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Review Article

Epidemics and Healthcare Evolution in Kutch, India (1800-1947): A Historical Perspective on Communicable Diseases

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A B S T R A C T

This research, Epidemics and Healthcare Evolution in Kutch (1800-1947): A Historical Perspective on Communicable Diseases, explores the evolution of healthcare in Kutch, emphasising the coexistence and transformation of indigenous and modern medical systems. The region, known for its distinct geographical and socio-cultural identity, witnessed significant changes in healthcare due to recurrent epidemics such as plague, cholera, and smallpox. These outbreaks gave opportunity to colonisers to go for incorporation of Western medicine, alongside prevailing Ayurveda and indigenous healing practices like Unani, Siddha, and naturopathy. The study examines how geological factors, historical events, and socio-political influences shaped healthcare strategies in Kutch, leading to the establishment of dispensaries and state-sponsored medical interventions. Using archival sources, historical records, and government reports, this research highlights the role of local leadership, community resilience, and colonial policies in epidemic management. By situating Kutch's medical history within a broader socio-cultural and environmental framework, this study provides valuable insights into the intersection of traditional medicine and public health, offering perspectives relevant to contemporary infectious disease management and healthcare planning.

Keywords: Indigenous Medicine, Communicable Diseases, Epidemic Control, Ayurveda, Public Health in Kutch, Colonial Healthcare, Plague, Cholera, Smallpox

Introduction

The history of medicine is crucial for study, as it provides valuable insights into the evolution of healthcare practices and their impact on society. Medical history offers a sense of continuity with professional traditions, especially during times of rapid change in the field.[1] It serves to gain perspective on recent radical changes in healthcare and helps students understand that medical knowledge is subject to change and acquired in specific contexts.[1]

Beyond its academic and professional relevance, medical history plays a crucial role in understanding past epidemic responses, the evolution of quarantine policies, vaccination efforts, and the role of indigenous healing practices in disease control. The study of historical medical interventions offers valuable insights into how societies responded to infectious disease outbreaks, such as the plague, cholera, and smallpox, shaping the trajectory

of public health infrastructure. These historical disease outbreaks highlight the importance of early detection, rapid response measures, and the implementation of indigenous and scientific knowledge in mitigating public health crises.

Interestingly, the importance of medical history has evolved over time. In the late nineteenth century, it was taught to impart a sense of refinement to medical practitioners, while in the late twentieth century, it became viewed as a significant dimension of the professional, intellectual, and humanistic development of medical students.[1] This shift in perspective highlights the growing recognition of medical history's relevance in shaping future healthcare professionals.

Interestingly, the importance of medical history has evolved over time. In the late nineteenth century, it was taught to impart a sense of refinement to medical practitioners, while in the late twentieth century, it became viewed as a significant dimension of the professional, intellectual, and humanistic development of medical students.[1] This shift in perspective highlights the growing recognition of medical history's relevance in shaping future healthcare professionals. Additionally, an analysis of medical history reveals the resilience of societies in adapting to emerging health challenges. For example, historical records highlight the effectiveness of traditional herbal treatments, isolation measures, and ritualistic healing practices in combating communicable diseases.[2] Furthermore, the examination of historical medical practices provides a comparative perspective on indigenous medicine, community-led health responses, and their integration into modern healthcare systems. Many traditional healing methods have influenced contemporary medical approaches, particularly in preventive medicine, holistic healthcare, and the management of infectious diseases in resource-limited settings.[3]

The study of medical history also offers insights into pandemic preparedness, drawing parallels between historical outbreaks and contemporary global health crises such as COVID-19, cholera resurgence, and antibiotic resistance. By evaluating past responses to pandemics, researchers can better assess the long-term impacts of disease outbreaks on healthcare systems, economic stability, and social structures.[4] The lessons learnt from historical pandemics, such as the implementation of large-scale immunisation programmes and community-driven sanitation reforms, continue to shape public health strategies today. Lessons from historical epidemics highlight the importance of early detection, public health interventions, and the balance between traditional and modern medical knowledge in combating infectious diseases.[2]

Thus, studying the history of medicine is essential for understanding the social and contextual nature of medical knowledge. By integrating historical perspectives on epidemics, indigenous medicine, and evolving public health policies, students and researchers can gain a deeper understanding of disease control strategies, medical advancements, and healthcare sustainability, reinforcing the relevance of medical history in contemporary health discourse.

Research Methodology

This research employs a doctrinal and qualitative method, utilising archival documents and historical writings obtained from multiple libraries around Kutch. This includes the District Library of Kutchh, Rotary Library and Madhavpur Library. The research examines primary sources, including government reports, royal decrees, and medical dispensary records, to trace the development of the medical system in Kutch from 1800 to 1947. Also, epidemiological records and local health reports have been considered to contextualise the prevalence and management of communicable diseases in the region. Secondary sources, including books, journals, and historical narratives, offer supplementary context and perspectives. The research provides a picture of the region's healthcare development by examining the merging of ancient medicinal systems such as Ayurveda and indigenous practices with the advent of modern Western medicine during the colonial period. Special attention is given to how indigenous healing traditions coexisted with, resisted, or adapted to Western medical interventions in response to major outbreaks such as plague, cholera, and smallpox. This study utilises archival data and historical literature to thoroughly examine the relationship between medicine, society, and culture in Kutch, so enhancing the greater discourse on the history of healthcare in India. By integrating historical disease patterns and indigenous healthcare approaches, the study contributes to a broader understanding of medical history and its relevance to contemporary public health discussions.

History of Medicine in Kutch

The history of medicine in Kutch can provide valuable insights into the region's broader history, particularly in understanding its geological, social, and cultural aspects: Geological and environmental factors have played a significant role in shaping Kutch's medical history. The region's unique geological features, such as the Kutch Mainland Fault (KMF) and the newly discovered Jakhau–Mundra Fault (JMF), have influenced the area's susceptibility to earthquakes.[5] These seismic events have likely impacted public health and medical practices over time, as evidenced by the widespread liquefaction and related damage during past earthquakes.[6] The study of historical medical practices and health issues in Kutch can reveal important information about the region's social and cultural development. For instance, understanding

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how local communities dealt with health challenges in the past, particularly in response to major events like the 1819 earthquake, can provide insights into the resilience and adaptability of the population.[5] Furthermore, examining the history of medicine in Kutch through the lens of geo-heritage can offer a unique perspective on the region's development. The Kutch basin, with its rich geological record spanning approximately 200 million years, serves as a natural museum for various scientific disciplines, including palaeontology and stratigraphy.[7] This geological history may have influenced local medical practices, such as the use of specific minerals or plants for medicinal purposes. In conclusion, studying the history of medicine in Kutch can provide a multifaceted understanding of the region's past, encompassing geological, environmental, social, and cultural aspects. This approach aligns with the concept of using historical thinking to develop better insights into the future, as suggested in the context of scenario planning.[8] By examining the interplay between medicine, geology, and society in Kutch's history, researchers can gain a more comprehensive understanding of the region's development and its potential future challenges.

Kutch, the largest district in Gujarat and a former princely state, derives its name from "Kachbo," meaning turtle, owing to its unique shape. Despite being part of the Indian subcontinent, Kutch has successfully preserved its distinct identity both geographically and socially. The region's natural beauty, including deserts, rocks, archaeological sites, and handicrafts, has significantly contributed to its historical prominence. An examination of the medical system in Kutch's history reveals that it was modernised as any other principality or British state prior to independence.

Interestingly, the spread of epidemic diseases in the 19th and early 20th centuries played a crucial role in the evolution of Kutch's medical system along modern lines. Before the introduction of modern allopathic medicine, Ayurveda was the predominant mode of treatment. The Unani system, brought by Muslims to India, did not gain popularity in Kutch. Vaidas and Sadhus commonly use local herbs and antidotes to treat ailments. In cases of uncommon or difficult-to-treat diseases, lower-strata individuals often turn to deities for intervention, attributing outbreaks of cholera and smallpox to the wrath of supernatural forces.

With the arrival of the British in India, Western medicine was gradually introduced and gained popularity owing to its scientific approach and the rapid relief it provided.[9]

Diseases in the History of Kutch (1800-1947)

Throughout the 19th and 20th centuries, Kutch experienced various endemic and epidemic diseases that had a significant impact on society. Notably, three major plague outbreaks have resulted in a substantial loss of life. Plague, an infectious disease caused by Yersinia pestis, primarily affects rodents and can be transmitted to humans via direct contact with respiratory droplets. Symptoms of bubonic plague include headache, malaise, and high fever, with untreated cases having a mortality rate of 30–90%.

India has a long and complex history with plague, particularly in the Gujarat region. The country experienced an estimated 12.5 million deaths during the plague pandemic of 1889-1950.[10] This period marked a significant watershed moment in India's colonial history, with the bubonic plague outbreak beginning in 1896 and the influenza pandemic of 1918-19.[11] Interestingly, after decades without confirmed human plague cases, India faced outbreaks of both bubonic and pneumonic plague in the 1990s, primarily in the states of Maharashtra and Gujarat.[10] This resurgence raised concerns about the spread of the disease by travellers and challenged public health authorities' preparedness to deal with a disease they had long considered outdated. The history of plague in India, particularly in Gujarat, demonstrates the complex interplay between disease, society, and governance. While some draw parallels between colonial-era outbreaks and contemporary events, others caution against oversimplifying these comparisons.[11] The recurrence of plague in India highlights the persistent threat of infectious diseases and the need for continued vigilance and preparedness in public health systems.

The term "Mahamari" was used in India to describe the plague, which swept through Europe in the 14th century as the "Black Death." The first recorded epidemic in India occurred in Agra in 1612. Kutch witnessed plague outbreaks in 1815, 1897-98, and 1927-28, after which its incidence sharply declined. The last significant outbreak in India occurred in 1994, primarily affecting Maharashtra and Gujarat but was quickly controlled with minimal mortality.

The first bubonic plague outbreak recorded in Gujarat around 1815 resulted in heavy mortality, with estimates suggesting that nearly half of the population was affected. The plague re-emerged towards the end of the 19th century, impacting numerous villages, and was effectively managed by local leaders, including Khengarjirao, as noted in Lord Curzon's favourable report to Queen Victoria.

Cholera

Cholera has a long and significant history in India, with the region being the origin of six out of the past seven global pandemics.[12] The Indian subcontinent, including India and Bangladesh, has been a hotspot for cholera outbreaks throughout the 19th century and beyond.[13] In Gujarat, cholera outbreaks are closely linked to the state's climate and geographical features. Gujarat experiences seasonal temperature variations, frequent heat waves during summer, and inconsistent rainfall

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during the monsoon season, which can lead to droughts and potentially contribute to cholera outbreaks.[14] While Gujarat is not specifically mentioned as one of the most affected states in recent years, it is part of the broader Indian context where cholera remains a significant public health concern. The history of cholera in India is marked by underreporting and inadequate surveillance. A study comparing reported cases to WHO with actual cases found in the literature revealed that the true incidence of cholera in India is about six times higher than officially reported.[15] This underreporting can have serious implications for public health interventions and risk assessments.[16] The emergence of new strains, such as the Vibrio cholerae O139 serogroup in 1992, has further complicated the cholera landscape in India.[17] improvements in water and sanitation access, cholera cases remain high due to various socio-economic and environmental factors.[12,18]

Cholera, which is caused by Vibrio cholerae, is primarily transmitted through contaminated food and water. Symptoms include severe diarrhoea, vomiting, and muscular cramps. Cholera was not prevalent in Kutch until 1876, when it appeared in a virulent form, leading to numerous deaths. Subsequent outbreaks in 1878 further exacerbated the situation, prompting the distribution of medicines and establishment of medical relief efforts.

Smallpox

Smallpox has a long and significant history in India, including the state of Gujarat. The disease is believed to have emerged in the Indian subcontinent approximately 2500-3000 years ago, leading to its endemisation as an anthroponotic infection that persisted until its eradication in the 20th century.[19] This timeline aligns with the broader historical context of smallpox, which affected human populations for thousands of years.[20] In Gujarat, the history of smallpox is intertwined with the region's broader health challenges. While specific historical records of smallpox in Gujarat are not provided in the given context, the state has faced various disease outbreaks. For instance, an outbreak of encephalitis with a high case fatality rate was investigated among children in Gujarat State, although this was later attributed to the Chandipura virus rather than smallpox.[21] Additionally, Gujarat has been identified as a region with a significant presence of beta-thalassaemia, a genetic disorder that may have been influenced by natural selection due to malaria infection.[22] In conclusion, while detailed information specific to smallpox in Gujarat is limited in the provided context, the disease's long history in India is well established. The eradication of smallpox in 1979 following intensive vaccination campaigns.[20] marked a significant milestone in public health, not just for India and Gujarat, but globally. However, the potential threat of smallpox reemergence remains a concern, highlighting the need for continued vigilance and research in this area.[23,19]

Smallpox, a viral disease that spreads through respiratory droplets or contaminated objects, has an incubation period of 12 days. Symptoms include high fever, headache, and skin rash. In Kutch, smallpox cases were reported in 1895-96 and 1907, with significant fatalities. The worst epidemic occurred in 1938-39, prompting mass vaccination efforts under the Epidemic Diseases Act of 1897.

Role of the State and Aristocracy in Managing Epidemics

The development of Kutch's medical system was significantly influenced by the state's response to the epidemic. While the state was not initially focused on public health, it became actively involved during outbreaks of diseases, such as plague and cholera, establishing medical relief camps across the region. Philanthropic individuals also contributed to this by funding private dispensaries and medical facilities.

As per the Gazetteer of the Bombay Presidency, Volume V: Cutch, Palanpur, and Mahi Kantha, compiled by James Macnabb Campbell and published in 1880. The first dispensary in Kutch opened in 1849 and evolved into a ten-bedded hospital by 1860. This facility expanded further during Queen Victoria's Golden Jubilee in 1887, becoming the Jubilee Hospital in Bhuj. By the time of India's independence, the government had established a functioning medical system, including hospitals and dispensaries across the region.

The Indigenous System of Medicine

The Kutch is outstandingly rich in its natural resources, whether its minerals or flora and fauna. Medicinal plants in Kutch are found in excellent number. As per the A Report on Medicinal Plants of Kachhh, (Gujarat) published by the Central Council for Research in Ayurveda and Siddha (CCRAS), Ministry of AYUSH, Government of India (2004) Out of 83 important medicinal Plants of Gujarat, 39 are found in Kutch, i.e., almost 47% of the medical plants which are found here. The vaidyas and Brahmins used the indigenous medicine even to cure the severe problems. One of the prominent botanists of Gujarat, Jaykrishna Indrajit (1857 to 1929), who was originally from Lakhpat (Kutch), contributed to the development of Kutch's own herbal medicinal system. Jaykrishna Indrajit not only invented several medicines for routine diseases, but he was also successful in discovering medicine to cure plague.[24] Around 1904 he also wrote a book, namely 'Jadi Butti', and frequently published his research work in 'Vaidh Kalpataru' and other magazines. A list of indigenous medicines traditionally used in Kutch is provided below in Table 1.[25]

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Table 1.list of Indigenous medicines of Kutch

Botanical Name Promities and Classification	Local Name	Properties /Uses
Tubisor/ira nuers	Charvel, Gaw Gadu (K)	Juice is taken as medicine in case of fever and other d.
Cocoulus D C (Menispermaceae)	Vasan, Tanel Vndhinovelo Car, Vaghai (K)	Decoction is used in Kidney Trobules skin disease etc.
Papaveranceae Cleome Linn	Darudi Pingadio (9) (s) Darnoli Darudi (K)	Juice and seeds and reported to be used in skin disease.
Cleomaceae Cleome Linn	Baghado (K)	The juice of leaves is used in ear trouble.
Capparaceae Maerua Forsk	Dhle Katakiye, Hemkand Katakial	Root is considered tonic wood is used for making drams and lombs and in tennary.
Cratoeva Linn Cababa Forsk	Chiini, Zil (Cr) Pranstav (s) Lai (K)	Galls formed on leaves and bark used for tanning and dyeing.
Malvaceae Urena Linn	Vagadaubhindi (as) Jan Bhindi (K)	Juice used in Skin trouble
Thespesia Solamd	Bhindi, Paraspapado	Juice used in Skin trouble
Streculiaceae Helicteres Linn	Anted or Marged Shingi	Useful in intestinal disorder
Tiliaceae Grewia	Gangai (K)	The ripe fruit are eated.
Traim Fetta Linn	Her Bhurat	Leaves are eaten by cattle.
Simat oubaceae Ailanthus Balanitaceae balantes	Aduso, alvo Vadonim Hingoir/a Angariya CK	The pulp of the fruit is used for skin applications
Leliaceae	Backem Lindo Bakamnim/Jhaninim (k)	Juice of the leaves relieves cold and swelling
Celasteraceae Celasturs	Malkanikangar (a)	Drug shoots is applied to swelling
Sapindaceae cardiospermum	Karasadio/Kapalagadi Bakankokai valjojti tridariwal	Juice reduces swelling; used in the ear for earache relief.
Morinagaceae Moringa	Sargano/mitho Sargano (G.K.)	The young leaves are useful in scurvey and catarrahal disease, good for all purpose.
Leguminosae Pabaceae	Adodiya Shiri (G) Undekani (k)	Its paste is used for treating boils.
Cacthceae opanitahaw	Thori, Hathlo Ch hor (G)	Its paste is used for treating boils.
A langiaceate Alangium lamk	Ankd/ Ankote	Roots used for skin Disease.
Asteraceae Velnonia	Schadevi, Sedari (a) Thopval, Sapval, Kopval (k)	Used as medicine over wounds and sores; used for skin diseases.
Plambaginaeae Plumbago Linn	Chitra Chitro Dhole	Used in Skin Disease.
Eberaceae, Diospyros Linn	Tinur, Timbarno Timri (g)	Leaves used for bidi making; ripe fruits are edible

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Salvadora, cae Salvadora Lirn	Moto akds, ak akdo, admani (white)	The fibre used in making fishing net; floss from fruits used for stuffing pillows.
Convolvulaceae Cuscuta	Amarvel Sonvel Namali Makhanial/ makhanval (R)	Parasitic plant (dodder) used in Ayurveda for liver disorders, jaundice, and urinary issues. It acts as a general tonic and diuretic. It is applied topically for skin diseases and inflammation.
Solanaceae Solanum	Bethi ringi/bhoin rigni Pat ringi`	Used for respiratory ailments (cough, asthma) and fever. Leaves/fruits may treat digestive issues and inflammation.
Padaliaceae Pedalium	Goghru/Ubhugokhru Kadua Gokhru.	The fruit is used urinary trouble.
Martyniaceae martynia annua	Vinchhudo, Vaghnakh	Hook-shaped fruits used for inflammatory conditions, boils, and wounds (poultice). Traditional remedy for earaches and skin infections.
Acnthaceae Hygrophila	E kharu, ikarigo, ikro	Kidney and urinary health (diuretic, dissolves stones). Treats jaundice, liver disorders, and improves vitality. Seeds/roots used in Ayurveda (Kokilaksha).
Avicenniaceae A vicennie	Cher Tavri, Tavara/Takas bakal	Mangrove plant used for skin ulcers, rheumatism, and boils. Bark as astringent; leaves for fever and diarrhea.
Nyctaginaceae Boerhavia	Panarnaea, Vasedo	Diuretic for kidney disorders and edema. Supports liver health and reduces inflammation. Rejuvenative in Ayurveda.
Chenopodiaceae Salinornia	Along the coastal area of Kutch	Edible halophyte rich in minerals and antioxidants. It is used for detoxification, obesity, and diabetes. Acts as a diuretic and nutrient supplement.
Ulmacceae Holoptelea	Komaji/Papadi/Kujo Charal (k)	Bark used for skin diseases, leprosy, and rheumatism; Leaves used for inflammation and gastrointestinal issues. Potential anti-diabetic properties.

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Implications

The historical exploration of epidemics and healthcare evolution in Kutch from 1800 to 1947 offers critical insights for contemporary public health policy, especially in rural and culturally diverse regions. Understanding how traditional and colonial medical systems coexisted in Kutch during major disease outbreaks provides a valuable model for integrating indigenous knowledge with modern healthcare practices. The documented role of local leaders, community resilience, and the widespread use of indigenous medicinal plants highlights the importance of community-led health initiatives in epidemic management. These insights can be applied today to enhance pandemic preparedness, especially in areas where access to formal healthcare remains limited.

Furthermore, the region's unique environmental and geological conditions, which influenced both health outcomes and medical infrastructure, emphasise the need to consider local ecological factors in health planning. The paper also underscores the long-term impact of early public health interventions—such as quarantine, vaccination, and dispensary networks—many of which remain foundational in managing infectious diseases today.

Additionally, the inclusion of botanical knowledge and traditional healing practices points to the potential for ethnobotany and herbal medicine in complementing modern treatments. Policymakers and healthcare practitioners can use this historical understanding to frame culturally sensitive health programmes, especially where traditional beliefs still influence health behaviours. Academically, this research enriches medical historiography by situating Kutch within the broader narrative of colonial and indigenous health systems in India. Ultimately, the study calls for a balanced approach that values historical precedent and indigenous wisdom alongside scientific advancement in healthcare planning and epidemic response.

Conclusion

The modern medical system in Kutch began to take shape from 1800 onwards, albeit slowly. By the time of independence, Kutch had developed a comprehensive medical infrastructure. The rulers of the Kutch made significant efforts to combat epidemics, but their commitment to establishing a robust health system was limited by financial constraints. The region faced severe droughts, which diverted resources towards immediate needs such as food and irrigation. Despite these challenges, the establishment of a modern medical system in the Kutches is commendable.

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