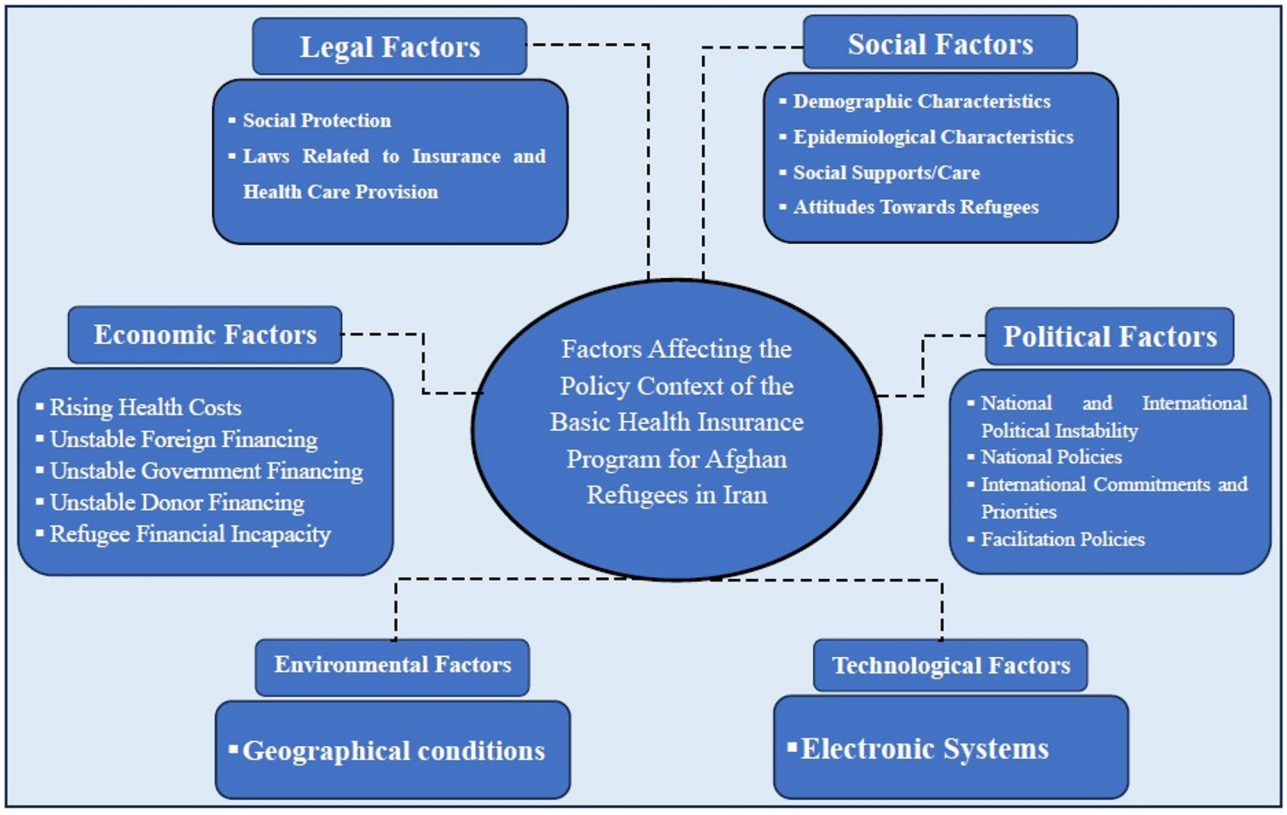

Fig. 2 Analysis of the policy context of the UPHI for Afghan refugees in Iran, based on the PESTEL framework

> *insurance for refugees by mobilizing international support… (P19).*

Facilitative government actions, such as waiving insurance requirements for vulnerable groups and pregnant women, are considered positive steps. Nevertheless, the sustainability of these measures requires enhanced coordination with international agencies and addressing existing structural challenges within the policy-making system.

Economic factors

Participants emphasized that economic factors, such as inflation, financial instability, unemployment, international sanctions, and the high cost of covering vulnerable populations, are among the most significant barriers to expanding refugee health insurance in Iran. One participant noted:

> *…On one hand, inflation in recent years has decreased the purchasing power of the insured in our country, and many refugees are no longer able to afford insurance premiums… (P15).*

The rising cost of healthcare services combined with the devaluation of the national currency has drastically diminished the financial capacity of refugees to pay for health insurance coverage. In this regard, another participant stated:

> *…Costs have increased… but now the value of money has dropped so much that the same income isn't even enough to cover basic necessities like housing and food… that's why they don't renew their insurance—because they simply can't afford it… (P14).*

Furthermore, fluctuations in financial support from international organizations and charitable donors have jeopardized the sustainability of insurance programs. Additionally, policies such as the requirement to enroll the entire household and high insurance tariffs have further impeded refugees' access to insurance. As one participant noted:

> *…Refugees face financial difficulties. The household enrollment condition in insurance makes it even harder, so people avoid enrolling unless they absolutely have to… (P4).*

Socio-cultural factors

All participants indicated that factors such as age structure, household size, health literacy, and the attitudes of the host community are key socio-cultural determinants

Table 2 The main themes, Sub-themes, and related codes of the policy context of the UPHI for Afghan refugees in iran, based on the PESTEL framework

Main theme	Sub theme	Code
Economic Factors	Rising Health Costs	Inflation
		The high cost of insuring vulnerable populations
		Imposition of the financial burden on hospitals
	Unstable Foreign Financing	A decrease in the level of participation of international organizations
		Fluctuations in financial aid from countries to the UNHCR
	Unstable Government Financing	Economic crises
		Economic sanctions
	Unstable Donor Financing	Fluctuations in financial aid from donors
	Refugee Financial Incapacity	Unemployment
		Calculation of medical tourism tariffs for uninsured refugees
		Household conditions for insurance coverage
		Inability to pay out-of-pocket expenses,
		Income (no income or insufficient income)
Technological Factors	Electronic Systems	Access to Services via a Unique Registered Identification Code in the System,
		Refugees' Access to the Health Insurance Support System
		Provision of Online Health Insurance Services to Refugees
		Access to Electronic Health Records (EHRs),
		Registration of Refugees' Data in National Health and Insurance Systems
Political Factors	National and International Political Instability	The impact of wars and conflicts on the financial participation of international organizations
		Uncertainty in the implementation of memoranda of understanding due to changes in governments
		Internal wars, regime changes, and regional developments as factors contributing to the increased influx of Afghan nationals
	National policies	The existence of national policies aimed at supporting health insurance for refugees,
		Lack of participation of all national and international stakeholders in the policy-making arena for the health insurance of Afghan refugees,
		Deportation policies of migrants as a challenge for health insurance coverage of Afghan refugees
		The Necessity of Aligning Donor Contributions with National Policies
	International commitments and priorities	International commitment to refugee support
		Focus of international organizations on registered and vulnerable refugees
	Facilitation Policies	Establishment of insurance facilitation for refugees with specific conditions,
		Provision of health services for vulnerable groups beyond the insurance contract coverage,
		Removal of the household requirement for insurance coverage of pregnant women and newborns
Socio-Cultural Factors	Demographic characteristics	The Impact of Age Structure on Refugees' Insurance Behavior,
		High Household Size among Refugees,
		Low Health Insurance Literacy among Afghan Nationals,
		Low Health Literacy among Afghan Nationals
	Epidemiological characteristics	Poor Health Indicators among Refugees,
		High Prevalence of Communicable Diseases,
		Distinct Epidemiological Profile of Refugee Populations
	Social Supports /care	Engagement of Refugees in Health and Insurance Culture Promotion,
		Fair Insurance Premiums,
		Provision of Emergency Medical Services Regardless of Refugees' Legal Residency Status,
		Preserving the Human Dignity of Afghan Refugees,
		Social Marketing of Health Insurance
	Attitudes towards refugees	Varied Political Perspectives of International Organizations Regarding Refugee Issues,
		Negative Attitudes of the Host Community toward Supporting Refugees
		The Government's Supportive and Humanitarian Approach toward Afghan Refugees

Table 2 (continued)

Main theme	Sub theme	Code
Legal and Regulatory Factors	• Social Protection	Lack of access to unemployment insurance for foreign nationals
		Exclusion of foreign women from the Social Security homemakers' insurance scheme
		Temporary voluntary insurance coverage for unemployed foreign nationals
		Possession of a work permit as a prerequisite for foreign nationals' eligibility for social security insurance
		Existence of a legal provision mandating social security insurance for employed foreign nationals in the country
	Laws and Regulations Related to Health Insurance and Health Care Provision	Lack of Participation of All International Stakeholders in Policy-Making Processes,
		Exclusion of Afghan Nationals Holding Census Cards from Insurance Coverage,
		Emphasis on Refugees' Access to Health Insurance in Higher-Level Legislation,
		Identity Verification for Insurance Coverage,
		Employer's Obligation to Include Foreign Nationals in Insurance Premium Lists,
		Existence of Legislation Regulating Insurance for Foreign Nationals within National Development Plans,
		Non-Provision of Insurance and Services in Restricted Cities,
		Insurance Coverage Limited to Documented Refugees,
		Exclusion of Foreign Nationals from Supplemental Health Insurance
Environmental Factors	Geographical conditions	Unsanitary environment,
		Geographic Accessibility to Health Services

influencing refugees' access to health insurance in Iran. Participant P10 remarked:

> *...Their household size is actually larger than that of us Iranians—this may be a significant challenge in obtaining insurance for refugees....*

Furthermore, young refugees tend to perceive themselves as low-risk for illness and therefore place less importance on health insurance. On the other hand, large families often forgo insurance coverage due to financial constraints. The low levels of health and insurance literacy—particularly among Afghan nationals—pose a significant challenge in raising awareness about the benefits of health insurance. Participant P8 elaborated:

> *...We try to use various incentives, have discussions with community elders, distribute brochures, and occasionally organize classes and sessions to talk to them about the advantages of having insurance....*

Despite the supportive and humanitarian policies of the Iranian government toward Afghan nationals—and its efforts to uphold the human dignity of refugees, which have improved their access to insurance services—the differing political perspectives of international organizations toward refugees, along with negative perceptions held by some host country citizens, can undermine the sustainability of these policies. As Participant P7 noted:

> *...The lack of funding from international organizations for refugees stems from their politically driven attitudes toward refugee issues...*

Technological factors

The expansion of electronic systems and the utilization of modern digital health technologies were central themes emphasized by participants in improving refugees' access to health insurance services. The implementation of electronic prescribing systems and the issuance of digital insurance certificates were identified as significant advancements in the delivery of healthcare services to refugees. As one of the participants stated:

> *...Over the past three years, health insurance has transitioned entirely from paper booklets to an online insurance system, specifically electronic prescriptions. All of these developments have also been extended to refugees, and they now benefit from the same system... (P1).*

Furthermore, the establishment of accessible insurance inquiry and complaints systems—particularly through telephone hotlines and digital portals—has significantly facilitated interactions between refugees and the insurance system. As stated by participant P12:

> *...The insurance response system, used for tracking insurance-related issues and complaints, is also available to refugees...*

Existing information infrastructure for the registration and identification of refugees plays a critical role in service delivery. However, shortcomings in data integration remain evident. One interviewee noted:

…We currently have a system for registering refugee information, but the system generates new codes on its own… (P4).

Additionally, access to Electronic Health Records (EHRs), by consolidating medical histories, has improved care quality and streamlined insurance follow-ups.

Legal and regulatory factors

The majority of participants emphasized the pivotal role of higher-level legislation in mandating health insurance coverage for all legal residents. As one participant stated:

…According to Iran's Sixth Development Plan, health insurance coverage must be compulsory for all legal residents… (P16).

However, the implementation of these laws faces structural barriers and discriminatory practices that hinder full enforcement. Individuals holding temporary documents, such as census certificates, are excluded from insurance coverage:

…These individuals cannot access any insurance, neither Social Security nor Health Insurance… (P4).

Furthermore, Social Security insurance eligibility is conditional upon holding an official employment permit. Also, in certain provinces, the provision of insurance services to foreign nationals is completely prohibited:

…Access to Social Security insurance requires that foreign nationals possess a valid employment card… (P18). …There are about eleven or twelve provinces where it is forbidden, and foreign nationals are not allowed to enter those provinces… Insurance and services are not provided there… (P2).

These findings indicate that despite the existence of supportive legal frameworks, their implementation is hindered by administrative restrictions and selective approaches, posing a significant barrier to achieving universal health insurance coverage for all refugees.

Environmental factors

Environmental factors play a crucial role in the actual utilization of health insurance benefits by refugees. Interview data indicate that many refugees reside in crowded areas lacking adequate health infrastructure, including access to safe drinking water. These conditions have led to the prevalence of various illnesses, especially among children; however, existing insurance coverage often only includes physician visit fees.

… Some of these individuals do not have access to safe drinking water… which causes many illnesses, but insurance coverage for medical tests is very limited… (P16).

Additionally, geographical barriers such as living on city outskirts, lack of transportation, and the concentration of healthcare facilities in city centers hinder effective use of insurance benefits. Overall, the gap between formal insurance coverage and actual access to services significantly diminishes the effectiveness of health insurance coverage for this population.

… Most refugees live on the outskirts of the city and cannot even afford transportation costs… Specialist doctors who accept insurance are only found in the city center… (P14).

Discussion

The present study analyzed the contextual factors influencing the policymaking process of the Basic Universal Health Insurance Program for Afghan refugees in Iran using the PESTEL framework. This qualitative research was conducted through semi-structured interviews with experts in the field of migrants and refugees. The contextual factors affecting refugee health insurance were identified and categorized into six main themes and seventeen sub-themes. The findings of this study indicate that the implementation of the UPHI Policy for Afghan refugees in Iran takes place within a complex context influenced by multifaceted political, economic, sociocultural, technological, legal, and environmental factors. Among these, political factors—at both national and international levels—play a decisive role in the success or failure of the policy. Regional developments, such as the war in Ukraine and instability in Afghanistan, have led to an increase in the refugee population while simultaneously reducing international financial support for health insurance programs. This has occurred at a time when the demand for healthcare services among refugee populations is growing [22, 45].

On the other hand, instability in national policymaking, particularly as a result of governmental changes and the discontinuity in the implementation of memoranda of understanding, has led to a lack of continuity in insurance support programs and reduced the willingness of refugees to engage with these policies [46]. While international documents such as the 1951 Refugee Convention and the 2018 Astana Declaration provide potential frameworks for enhancing government accountability, the lack of effective internal mechanisms has hindered their practical implementation. Despite the emphasis of national legislation, such as the Sixth and Seventh Five-Year Development Plans, on full insurance coverage for

foreign nationals, structural and operational challenges, particularly regarding undocumented migrants, have prevented the full realization of these objectives, leaving a portion of the refugee population effectively excluded from access to insurance services [47]. The exclusive concentration of policymaking authority within the Iranian government, along with the ineffective utilization of the capacities of international organizations, constitutes a significant macro-structural barrier. Nevertheless, facilitative measures—such as the removal of household requirements for pregnant women or the inclusion of patients with special conditions—can be considered part of a structural strategy aimed at ensuring sustainable access to insurance services for vulnerable groups.

The analysis of qualitative data indicates that the economic dimension constitutes one of the most fundamental barriers to Afghan refugees' access to health insurance services in Iran. At the micro level, factors such as unemployment, unstable income, high living costs, and the requirement to insure all household members have resulted in the reprioritization of insurance premium payments among this population. In many cases, these financial constraints have rendered participation in insurance schemes practically unfeasible. Several studies, including research conducted in Massachusetts [48] and findings by Etemadi et al. in Iran [22] have emphasized the deterrent effect of high insurance premiums, particularly for non-vulnerable refugees. As a result, many of these individuals seek medical care only in emergency situations and without insurance coverage, leading to unreimbursed healthcare costs for the health system and an increase in cost-avoidant behaviors. Similar findings have been reported in the study by Asi et al. in Turkey [49].

On the other hand, financial incapacity and the lack of organized support for vulnerable groups have led to treatment avoidance and the gradual deterioration of their health status [8]. In line with the findings of this study, research on Syrian refugees in Jordan also revealed that the absence of insurance coverage constitutes a significant barrier to accessing cancer treatment services [50]. At the macro level, instability in international financial resources, reduced support from international organizations following crises such as the war in Ukraine, and fluctuations in charitable contributions have posed significant challenges to the continuity of comprehensive insurance coverage. Evidence from Jordan [51] and Iran [17] highlights the critical role of charitable organizations; however, exclusive reliance on the unstable funding of these entities presents a serious risk to the sustainability of refugees' access to healthcare services.

Moreover, economic sanctions and currency fluctuations have diminished the government's capacity to procure medicines and healthcare equipment, placing additional strain on Iran's healthcare system [52]. Although the government has committed to covering half of the health insurance premiums for refugees [47], financial constraints have hindered the expansion of adequate support coverage. Meanwhile, policies such as calculating healthcare tariffs for refugees based on medical tourism rates have not only undermined financial equity in health but have also effectively diverted the insurance system from its core mission—protecting vulnerable groups against catastrophic health expenditures.

A review of international experiences indicates that financing refugee health insurance through public government budgets is an effective approach to enhancing equitable access to health services. In countries such as Colombia [53] and Poland [54–56], the government fully or partially covers the cost of health insurance for refugees. Colombia has taken a significant step toward social integration by funding the insurance premiums of documented refugees through public resources, although access to private health services still requires out-of-pocket payments [57, 58]. Poland has also demonstrated a successful model of financial protection by providing comprehensive health coverage through the National Health Fund (NHF) without requiring refugees' financial contribution [55, 59]. Comparing these experiences with the situation in Iran suggests that improving health insurance coverage for refugees requires the use of public funding, reducing the financial burden on refugees, and mobilizing sustainable international support as key strategies.

Socio-cultural factors play a significant role in shaping patterns of access to and utilization of health insurance among Afghan refugees in Iran. High household size, a predominantly young age structure, and low levels of health and insurance literacy in this population are key contextual factors that contribute to reduced perceived need for insurance, increased risky behaviors, and avoidance of medical treatment. Etemadi et al. also noted that the large family sizes among Afghan refugees, combined with the requirement to pay insurance premiums in a lump sum at the time of enrollment, often result in their lack of insurance coverage [47]. This situation not only threatens the financial sustainability of insurance programs but also poses broad epidemiological consequences, particularly during outbreaks of communicable diseases, for the national health system. Concerns regarding the transmission of infectious and contagious diseases within the host community have also been documented in other studies [60–62]. The most significant challenge in accessing healthcare services is the low level of health and insurance literacy among refugees [63]. Nevertheless, the active involvement of certain refugee community members as "cultural mediators," along with the use of tools such as multilingual brochures,

face-to-face education, and training sessions, are considered effective strategies for improving insurance literacy.

On the other hand, many governmental institutions in Iran approach the provision of services to refugees, particularly those with special medical conditions or undocumented status, with a humanitarian and dignity-based perspective. In this regard, the study by Wong et al. emphasized that host governments should hold an ethical responsibility toward addressing the healthcare needs of migrants and refugees [64]. Supportive governmental approaches toward refugees often stand in contrast to certain negative attitudes within the host society regarding the allocation of resources to foreign nationals. This attitudinal gap—partly shaped by economic crises and media narratives—can undermine the political sustainability of insurance programs targeting refugee populations. Therefore, policymakers—especially in developing countries such as Iran—must pay equal attention to cultural and social dimensions, alongside designing and establishing financial and legal frameworks. This includes prioritizing awareness-raising, shifting public attitudes, and strengthening citizens' social participation.

For example, Colombia's health policies toward refugees and migrants have been designed not only with structural and economic considerations in mind but also by accounting for the cultural and social dimensions of the host society. These policies aim to facilitate the gradual integration of displaced populations into the national health system while ensuring their long-term access to healthcare services equivalent to that of Colombian citizens [65]. Drawing on Poland's successful experience [54, 55] and adapting it to the local context, Colombia has emphasized strengthening the social and economic participation of refugees—particularly through labor market integration—as a key strategy. This approach enables refugees and migrants to contribute to the financing of their own health insurance. By fostering a sense of social belonging, improving health literacy, and reducing cultural barriers to healthcare utilization, Colombia's inclusive and culturally sensitive health policy has enhanced both the effectiveness and sustainability of healthcare services in a multicultural setting [53, 57, 66–69].

The findings indicate that the development of health technology infrastructure in Iran has played a pivotal role in enhancing refugees' access to insurance services. Specifically, initiatives such as replacing paper booklets with electronic systems, assigning unique identification codes, and implementing digital registration systems for refugee data represent effective steps toward reducing bureaucracy and facilitating administrative processes. This approach aligns with the recommendations of the Global Compact on Refugees and the 2021 specialized digital health technology conferences [70]. Numerous studies have also emphasized the positive impact of modern technologies on improving access to health information and welfare indicators [71]. For example, Germany's experience in facilitating refugee access to healthcare highlights the effective use of electronic systems. Since 2016, the replacement of the Health Care Voucher (HCV) with the Electronic Health Card (EHC) has significantly streamlined access to health services for refugees, enabling direct and less bureaucratic utilization of care comparable to that of German citizens after 18 months of residence. This reform, alongside state coverage of insurance costs for the unemployed and the establishment of parallel service structures for uninsured migrants, has substantially enhanced equity in healthcare access and promoted inclusive health protection [72–77].

However, effective utilization of digital capacities faces several challenges. These include the lack of integration in identity codes, weak system interoperability among insurance, referral, and service delivery platforms, and the unstable access of refugees to smart devices and the internet. Despite the advantages of assigning a unique identity code, its inconsistent and sometimes contradictory use across various systems highlights the urgent need for a centralized and coherent platform among relevant institutions. Meanwhile, the development of electronic health records could serve as a powerful tool for care documentation, data-driven evaluation, and continuity of services. Nevertheless, the lack of technical infrastructure and failure to establish system connectivity have significantly limited its effectiveness, as also noted in other studies [78, 79].

Refugees' access to support systems such as the 1666 hotline, which enables them to track insurance-related issues, reflects a responsive approach in health policy. Nevertheless, overcoming linguistic, cultural, and digital barriers at the service user level is essential. This can be achieved through the training of cultural mediators, the provision of multilingual content, and the design of user-centered interfaces to enhance digital equity. Overall, achieving systemic integration, intersectoral support, and technological justice can pave the way for sustainable, equitable, and efficient access to health insurance services for refugees.

It is undeniable that Iran's high-level legal documents—such as the Sixth Five-Year Development Plan and Clause 5, Section B, Article 70 of the law—emphasize the necessity of providing health insurance coverage to foreign nationals residing in the country. However, in practice, the laws and regulations related to refugee health insurance reflect a selective implementation approach that fails to guarantee equal access for all refugee groups. Findings from several studies support this aspect of our research [47, 80, 81]. Specifically, only refugees possessing official documents, such as the "Amayesh" card or a letter of introduction from UNHCR, are eligible to

receive insurance coverage and associated service packages. In contrast, individuals holding census slips or unofficial documents are excluded from this entitlement. This discriminatory approach underscores the necessity of standardizing identification processes and adopting a more comprehensive definition of insurance inclusion, one based on health needs rather than legal status. This issue has also been highlighted in the study by Vargas-Bustamante et al. (2014) in the United States [82].

In addition, policies such as the designation of "prohibited areas" for the residence of foreign nationals have led to geographic disparities in access to health insurance. Designing coverage models tailored to regional needs could be an effective strategy to address this form of discrimination. Moreover, many vulnerable groups—including housewives and individuals without work permits—are excluded from access to social insurance. However, models such as voluntary insurance, if supported by targeted financial subsidies, could provide at least minimal coverage for these populations. On the other hand, the limited participation of international organizations in the health insurance policymaking process and the lack of transparency have undermined opportunities for the technical and financial strengthening of the system. Adopting a participatory and intersectoral approach, aligned with international standards, is essential for a structural reform of the refugee health insurance system. Furthermore, strengthening the enforcement of laws and regulatory mechanisms can enhance the effectiveness of policies and the efficiency of financial provision. Overall, achieving UHC requires structural, equity-oriented, and transparent reforms within national policies that include all residents, regardless of nationality or documentation status.

One of the key challenges in the effective implementation of refugee health insurance policies is the neglect of their environmental living conditions. Findings from the present study indicate that refugees often reside in overcrowded and marginalized areas, which frequently lack basic infrastructure such as safe drinking water, proper sewage systems, and adequate ventilation. These conditions contribute to an increased burden of infectious and respiratory diseases [22]. Combined with insufficient insurance coverage for diagnostic and pharmaceutical services, this situation imposes significant out-of-pocket costs on refugee households and undermines the protective function of health insurance.

In this regard, revising the health insurance benefits package with a focus on the environmental and epidemiological needs of refugee-populated areas, such as expanding coverage for laboratory services, medications, and primary care, is an inevitable necessity. Additionally, adopting a health-oriented approach in urban and environmental policies, through intersectoral collaboration with institutions such as the Ministry of Roads and Urban Development and municipalities, can serve as a preventive intervention that effectively improves the health indicators of refugees.

Moreover, the findings indicate that geographic limitations in accessing insurance-affiliated health centers, especially in marginalized areas, constitute another barrier to benefiting from health insurance. The concentration of public healthcare facilities in urban centers and the lack of contracts with nearby private hospitals have created a geographic gap in access, an issue that has also been confirmed in previous studies [83–85]. In response to this challenge, policies such as expanding conditional contracts with selected private centers under adjusted tariffs, establishing community-based clinics, and deploying mobile health units in densely populated refugee areas can be employed. Overall, the environmental and spatial conditions of refugees are not only linked to their physical health but, if overlooked, can severely limit the effectiveness and feasibility of health insurance policies.

Limitation

The limitations of this study include the lack of accurate and up-to-date data on refugees' health insurance, legal restrictions on access to governmental resources and sensitive information, and the cultural and social differences among refugees that may complicate the generalizability of the findings. Additionally, using the PESTEL framework may result in analyzing factors at a macro level, making it challenging to generalize at the national level. The specific focus on health insurance might also overlook other needs of refugees.

Conclusions

The findings of this study, based on the PESTEL framework, reveal that the health insurance policy for Afghan refugees in Iran is shaped within a complex environment influenced by political, economic, social, technological, legal, and environmental factors. Regional political instability, centralized government policymaking, and the diminished involvement of international organizations are among the main political barriers. Economically, the financial incapacity of refugees, instability of funding sources, and the requirement to enroll entire households—combined with low health literacy and negative host community attitudes—have substantially limited access to insurance. Although technological tools such as electronic systems and unique identification codes are available, the lack of integration across platforms has constrained their effectiveness. In the legal dimension, the selective application of laws and exclusion of undocumented individuals have deepened inequities in access. Environmentally, the remoteness of health facilities and

substandard living conditions have further weakened the protective function of health insurance.

To improve access and promote equity in health insurance, it is recommended to develop an integrated electronic infrastructure linking insurance, identity, and health systems through refugees' unique identification codes. Additionally, economic access can be enhanced through targeted subsidies, eliminating the household-based premium requirement, lowering insurance rates for vulnerable populations, and enabling third-party monthly contributions. Geographic access should be expanded by increasing contractual arrangements with private providers in underserved areas and establishing mobile health clinics. Moreover, employing cultural mediators, producing multilingual educational materials, and strengthening partnerships with international organizations are critical to advancing insurance equity. Ultimately, redesigning policies with the active engagement of government institutions, international agencies, NGOs, and the private sector is essential for effectively mobilizing institutional capacities.

Abbreviations

UHC	Universal Health Coverage
UNHCR	United Nations High Commissioner for Refugees
HTTP	Health Transformation Plan
UPHI	Universal Public Health Insurance
BAFIA	Bureau for Aliens and Foreign Immigrants Affairs

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Data availability
No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate
The study was conducted in accordance with the ethical standards of the Declaration of Helsinki and was approved by the Research Ethics Committee of Isfahan University of Medical Sciences (ethical code: IR.MUI.NUREMA.REC.1402.153). In order to comply with the ethical issues in this study, informed consent was obtained from the participants, and individuals have the right to withdraw and leave the study at any time they want. In addition, the objectives of the study will be explained to the participants at the beginning.

Competing interests
The authors declare no competing interests.

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