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The State of Public Health in Iran during the Reign of Naser al-Din Shah Qajar from the Perspective of Foreign Travelers

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ABSTRACT

The reign of Naser al-Din Shah in Qajar history represents an important yet highly challenging phase for Iran's public health and medical system; a period in which initial efforts were made to organize health and medical services, while at the same time, general sanitary conditions—according to the accounts of foreign travelers—were characterized by a combination of inadequate urban infrastructure, the absence of systematic waste disposal and sewage management, and the widespread prevalence of infectious diseases. Many travel writers of this period described narrow and dusty alleys, the accumulation of garbage in public spaces, and the presence of stagnant water as major factors contributing to the spread of disease. They also pointed to the shortage of trained physicians, the widespread reliance on traditional medicine and popular beliefs, and the lack of adequately equipped hospitals. Diseases such as smallpox, plague, and typhus occurred periodically, reflecting the weakness of the health system. Nevertheless, limited governmental measures—such as the establishment of the Dar al-Funun School, the founding of medical education, the employment of European physicians, and the creation of early medical clinics—were also undertaken during this period. Taken together, these accounts indicate that the health situation in Iran during the Naseri era was in a transitional state. In general, Western travelers who visited Iran viewed the issue of public health in the country from a critical perspective. How foreign travel writers during the reign of Naser al-Din Shah assessed the state of health in Iran is the central question examined in this article. Using a descriptive–analytical method, the present study reviews documentary evidence and travel narratives to provide a comprehensive assessment of the socio-economic impacts of health-related developments of that period on the population and the governing system, while also reflecting the limited role of the central government in responding to public health needs. The findings of this study indicate that, despite initial steps in the field of public health, the reign of Naser al-Din Shah continued to reflect unfavorable conditions and an urgent need for extensive reforms in the health system, the effects of which remained evident until the beginning of the modern era.

Keywords: *public health, Naser al-Din Shah Qajar, foreign travelers, infectious diseases*

Introduction

Studying the state of public health during the reign of Naser al-Din Shah Qajar is of particular importance because this period is regarded as a turning point in the historical transformation of Iran's health and medical systems. In the

mid-nineteenth century, Iran faced fundamental challenges in personal and public hygiene rooted in the social, economic, cultural, and governmental structure of the Qajar era. The absence of coherent public-health organization and the lack of a codified institution to supervise medical practice contributed to the widespread spread of communicable diseases such as cholera, malaria, and other infectious illnesses, which repeatedly threatened society through deadly epidemics (1, 2). From a historical standpoint, recognizing the problems arising from the absence of specialized public-health organizations, Naser al-Din Shah proceeded to establish the *Majles-e Hefz al-Sehheh* (Council for the Preservation of Health), designed to control and monitor physicians' activities and to confront dangerous self-treatment practices among the public. Under this council, physicians were required to undergo an examination and obtain authorization before being permitted to practice medicine—an initiative that, despite its limited scale, represented one of the earliest steps toward modernization in Iran's public-health domain (3). Also notable was the establishment of the Dar al-Funun School at the initiative of Mirza Taqi Khan Amir Kabir, an influential institution of the period that played a significant role in training modern physicians and raising the level of health-related knowledge (4).

On the other hand, the reports of foreign travelers provide a detailed—often critical—portrait of unfavorable sanitary conditions: from environmental contamination and the spread of disease to the lack of urban cleanliness, deficiencies in sewage disposal, and weaknesses in protecting public health, all of which indicated the administrative system's failure to manage population health effectively (5, 6). Traditional medical mechanisms and the widespread use of non-scientific approaches among the general public, together with resistance among various social strata to innovations, further intensified public-health problems (2). Historical assessments suggest that a precise understanding of public health in this period is important not only for the history of medicine, but also for grasping broader social and economic transformations of the time. Examining this topic can, by revealing both efforts and resistances on the path to modernization, facilitate a better understanding of public-health challenges in Iran's modern history and fill a missing link in the country's social and medical historiography.

For this reason, analyzing Iran's public health during the reign of Naser al-Din Shah is key to understanding the broader dimensions of social, political, and cultural transformation in that era. Historically, the analysis of health conditions not only indicates the level of development in this domain, but also reflects wider issues, including the structure of governance, the management of public-health crises, and how society interacted with emerging concepts of modern medicine and hygiene (7, 8). From the perspective of medical sociology, this period offers a window into how social attitudes toward health, treatment, and modern medicine were formed, and how health policies and institutions affected everyday life—insights that can clarify the cultural and social determinants of health (8). The importance of this study also lies in its reliance on primary sources—namely travelogues and reports by foreign travelers—who often described Iran in a relatively detached and descriptive manner and provided detailed observations about health and treatment practices of the time (9, 10). Because these sources intersect directly with the social, medical, and public-health realities of Qajar Iran, they have substantial analytical value. Accordingly, the main problem of this research is the following question: how were public health and healthcare described in foreign travelogues, and what image do these descriptions provide of Iran's health system and the sanitary conditions of society at that time? In response, the study advances the hypothesis that foreign travel writers generally portrayed public health and health services as undesirable and ineffective, and that their reports indicate shortages of health facilities, weak urban sanitation, and the prevalence of communicable diseases as defining characteristics of the period (1, 2, 5).

Review of the Literature and Research Background

A general examination of public health in Qajar Iran within historical and scholarly sources is a topic that can be explored from historical, social, and medical perspectives. According to documents and foreign travelogues, public-health conditions in this period were highly unfavorable and incomplete. The lack of appropriate infrastructure for personal and public hygiene, the absence of effective oversight of therapeutic services, and the spread of communicable diseases such as cholera, malaria, and plague were among the most serious problems of the era (1, 2). Western travelers reported that personal hygiene among the population was at a very low level and that people had limited familiarity with principles of personal cleanliness; bathing in the modern sense was uncommon, and many relied on public bathhouses, which could themselves facilitate disease transmission (6). Environmental hygiene was likewise markedly weak: due to the lack of proper sewage-disposal systems and waste collection, cities became sites of accumulated pollution and disease vectors (5, 6). The presence of public cesspits and contaminated water reservoirs was also reported as a major factor in disease outbreaks (1, 5).

At the same time, the medical system of the period was largely dependent on traditional medicine and non-systematized experience, and scientific, organized medical education had only begun to emerge; nevertheless, the establishment of Dar al-Funun and the limited introduction of modern medicine produced modest changes in this field (4). Despite this, the absence of comprehensive public-health laws and adequate supervision of medical practice meant that therapeutic interventions were often ineffective and fragmented (3, 7). Historical studies further indicate that the need for public-health reform was gradually recognized among elites and statesmen, and intellectuals sought to introduce Western health models and institutions; however, effective reforms required complex structural changes in governance and society (8). Overall, public health in the Qajar era functioned as a mirror of the broader condition of society: a mixture of tradition and limited modern initiatives, deep structural weaknesses, and recurrent public-health crises. Examining these conditions in historical and research sources not only contributes to a clearer understanding of Iran's medical history, but also provides a deeper appreciation of the social and cultural determinants shaping public health (7, 8).

In recent years, numerous studies have examined public health and medicine in the Qajar period and have offered a clear picture of the era's conditions. The research literature broadly agrees that Iran's health conditions in the nineteenth century—shaped by a traditional social structure—suffered from extensive deficiencies, and that despite certain modernization efforts, overall sanitary conditions remained unfavorable (1). Many studies emphasize the role of foreign travel writers as primary sources, noting that these narratives provide critical depictions of personal and public hygiene, the prevalence of communicable diseases, and how the population and government confronted health-related problems (5, 6). For example, studies based on travelogues indicate that the absence of coherent sewage systems, contamination of drinking water, and the lack of appropriate sanitary regulations were among the main drivers of disease transmission (1, 5).

Other research has focused on the expansion of modern medicine in Qajar society and has highlighted the roles of Dar al-Funun and the return of European-trained students in the formation of modern medicine and in early public-health measures such as vaccination and quarantine; however, these developments were preliminary and could not resolve the country's deep public-health problems (4, 11). Additional studies stress challenges such as cultural resistance to modern change, shortages in treatment facilities, and weak supervision over medical practice, concluding that Qajar healthcare constituted a hybrid of traditional medicine and limited modern initiatives that had

not yet displaced the older health order (2, 6). Overall, the research background presents a coherent and well-documented account of public-health conditions in Qajar Iran: efforts were made to introduce modern medicine and public health, yet deep cultural, structural, and managerial problems continued to cast a shadow over population health (7, 8). These studies provide a strong foundation for future investigations and more fine-grained analysis of health and healthcare in this historical period.

Research Methodology

Historical research is among the most important methodologies in the humanities—especially in history and interdisciplinary fields such as the history of medicine and historical sociology. The aim of this method is to reconstruct, examine, and rigorously analyze past events, phenomena, and conditions on the basis of documents, written sources, and credible historical evidence (12). Within this framework, texts, travelogues, governmental documents, reports, and contemporaneous sources are treated as the principal data of the study and are subjected to close analysis in order to produce a coherent and documented account of the research topic. Historical analysis is grounded in understanding the temporal, spatial, social, and political contexts of both the text and its author; accordingly, the text is not viewed as an inert record, but is interpreted within the worldview, dominant ideas, and historical circumstances of its production (12). In the present study—focused on Iran's public health during the reign of Naser al-Din Shah Qajar—foreign travelogues and travelers' reports are used as primary sources that reflect the social, cultural, and medical realities of the period, making their critical analysis through a historical approach essential (1, 10). The methodological steps include extensive collection of travel texts and related documents, assessment of the authenticity and credibility of sources, thematic classification of information, and finally content analysis within the relevant historical framework. Throughout this process, contradictions, conflicting viewpoints, and the intellectual backgrounds of the writers are examined carefully in order to strengthen the comprehensiveness and depth of the final interpretation (12).

Applying this method makes it possible to analyze, with greater precision and detail, the historical trajectories of health transformations, state policies in the health domain, and societal reactions to disease and sanitary reforms. This approach enables the researcher to move beyond purely descriptive reporting and to reach causal explanations, consequences, and the historical meaning of social behaviors related to hygiene and health in the period under study (13). Therefore, in this research, the analytical reading of travelogues and historical documents functions as a key instrument for reconstructing and explaining the complex social and public-health realities of Naser al-Din Shah's era, offering a scientific and interpretive framework grounded in primary sources (12, 13).

Accordingly, in the first step, travelogues and reports are collected through library-based and digital means. The identification of credible sources is carried out using library catalogues, digital archives, specialized references, and scholarly bibliographies. At this stage, in addition to original travelogues, reliable translations are also consulted, as they may contain valuable points and annotations. For instance, a study published in 2009 by Bani Eghbal and Heydari, employing statistical topic analysis of English-language travelogues, emphasized systematic and rigorous procedures for selecting sources; the present research likewise draws on this model (9). In the next stage, data extraction from travelogue texts is conducted stepwise and systematically using qualitative and quantitative content analysis. Through careful, page-by-page reading, topics related to hygiene, health, disease, the structure of the health system, and social behaviors toward cleanliness are identified and recorded. Then, for each travelogue, thematic indicators are extracted and categorized. This thematic classification includes macro-topics such as

personal hygiene conditions, treatment services, disease prevalence, governmental measures, how the population responded, and the oversight exercised by governmental institutions (9).

The importance of analyzing these themes lies in the fact that each traveler wrote from a distinct perspective and intellectual background, leading to different emphases and interpretations. Therefore, the analyst must approach the sources critically and identify divergences and conflicts of viewpoint. This stage involves contextual analysis of each source's historical, cultural, political, and social background in order, first, to determine the reliability and analytical value of the extracted data and, second, to juxtapose varying interpretations in a way that ensures the coherence and integrity of the overall study (12, 13).

The Historical Context of Public Health during the Reign of Naser al-Din Shah

The reign of Naser al-Din Shah Qajar (1848–1896) is considered one of the longest and most eventful periods in modern Iranian history, during which Iranian society, the political order, and the national economy were situated in a complex condition of historical transition. This era was marked by transformations and crises that left profound effects across the social, political, and economic dimensions of life in Iran.

From a social standpoint, Iran under Naser al-Din Shah was a multi-layered and heterogeneous society in which diverse ethnic groups—speaking different languages and adhering to varied cultural and religious traditions—lived across different regions of the country. The social structure was strongly stratified: major groups included the clergy, large landowners, merchants, local governors, guilds, and workers, alongside vast rural populations, tribal communities, and urban groups. The clergy enjoyed a stable position and wide-ranging moral authority, and at times their influence was perceived as stronger than that of the central government. At the same time, many social groups were grappling with livelihood insecurity, poverty, social injustice, and instability—conditions that could generate discontent and protest (7, 8).

Politically, the government of Naser al-Din Shah functioned as a form of absolute monarchy, with power concentrated in the hands of the Shah and his close entourage. Although signs of new administrative institutions and some efforts toward state modernization appeared in this period, governance was undermined by pervasive corruption, inefficient bureaucracy, and weak macro-level management. Iran was also under intense political and economic pressure from imperial powers, particularly Britain and Russia, which constrained the country's autonomy and weakened the authority of the central state while increasing the influence of tribes and local notables (7, 8).

Economically, Iran remained predominantly agrarian and dependent on traditional modes of production. The economic structure was uneven and structurally defective: a large share of the rural population lived in semi-impoverished conditions, while agricultural land was concentrated in the hands of major landowners who benefited from relatively secure revenues. Modern industrial and economic transformations occurred only on a very limited scale. Efforts were made to establish factories and initiate early industries, but these measures did not yet produce broad-based effects on the national economy. Weak fiscal and taxation structures, recurrent economic crises, and inadequate transportation infrastructure and market development rendered economic conditions fragile (7, 8).

In sum, the era of Naser al-Din Shah was a period in which Iranian society stood at the threshold of modernization and structural change, yet simultaneously confronted extensive social, political, and economic problems. A plural and class-stratified society, a political structure grounded in absolute monarchy and external pressures, and a dependent and traditional economy jointly constituted the conditions that shaped the complexities and challenges

of the period—conditions that naturally exerted a substantial influence on public health and population well-being in Iran (8).

The reign of Naser al-Din Shah Qajar can also be regarded as the beginning of transformations in Iran's health and medical systems, although these systems were still highly incomplete and rudimentary and faced wide-ranging challenges in organization, implementation, and service coverage. In this period, despite the widespread prevalence of communicable diseases and serious sanitary problems, a nascent health structure emerged through limited measures, among which the most important was the establishment of the *Majles-e Hefz al-Sehheh* (Council for the Preservation of Health) (3, 7).

The *Majles-e Hefz al-Sehheh*, established in 1868 upon the proposal of Dr. Tolouzan (Toulousezan), the royal physician and a teacher at Dar al-Funun, represented the first centralized state body aimed at supervising public health and controlling communicable diseases in Iran (3, 11). With its senior authority formally linked to the Ministry of Public Benefits and its executive leadership attributed to Dr. Tolouzan, the council sought to improve public health through oversight of physicians, regulation of medical practice, facilitation of vaccination, and the implementation of quarantine measures (3, 11). Nevertheless, limited funding and the absence of comprehensive organizational capacity repeatedly disrupted its functioning, leading to fragmented and sometimes intermittent activity (3).

In the domain of healthcare delivery, Dar al-Funun played a pivotal role as Iran's first modern medical educational institution by training physicians in modern medicine and contributing to the elevation of medical knowledge (4). In addition, newer hospitals and treatment facilities gradually took shape—such as the Naseri *Dar al-Shafa* for military personnel and specialized institutions (e.g., ophthalmic services and women's healthcare facilities)—some of which integrated European architectural patterns and played a notable role in the provision of initial clinical services (4). Other bodies also operated within the broader framework of public health, including municipal physicians responsible for environmental sanitation oversight in urban settings (e.g., monitoring food quality, supervising markets, bathhouses, and public spaces). Even so, harsh urban environmental conditions, inadequate waste collection and sewage disposal infrastructure, and weak enforcement of sanitary regulations meant that public-health conditions remained highly unfavorable (1, 5, 6).

Overall, the health and medical system during the reign of Naser al-Din Shah Qajar can be characterized as an emerging but fragmented, inefficient system lacking strong infrastructural foundations. Although it marked an initial trajectory toward health modernization, it faced serious financial, organizational, and cultural constraints—such as inadequate budgets, resistance within traditional society to modern reforms, and weaknesses in medical training and supervision—conditions that contributed to the continued spread of infectious diseases and the persistence of major sanitary problems (7, 8, 14).

Describing Personal and Public Hygiene from the Perspective of Foreign Travelers

Foreign travelers who visited Iran during the reign of Naser al-Din Shah Qajar provided numerous descriptions of personal and environmental cleanliness among the population of the period, and these accounts often depict an unfavorable and difficult situation. In the view of some observers—including physicians and travel writers—many people were portrayed as lacking even basic awareness of hygiene and as living amid extensive pollution and filth (2, 6, 10).

This perspective reflects the presence of culturally embedded misconceptions and limited knowledge of personal hygiene, rooted in long-standing traditions and harsh social conditions (5, 6).

Gaspar Drouville, a French Traveler and Officer

Gaspar Drouville, a French traveler and military officer, resided in Iran during 1812–1813 and undertook a substantial journey that resulted in one of the most important travelogues of the Qajar era. In his travel account—published in 1828—Drouville adopted a precise and observant approach to multiple aspects of everyday life, culture, customs, and especially the hygienic practices of Iranians (15). One of the most salient points in Drouville's descriptions concerns personal hygiene. He reports that after eating with their hands, Iranians typically washed only their right hand with lukewarm water, while leaving the left hand—often used for non-hygienic purposes—uncleaned. In his view, this practice was hygienically undesirable and potentially hazardous because it could facilitate disease transmission. He also describes behaviors such as rinsing water in the mouth and wiping the beard and face with repeatedly used and dirty cloths, observations that indicate limited hygienic awareness and constrained access to sanitary resources (15).

He further offered critical remarks about the weakness and unsatisfactory character of hygiene observance among the upper strata of society, particularly elites and nobles. For example, the improper and infrequent changing of handkerchiefs—often without washing or cleaning—was presented as a clear instance of neglecting hygienic considerations. That such practices were observed among individuals of higher social status suggests that the absence of a robust public-health culture extended beyond lower classes and affected society more broadly (15). Drouville, in addition to describing hygienic habits, also refers to environmental conditions and public hygiene, portraying Iranian cities as facing difficult and problematic circumstances. Environmental contamination and the lack of adequate cleanliness infrastructure produced unpleasant conditions which—combined with deficient personal habits—effectively threatened population health. Overall, Drouville's critiques reflect the acute public-

health difficulties of Iran in the early Qajar period, the resolution of which required fundamental measures and cultural and institutional reforms (15). Although his observations pertain to the early nineteenth century, they illuminate a range of hygienic and cultural problems that persisted into later decades. Consequently, Drouville's travelogue constitutes a valuable source for better understanding the cultural and social underpinnings of personal hygiene in Iranian history (15).

Edward Jakob Pollak

Edward Jakob Pollak, the personal physician of Naser al-Din Shah and a professor at Dar al-Funun, is among the most valuable and credible sources for understanding public health and the everyday life of Iranians in the Qajar period (1). He resided in Iran for more than nine years and, due to his special position at court, had privileged access to social realities that he documented carefully in his accounts (16). Pollak offers a relatively more differentiated description of personal hygiene practices across different social classes. He notes that among higher strata, the use of drying cloths/handkerchiefs to clean the nose was common, which can be interpreted as a sign of rudimentary adherence to personal hygiene; however, among lower strata, people often used their bare hands for cleaning the nose and similar practices—an approach that, from a sanitary standpoint, was highly undesirable and could increase pathways of disease transmission (16).

Pollak also observed that clothing cleanliness among lower social groups was very limited. Many poor individuals possessed only a single set of clothes, which they washed perhaps once a year using cold water and weak plant-based soaps, thereby reducing effective personal hygiene. This condition, alongside infrequent and irregular bathing, contributed to lowering the overall level of public hygiene (1, 6).

Pollak addressed environmental hygiene with considerable attention as well. He reported that sewage disposal was handled through traditional and inefficient means and that waste was often not collected in a sanitary manner. These environmental conditions not only diminished quality of life but also created a setting conducive to the spread of communicable diseases with which both the state and society were persistently confronted (1, 2, 14). Overall, Pollak's perspective—shaped by his role as a court physician and his close proximity to the royal household—maintains a measure of balance in criticism while still presenting a documented and comprehensive picture of personal hygiene, clothing practices, and environmental sanitary conditions in Qajar Iran, in ways that align with other travelers' reports (1, 16).

Heinrich Karl Brugsch

During the Qajar period—especially in the time of Naser al-Din Shah—sewage disposal was among the fundamental challenges of urban public health in Iranian cities, particularly Tehran and Isfahan. It was repeatedly recognized as a major factor in environmental contamination and the spread of infectious diseases. Although certain experiences and rudimentary techniques for sewage handling existed, their implementation was incomplete and, in some cases, generated new problems (1, 14). One of the travelers who referred to sewage disposal in his accounts is Heinrich Karl Brugsch, a member of the Prussian mission to Iran in the Naseri era. He reports that while Isfahan had a more distinctive method—whereby waste was conveyed underground into storage vaults through channels—Tehran's sewage disposal was largely unstable and deficient. He notes that household wastewater often flowed into alleys and streets, creating a polluted and unsanitary environment, even though some transfer of waste beyond the city was also practiced (1, 6).

A common method in many cities involved absorption pits or septic-like basins that collected human waste; however, the lack of an orderly piping system and adequate infrastructure meant these pits filled quickly or leaked, and their contents frequently mixed with drinking water sources and surface waters. Such conditions not only contaminated consumable water but also facilitated the spread of diseases such as cholera and malaria (1, 14). In some cities, including Tehran, waterways and canals were used to channel portions of wastewater and surface runoff; yet deterioration and weak oversight intensified contamination, contributing to foul odors and associated health problems (1, 6).

Sewage disposal practices were also linked to local agricultural activity. In certain areas, collected human waste was transported for use as fertilizer; however, because this was carried out in an irregular and non-systematic fashion, sanitary risks persisted. Brugsch also suggests that transferring waste beyond city limits could be a positive measure, but that insufficient attention to the manner and timing of transfer limited its benefits (1). Overall, sewage disposal in the Qajar period—due to the absence of modern infrastructure, weak urban management, and technical and financial constraints—was inefficient and became a key driver of intensified environmental-health problems and public-health risks in Iranian cities, creating a need for major structural and technological reforms that would only begin in later periods (1, 7, 14).

Jean Chardin

Jean Chardin, a French jeweler and seventeenth-century traveler, visited Iran twice, in 1665 and 1671, and resided in the country for a relatively extended period. His detailed travel narratives—published under the title *Chardin's Travels to Iran*—are regarded as among the most credible Western sources on Safavid Iran and have exerted a notable influence on understandings of Iran's culture, economy, politics, and health conditions in that era (17).

Chardin not only describes Iran's political and social structure with substantial care, but also attends closely to the nuances of everyday life, including hygienic customs and environmental conditions. In his reports, he refers to aspects of personal hygiene, cleanliness, bathing practices, and public sanitation in ways that reflect the depth and precision of his social observation (17). Drawing on extensive travel experience and prolonged residence, he offers a relatively comprehensive account of hygienic conditions in Safavid Iran—patterns that, in certain respects, continued into later historical periods as well (17). He learned Persian and established close ties with court circles and Iranian officials, which enabled access to more detailed information and closer attention to social detail (17). Chardin's travelogue contains numerous descriptions of urban cleanliness, personal hygiene, therapeutic practices, and the cultural significance of the public bath (*hammam*) within Iranian society. He points to the vital role of bathhouses in Iranian hygiene and portrays them as important cultural and social institutions in everyday life (17). He also provides detailed notes on water-supply networks, sewage disposal practices, and public cleanliness in major cities of his time, reflecting early forms of urban-sanitation organization. His attention to disease response and therapeutic efforts further underscores how limitations and infrastructural deficiencies could nonetheless generate serious public-health challenges (17). Overall, Chardin's travelogue is a rich, documented, and largely observational source that reflects Iran's historical social, cultural, and hygienic conditions through an empirical lens and can be particularly useful for understanding the longer-term background against which later periods—such as the Qajar era—should be interpreted (17).

Comparison of Iran's Situation with Contemporary Countries

In comparison with contemporary countries in the region and in the West, Iran's public-health conditions during the Qajar period occupied an unfavorable position and exhibited a considerable gap in scientific, organizational, and executive terms. While several contemporaneous countries in Asia and Europe were gradually moving toward more coherent health systems and the application of modern medical sciences, Iran remained constrained by a traditional structure, the absence of public-health infrastructure, and managerial weaknesses that impeded improvements in population health. From the perspective of medical history, Western European countries—particularly England, France, and Germany—underwent scientific and industrial revolutions in the nineteenth century that enabled the establishment of organized health systems and well-equipped hospitals, in which modern medical education and advanced patient care were considered governmental priorities. Public-health reform movements, large-scale vaccination policies, urban sanitation, and public awareness campaigns aimed at preventing disease spread took shape in these countries (4).

By contrast, regional countries such as the Ottoman Empire and Egypt also gradually turned toward reforming their health systems. Although limitations persisted and their systems remained partly traditional, their governments nonetheless undertook efforts to establish treatment centers, train physicians, and control communicable diseases. Owing to closer ties with Europe, these countries enjoyed greater opportunities for transferring modern medical knowledge and sanitary infrastructure (2). Iran in the Qajar period—despite the presence of European physicians and the establishment of Dar al-Funun—still lacked an integrated public-health system and unified medical education, and governmental measures to confront diseases and improve public hygiene were fragmented and insufficient. Weak oversight of treatment, the absence of comprehensive sanitary laws, shortages of healthcare facilities, and inadequate urban health management allowed cholera, malaria, and other communicable diseases to persist widely (1, 5). In addition, infrastructural problems—such as water and soil contamination, poverty, limited sanitary resources, and nutrition-related illnesses—exacerbated conditions in Iran, while Western countries benefited from superior facilities, environmental hygiene, and advanced education. Accordingly, the gap between Iran and advanced Western countries in health and medicine reflects a historical lag whose remediation required profound cultural, social, and political transformations. As a result, comparing Iran with regional and Western countries in the same period clearly demonstrates that, although Iran undertook initial and limited efforts in public health, it had not yet embarked upon full modernization and faced numerous challenges that significantly undermined population health. This comparison underscores the necessity of reform and provides a foundation for new comparative studies and for drawing on others' experiences in historical foresight.

The Impact of External Interactions on Public-Health Conditions and Reforms in the Qajar Period

The Qajar period—especially the reign of Naser al-Din Shah—constitutes a turning point in the history of health and medicine in Iran, as it coincided with the impactful entry of Western modern medical ideas, knowledge, and technologies, which exerted important effects on sanitary conditions and reform initiatives. Iran's external interactions with European countries, the dispatch of physicians, the education of Iranian pharmacists and doctors in Europe, and the translation of Western medical texts into Persian laid the groundwork for the nascent modernization movement in public health. The arrival of foreign travelers and European physicians functioned as a catalyst that shed new light on medicine and public health. Foreign physicians, in addition to treating court patients,

assumed responsibilities for introducing modern medicine and training Iranian practitioners (10). A notable example is Dr. Tolouzan, the French physician to Naser al-Din Shah, who played a central role in establishing the *Majles-e Hefz al-Sehheh* (Council for the Preservation of Health) and implementing sanitary programs such as smallpox vaccination (3, 11).

During Amir Kabir's premiership, a foundational shift in public health began, influenced in significant part by engagement with Western sciences and health systems. Drawing on European models, Amir Kabir sought to create modern therapeutic and preventive structures nationwide. Key measures included establishing new medical schools (Dar al-Funun), allocating budgetary lines for health, and initiating early legislation to improve public health (4). These interactions were not limited to medical knowledge and treatment protocols; they also produced broad cultural and social effects. Familiarity with concepts such as personal hygiene, environmental cleanliness, quarantine, and vaccination penetrated deeper levels of society and contributed—even among the populace and ruling strata—to shifts in attitudes toward the importance of public health (8). Modern Western sanitary science, transmitted through physicians, documents, and foreign travelogues, gradually fostered a new cognitive framework within society.

These external influences prompted the Qajar state to initiate new efforts to combat communicable diseases, including vaccination programs, port quarantines, and the establishment of specialized hospitals. Despite persistent problems and cultural resistance, such measures gradually led to the formation of formal and semi-modern health and treatment structures (7, 11). Nonetheless, financial constraints, infrastructural weaknesses, and social tensions impeded the full realization of sanitary reforms. Moreover, complex political interactions with imperial powers at times generated unfavorable pressures and discouragement within the court, slowing reform processes. Even so, successful European experiences served as a motivating reference point for the development of Iran's health and medical culture.

In conclusion, external interactions—despite their challenges and limitations—played a crucial role in transforming the scientific, professional, and administrative foundations of public health in Qajar Iran and paved the way for subsequent advances in the post-Qajar period (7, 8).

Conclusion

The study and analysis of public health and medical conditions in Iran during the Qajar period—particularly under the reign of Naser al-Din Shah—reveal a complex and multifaceted picture of challenges, efforts, and limitations in the sphere of public health. Owing to the distinctive social, economic, and political circumstances of the time, shaped by a traditional structural framework and crises resulting from both internal and external pressures, the state of personal and public hygiene among the population was profoundly affected. Travelogues and reports by foreign travelers, as primary sources, played an irreplaceable role in accurately documenting these realities and made it possible to reconstruct this situation through scientific and historical analysis. The findings of this research indicate that although Iran's health and medical structure in this period showed initial signs of modernization—such as the emergence of formal institutions and the presence of European physicians—its impact on improving public health remained limited due to structural weaknesses, inadequate infrastructure, insufficient education, and cultural resistance. Multiple factors, including environmental pollution, deficient personal hygiene, the spread of infectious diseases, shortages of medical facilities, and the absence of effective order and legislation, contributed to the persistence of public-health problems. The influence of external interactions and the transfer of modern medical

knowledge from the West constituted a hopeful turning point, as early reform efforts began with the establishment of institutions such as Dar al-Funun and the Council for the Preservation of Health. Although these developments were preliminary, they laid the groundwork for later progress in Iran's health system; however, their insufficiency throughout the remainder of the Qajar period meant that difficult sanitary conditions persisted. A comparison between Iran's health situation and that of contemporary countries in the region and Europe demonstrates that Iran lagged significantly behind advanced and organized Western models in the modernization of public health and medical care, underscoring the urgent need for deeper and more comprehensive reforms. This historical experience offers valuable lessons regarding the importance of health infrastructure, medical education, crisis management in public health, and the acceptance of new knowledge by society and the state. Ultimately, this research emphasizes the importance of attention to the country's medical and public-health past so that, through understanding historical strengths and weaknesses, a more optimal path toward the sustainable development of the health system can be designed for the future. Drawing on reliable historical sources and multidimensional analyses can contribute to more advanced research in the history of medicine, the sociology of health, and health policy, and can open new avenues for a deeper understanding of Iran's cultural, scientific, and social transformations.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adhered in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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