

Navigating the Challenges of the Healthcare System in Ladakh

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Abstract

The paper highlights the significant challenges of the healthcare system in Ladakh. Ladakh is one of the territories of utmost geopolitical importance for India, as it shares the border with China, and ensuring access to basic necessities is crucial for the development of the region. The paper is based on secondary data and real-life experiences, particularly the challenges faced by people residing in the remote areas of Ladakh, such as Changthang, Nubra, and Zaskar. Although India is in the lead in terms of the world's healthcare system, many areas still need basic healthcare facilities, and Ladakh is one of those. The significant challenges highlighted in the paper are related to the inaccessibility of healthcare facilities, lack of advanced equipment, lack of manpower, lack of awareness, and inclination of the people towards traditional methods of medical care.

Keywords: Healthcare System, Ladakh, Non-Communicable health issues, Traditional healing practices, modern healthcare system, high altitude sickness.

Introduction

Health is best understood as a holistic condition encompassing physical, mental, and social well-being, rather than simply the absence of illness or infirmity. It reflects an individual's capacity to perform daily tasks, engage in interpersonal relationships, and respond adaptively to psychological and social stressors. A healthy individual demonstrates resilience, functional competence, and a balanced integration of bodily and psychosocial systems. The mechanism responsible for ensuring good health for the people can be referred to as the 'Healthcare System'. The healthcare system is a structured network of professionals, institutions, and resources working to deliver healthcare services to meet the health needs of a population. *'Health care system is the prevention, treatment of illness and the preservation of mental and physical well-being through the services offered by the medical, nursing, and allied health professions'* (Sheeba A, 2020). According to the World Health Organisation, health care embraces all the goods and services designed to promote health, including "preventive, curative and palliative interventions, whether directed to individuals or to populations". The organised provision of such services may constitute a health care system. A healthcare system includes hospitals, clinics, medical professionals, health policies, insurance schemes, and health initiatives. The goal of a healthcare system is to promote, restore, and maintain health through prevention, diagnosis, treatment, and rehabilitation.

One of the pillars on which the development and growth of a nation depends is an efficient healthcare system for its citizens. In India, one of the most populous countries in the world, a

well-functioning healthcare system can be the base on which it can grow. A robust healthcare system is essential because it ensures good health of the citizens of a nation, improves the quality of life and contributes to economic stability in the nation. Health is one of the primary human rights, and access to a high-quality healthcare system is one of the fundamental rights as per Article 21 of the Constitution of India. An efficient healthcare system also plays a crucial role in detecting and preventing diseases at an early stage, ultimately reducing the burden of illness and healthcare expenses in the long run. A strong healthcare system also ensures equality by providing healthcare to all, including people living in poverty and marginalised communities, which leads to promoting social justice.

Although India's healthcare system is very advanced, there is still much work to be done to ensure proper healthcare for all its citizens. '*The healthcare system of India consists of Medical care providers like physicians, specialist clinics, nursing homes, hospitals, Diagnostic service centres and pathology laboratories, Medical equipment manufacturers, Contract research organisations (CRO), and pharmaceutical manufacturers*' (Sheeba A, 2020). India is one of the countries with the most advanced healthcare systems in the world but there are a lot of remote areas where the people still does not have access to good healthcare system and Ladakh is one of such places.

Survey of Literature

Bhasin (2005) in the paper titled, *Ecology and Health: A Study Among Tribals of Ladakh*, discusses various healthcare systems available in India. It also emphasises how several health systems coexist, including the traditional system in Ladakh. This study further addresses how cultural beliefs, ecology, political scenarios, and changes in social values affect the approval and use of therapy systems in Ladakh. It also focuses on how the people of Ladakh view and use different ways of healing, therefore clarifying the idea of medical pluralism – the use of several medical approaches. In Ladakh, the various ways of healing include allopathy, shamanism (Lhawaism), Lamaism and Amchi (traditional Tibetan) medicine. The healing options among the people of Ladakh depend on the nature and perception of the health issue.

Gutshow (2011) in the book *From Home to Hospital: The Extension of Obstetrics in Ladakh. In Medicine Between Science and Religion: Explorations on Tibetan Grounds*, the author discusses the shifting preference of the people of Ladakh from home to hospitals for childbirth. The study highlights the changing health-seeking behaviour and the rising trust in modern medicine by the people of Ladakh. In this study, one can also find that although the people of Ladakh residing in the towns are inclining more towards modern medicine but the people living in the remote areas are still more inclined towards the traditional healing system because of the lack of awareness and their belief system. Apart from this study, the researcher found a number of studies conducted by Kim Gutschow on the health system in India and Ladakh, and the information found from these studies has been cited in this paper in all the sections.

Kunzes Angmo (2023a) in her paper titled *Perception of medical health care practitioners and health care consumers towards traditional health care systems in western Ladakh, India*, evaluates the take of medical health care practitioners and health care consumers on the traditional health care system in Ladakh. This study found that although the communities in

Ladakh have been reported to be inclined more towards the traditional health care system, in recent years, it has been changing. The respondents of this study reported that the traditional and the modern health care systems have been working in parallel, and they have seen shifts of people from the traditional to the modern system.

Kunzes Angmo (2023b), in her study titled *Changing aspects of Traditional Healthcare System in Western Ladakh, India*, highlights one of the most prevalent healing systems in Ladakh, i.e., Sowa Rigpa. Angmo highlights in this paper that the traditional health systems like Sowa Rigpa, which were the most trusted healing system for the people of Ladakh, have been losing their importance because of the introduction of modern medicine. It has been highlighted in this paper that the new generation is reluctant to adopt traditional healing methods, and their inclination is growing towards modern medicine. The researcher has also stressed on the fact that the traditional healing systems should be integrated with the modern health system in order to preserve the traditions.

Marion (2017) attempted to investigate the access to health care services and the perception of Ladakhi women towards the healthcare system in her paper *Women of Leh Town, Ladakh: An Overview of the Perception of Health, Health Seeking Behaviours, and Access to Health Care*. The study also focused on the marginalised communities, including women. The study found that harsh environment and globalisation are the key reasons for the health issues of the people of Ladakh. This study reflected that due to rising awareness in the region, people, especially women of Ladakh, have been inclining more towards modern medicine. As the study was focused on the women of Leh town, where the district hospital is located, the findings of this study cannot represent the hardship of women living in the outskirts. The study also highlights that women, even living in the town of Leh, still prefer Amchi medicine over modern medicine.

In the literature survey, the researcher found that the studies conducted in this region mainly focused on the town or the district headquarters, where the infrastructure is good and the district hospital is well equipped compared to the sub-centres of the PHC in the remote areas. The remote areas of Ladakh have not been given the attention, and a minimal number of studies have been conducted. This research paper will attempt to address the issues faced by people living in remote areas regarding the healthcare system. This study will mend the gap and give a clear picture of the issues with the healthcare system in Ladakh, including the system in remote areas.

Methodology

This paper is primarily based on secondary data collected from various research papers, published reports, and government sources. The use of secondary data allowed for an in-depth analysis of existing information related to the topic. In addition to the secondary data, the researcher has included information based on observation and informal interactions with the local residents. With the integrated secondary data and first-hand observation, the paper aims to present a more in-depth and actual understanding of the challenges with the healthcare system in Ladakh, particularly in remote areas.

Healthcare system in Ladakh

The existing health care infrastructure in Ladakh comprises all three levels: primary (The sub-centres at the community level), secondary (primary health care centres), and tertiary (district-level hospitals). The first medical centre in Leh was established in 1940, and currently, there are 288 sub-centres and 33 Primary health centres all over Ladakh, providing basic health facilities to Ladakh. In both the districts of Leh and Kargil, there is a well-equipped district hospital with 150 beds.

The health department is working to establish more health and wellness centres. Although all the subdivisions have a number of community health centres or sub-centres, the accessibility of these facilities is a genuine concern. These facilities offer a wide range of health services, including some advanced treatments. However, the people of Ladakh rely on medical facilities outside Ladakh for some typical cases as well as severe cases. People of Ladakh primarily seek healthcare facilities in cities like Delhi, Chandigarh and Srinagar. *“The geographical isolation, characterized by rugged terrain and sparse population distribution, exacerbates the difficulties in ensuring timely access to medical facilities and personnel”* (Gupta, 2023). A few of the villages in far-flung areas, such as Zaskar and Changthang, still do not have road connectivity and communication systems. In this case, people in these areas face a lot of difficulty accessing medical facilities. The administration of Ladakh has improved a lot in terms of medical care, but there is still so much to be done in order to provide the people of Ladakh with the best medical facilities. One of the most burning concerns with medical care in Ladakh is the shortage of qualified medical professionals. One of the major concerns of the healthcare system in Ladakh is the lack of healthcare professionals compared to other states. In a recently published news article, data on the health department workforce of both Ladakh and Jammu and Kashmir were provided, which clearly reflects that the number of medical staff in Ladakh is very low compared to Jammu and Kashmir. *The article referring to the data of the ‘Ministry of Health and Family Welfare’ reflected that there are 8600 healthcare professionals, including doctors, nurses and allied health workers. As per the article, there are 153 health care specialists, of which 121 are in Jammu and Kashmir, and only 32 are in Ladakh. It further shows that there are 550 General Duty Medical Officers, out of which 453 are in Jammu and Kashmir, and only 97 are in Ladakh. There are 904 AYUSH doctors, and out of 904, only 46 are deployed in Ladakh. Furthermore, there are 1926 staff nurses in total, but only 116 are in Ladakh.* Apart from this news article, no data on the number of healthcare professionals was found. By looking at the available, one can understand the dire situation of the healthcare workforce in Ladakh.

People of Ladakh have different health issues because of the high altitude, harsh climatic conditions, and lack of resources. The most prevalent non-communicable health issues among the people of Ladakh are hypertension, Chronic Obstructive Pulmonary disease (COPD), diabetes, cardiovascular diseases, high-altitude sickness, etc. However, due to the changing lifestyle and the introduction of various foreign foods and beverages, the people of Ladakh have also been introduced to numerous types of new diseases. Here are some of the common health issues faced by the people of Ladakh

Health Issues related to high altitude:

Acute Mountain Sickness (AMS): This includes headache, Nausea, Fatigue, and breathlessness. Travellers who visit Ladakh for a short period of time mostly experience these issues. The locals, as well as people who have lived in the area for a longer period of time, are immune to these issues.

High-altitude Pulmonary Edema (HAPE): HAPE is a serious condition in which fluid accumulates in the lungs and the body struggles to adapt to a high altitude. The condition **can** be fatal if the patient is not provided with immediate medical assistance.

High Altitude Cerebral Edema (HACE): A condition in which, due to low oxygen supply the brain starts swelling. People face this issue in places situated at high altitudes, like Ladakh, where the oxygen level is low.

The key to preventing these issues is to acclimatise to the conditions of the place and avoid doing heavy activities. Although the locals are acclimatised to the conditions, they also suffer from these conditions sometimes. Travellers visiting high-altitude places like Ladakh are advised to acclimatise for a day or two by just resting and keeping their bodies hydrated.

Respiratory and cold-related illness – Due to the cold and dry climate and the use of firewood in households, people of Ladakh can suffer from respiratory and cold-related illnesses, such as Chronic Bronchitis and Asthma, Upper respiratory tract infections (like Sinusitis), Pneumonia, Frostbite, and Hyperthermia. Most of the population in Ladakh is acclimatised and immune to the harsh climatic conditions and rough geographical terrain, but many of the locals also suffer from these conditions.

Gastrointestinal disorders

Due to the scarcity of some of the most important resources, like water, especially during harsh winters, people of Ladakh suffer from diseases like diarrhoea and dysentery, gastritis and peptic ulcers, and parasitic infections.

Apart from the significant health issues listed above, the people of Ladakh suffer from many other health-related issues. One of the most common health issues in Ladakh is nutritional deficiencies, which are directly related to a lack of resources. Due to the harsh climate, infertile and rough terrain, and a lack of water resources, the agricultural produce (vegetables, fruits, grains, pulses, etc.) in Ladakh is very limited. In terms of fresh agricultural produce, Ladakh depends on the other states, but for almost 6 months during winter, the connectivity by road is shut off, and there is no other means of getting supplies from the other states. Due to the lack of proper nutrition, the people of Ladakh suffer from anaemia, deficiency of Vitamin D and Malnutrition. Other health issues like hypertension, diabetes, and heart-related issues are becoming prevalent because of a changing lifestyle, lack of awareness, and delay in proper diagnosis. Maternal and Child Health-related issues are also one of the most pressing issues in Ladakh, and harsh climatic conditions, inaccessibility of health facilities contribute to this issue. In harsh weather conditions, people also suffer from cataracts and skin-related issues like eczema and dryness. Lastly, as a result of changing lifestyle, mental health-related issues like anxiety and depression are rapidly growing. However, people do not consult specialists because of societal stigma and a lack of awareness.

Challenges in Healthcare Delivery

Geographical Barriers:

Before August 2019, Ladakh covered most of the geographical area of the state of Jammu and Kashmir and was announced as a union territory in August 2019. The population distribution of Ladakh is scattered in nature because of the large geographical area and lack of natural resources like water. Ladakh is considered to have the lowest population density, with a density of about 5.5 persons per sq. km, Leh with 3.5 persons per sq. km and Kargil with 8 persons per sq. km. This figure reveals that the population of Ladakh is very low and geographically scattered. Although there are enough health care facilities (sub-centres and Public Health Centres), the accessibility of these centres due to geographical barriers is the real concern. The three major challenges with the healthcare facilities in Ladakh are scarcity of resources, lack of manpower, and lack of proper infrastructure. The rough terrain and the harsh climatic conditions are one of the reasons behind these challenges. *“The region’s high altitude, remoteness and low population density, and lack of all-weather roads create numerous obstacles in access, especially for women in labor”* (Gutschow, Going ‘Beyond the Numbers’: Maternal Death Reviews in India, 2016). *The average villager needs to travel 33–42 km, often on foot, to reach a health clinic in a district where altitudes range from 3500 to 7000 m above sea level* (ICCR, 2008). *Both Leh and Kargil districts are cut off from the rest of India by road from November to May each year due to snowfall, while roads are often blocked at other times due to landslides or road repairs* (Gutschow, 2011).

Due to these geographical barriers, it is also difficult for the administration to equip the community health centres with the required infrastructure. Along the national highway connecting Ladakh with the rest of India, the internal roads connecting different parts of Ladakh with the main districts are also not serviceable during winter due to heavy snowfall, landslides and avalanches. The population of Ladakh, especially those living in remote areas such as Changthang, Zaskar and Nubra, have to struggle a lot to have access to the necessities such as food, water, transportation, and health care. During winter, the emergency cases which require referring to hospitals outside Ladakh are airlifted with the support of the Indian Army or by the administration. Due to the unpredictable weather of Ladakh, the only mode of transportation, i.e., by air, is sometimes shut down due to bad weather conditions during winter. People of Ladakh, in order to survive the harsh winter, stock up on basic necessities before the roads are closed.

Shortage of Healthcare Infrastructure

One of the main issues in Ladakh's health system is the lack of physical infrastructure. Most villages and rural settlements lack even basic health facilities, forcing people to travel long distances for medical attention. The hospitals and primary health centres that do exist usually lack the equipment, supplies, and consistent power sources to deliver proper care.

Especially in its more remote areas, Ladakh lacks proper healthcare facilities, with either absent or poorly equipped hospitals. The number of available hospitals and clinics in the area is limited, and only Leh and Kargil are two significant towns where most medical treatments are conducted. There is often no proximity to a local health centre for people living in villages,

some of which are several hundred km away from such towns. To receive even the simplest of medical treatments, residents have to travel long distances, in some cases by foot or over rough, unpaved roads. Common health issues like cold and cough can lead to more severe issues if not treated in time, as healthcare facilities are not accessible, especially during winter.

Heart disease patients, cancer patients, or those with neurological illnesses have to venture out of Ladakh in search of necessary medical treatment. A lack of diagnostic facilities and the latest medical equipment also adds to the problem. Major diagnostic and treatment facilities, such as MRIS, CT scans, or dialysis, are only available in the district-level hospital, which is not accessible to people living in remote areas. Only in the critical cases do people visit the hospital in the district. A second pressing issue is a shortage of access to maternity and neonatal care, particularly in complex pregnancies among women living in remote areas. Although the district hospitals have advanced facilities for neonatal care, the women living in remote areas cannot access these facilities in times of emergency.

Since Ladakh lacks specialised healthcare facilities, the people of Ladakh depend on hospitals outside Ladakh, such as in Srinagar, Chandigarh, and Delhi, for such services. This dependency not only puts the patients and their families under financial stress but also leads to delayed treatment, at times causing health conditions to deteriorate. The two passes which connect Ladakh to the rest of the states in India, namely Zoji la Pass and Rohtang la Pass, are closed for around 5 months from November to March due to heavy snowfall. These conditions make it more difficult for the people in Ladakh to access the facilities in the other states. There are many instances where critical conditions like stroke, cardiac arrest, and severe infections have resulted in the death of the patient due to delayed medical care.

To meet this lack of healthcare infrastructure, the government must invest in increasing hospital facilities in Ladakh, especially in rural areas.

Socio-Cultural Factors

Socio-cultural factors in Ladakh greatly influence access to the healthcare system. The socio-cultural factors add to the challenges of the healthcare system because of the inclination of the people of Ladakh towards other means of solutions to illness. People of Ladakh strongly rely on traditional healing practices, especially Tibetan medicine (Amchi System), which can cause delays in diagnosis and treatment. People in Ladakh, especially those living in the remote areas, prefer these traditional remedies instead of allopathic medicine. Adding to these traditional methods are the Cultural and religious beliefs, which further contribute to these challenges. People in the remote areas still believe that the illness is caused by fate or spiritual reasons, which can result in people refraining from seeking timely medical intervention. *In the Ladakhi context, components of medical pluralism are allopathy or bio-medicine, shamanism (Locally known as Lhawaism), Lamaism, and scholarly amchi medicine. Among Ladakhis, the choice of therapy depends on illness-specific patterns of resort.* (Bhasin, 2005). Lack of awareness of modern medicine among the people of Ladakh, especially those residing in remote areas, is one of the reasons behind their inclination towards other methods. People blindly seek traditional treatment for illness because of misinformation and a lack of awareness, which leads to worsened health conditions.

The out-migration of people from Ladakh, especially the youth, for education and employment, has led to the elderly members of the family living in vulnerable conditions. However, the increase in tourism and change in lifestyle have brought new healthcare challenges. These new healthcare challenges and diseases have also brought many challenges to the traditional systems. The migration draws a gap in community support, particularly for the elderly who are left alone with limited resources and means of transport to reach the medical facilities. Therefore, the elderly either rely on the traditional system or the occasional community-level health camps organised by the health department. It is also hard for the elderly to seek medical attention without someone to assist them with the procedures or to communicate with the healthcare professionals because of language barriers.

Different communities, like the Changpa nomads living in the eastern region of Ladakh, face different issues in accessing medical facilities apart from the ones mentioned above. The Changpa nomadic community lives a nomadic lifestyle, and their lives depend entirely on the livestock they own, such as Yaks, Goats, and sheep. They do not live in permanent settlements and keep shifting places to herd their livestock. Due to their lifestyle, they can hardly access basic facilities such as healthcare and educational facilities.

These closely interwoven socio-cultural dynamics underscore the need for culturally sensitive, locally adapted, and inclusive health care strategies in Ladakh.

Potential Solutions and Recommendations

To improve the infrastructure and resources of the healthcare system in Ladakh, the administration needs to look into a multifaceted approach. To ensure that the people of Ladakh get the best of the world's medical care, the administration can look into enhancing the infrastructure, integrating the latest technology in the medical field and enhancing the human resources. Improving the healthcare system in Ladakh will require investment in upgrading existing healthcare facilities, constructing new healthcare facilities such as sub-centres or Public Health Centres in the remote areas and ensuring the timely supply of required resources such as equipment and medicines. It is of utmost importance to ensure that the existing community-level health facilities are well-equipped and staffed to provide those residing in remote areas with the best medical facilities. Initiatives like Ayushman Bharat can be crucial for remote areas of Ladakh to ensure timely treatment, the availability of resources, and the lifting of financial stress from patients and their families.

One of the significant challenges with accessing healthcare facilities in Ladakh is the lack of connectivity in the remote areas by road. It is crucial to ensure all-season road connectivity, whether with the other states of the country or the different parts of Ladakh with the central districts. This can be ensured by constructing tunnels on the main passes like Zojila pass, Umlingla pass, Khardongla pass and Changla pass. Improving the condition of existing roads is also one solution to ensure connectivity throughout all seasons. A few other measures can also be taken, like deploying mobile units to clear out snow during winter, especially on the routes connecting remote areas to the central districts. There should be an all-season availability of air ambulance services for airlifting patients out from remote areas to the district hospitals, where the patients can receive more advanced treatments. The administration can also improve

the infrastructure of the existing health care facilities by adding advanced medical equipment and hiring more specialists.

One of the other significant issues with the health care facilities in the remote areas is the electricity shortage. Many remote areas in Ladakh still do not have a power supply, so it is meaningless to equip health centres with advanced technology. There have been several government announcements related to initiating various mega solar energy plants across Ladakh. As there has been a lot of development in renewable energy sources, the administration can also invest in renewable energy sources to ensure a reliable power supply for healthcare facilities. Availability of uninterrupted power supply in the remote areas is crucial because it will ensure the people have access to critical services like vaccine storage, diagnostics and lighting.

Addressing human resource constraints is another significant issue in improving Ladakh's healthcare system. In the past few years, the recruitment of doctors, nurses and other medical staff has been very low. Either there has been no recruitment, or the recruitments are on a contractual basis, which has resulted in a lack of manpower at many of the health centres in remote areas. The administration should invest more in recruitment specialists and incentivise the existing healthcare professionals. Healthcare professionals should also be provided with frequent training and capacity-building workshops to equip them with knowledge about new and advanced medical technology.

In order to address the lack of awareness of modern medicine among people living in remote areas, the health department should organise frequent medical and awareness-raising camps. The medical staff on the sub-centres and PHCs should visit communities, schools, and familiar gathering places frequently to spread awareness about modern medicine and encourage the people to visit the health centres. The staff can also include volunteers from the community to build trust and rapport with the community members, and these volunteers can also help staff spread awareness in the communities.

Conclusion

This research paper, although based on secondary data and the researcher's observation, presents the significant challenges of the healthcare system in Ladakh. It highlights the challenges which make the accessibility of healthcare facilities difficult for the people of Ladakh, particularly for those living in remote areas. Ladakh, being one of the most challenging terrains in the country, has a whole different set of challenges in terms of access to basic necessities such as health facilities. The researcher has thoroughly described the significant challenges, such as Lack of oxygen, lack of road connectivity, closure of roads due to heavy snowfall, lack of advanced technology, etc., in this paper.

Ladakh, being the northernmost territory of India and having a vital geopolitical role as the front of the national borders with China, is in the utmost need of access to basic necessities, including proper healthcare facilities. There has been significant development in the healthcare system in Ladakh, including the opening of new healthcare centres, the provision of air ambulance services, and the recruitment of contractual staff. However, there is still much to be done to ensure proper medical care for the people, including those living in the remotest areas

of Ladakh. There is a need for a multi-faceted approach involving all stakeholders, such as the government, healthcare providers and the community, to overcome these challenges.

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