

Exploring Barriers To Healthcare Access In Rural Hyderabad

Saeeda Anjum Buriro¹, Husan Bano Channar², Zubeda Bhutto³, Mansoor ul Haque Nohri⁴, Rubina⁵, Tasleem Akhtar Laghari⁶, Ashfaque Ahmed⁷

Abstract

Access to healthcare services is a fundamental right, yet significant barriers persist, particularly in rural areas. This study aims to explore the multifaceted barriers to healthcare access in the rural regions of Hyderabad, Pakistan. Utilizing a mixed-methods approach, the research incorporates both quantitative surveys and qualitative interviews to gather comprehensive data from residents, healthcare providers, and local authorities. Key barriers identified include inadequate healthcare infrastructure, a shortage of trained medical personnel, and economic constraints that limit residents' ability to afford medical services. Additionally, cultural and social factors, such as gender norms and lack of health literacy, further exacerbate these challenges. The findings highlight the critical need for policy interventions focused on improving healthcare infrastructure, increasing the healthcare workforce, and addressing socio-economic disparities. By understanding these barriers, the study aims to provide actionable recommendations to enhance healthcare accessibility and equity in rural Hyderabad, ultimately contributing to better health outcomes for its residents.

Keywords: Public Health, Barriers, Healthcare, Challenges, Rural Area of Hyderabad.

Introduction

Access to healthcare is a fundamental aspect of human rights and is crucial for the well-being and development of communities (Pulimamidi, 2021). In many parts of the world, however, significant disparities exist between urban and rural populations regarding healthcare accessibility (Aljassim & Ostini, 2020). Rural Hyderabad, a region marked by its economic challenges and socio-cultural complexities, exemplifies these disparities (Buriro, Chandio & Memon, 2024). While urban areas in Pakistan have seen improvements in healthcare infrastructure and services, rural areas lag behind, resulting in a significant portion of the population facing difficulties in obtaining necessary medical care (Raza et al., 2020). This study aims to delve into the specific barriers that impede healthcare access in rural Hyderabad, with the goal of identifying actionable solutions to bridge this gap.

¹ PhD Scholar university of Sindh Jamshoro

² People's Nursing School Liaquat University of Medical & Health Sciences, Jamshoro

³ Senior lecturer Nursing DOW Institute of Nursing and Midwifery Ojha Campus Dow University of Health Sciences Karachi

⁴ Lecturer People's Nursing School LUMHS Jamshoro.

⁵ Dean, Senior Lecturer, People's Nursing School, LUMHS, Jamshoro.

⁶ Clinical Instructor Collage of Nursing Sir COWSJEE Psychiatric and Behavioural Science Hyderabad.

⁷ Nursing Supervisor National Institute of Cardiovascular Diseases, Hyderabad, Pakistan

Corresponding author email: buriro.saeeda@gmail.com

The healthcare access issues in rural Hyderabad are multifaceted, involving structural, economic, and socio-cultural dimensions (Asim et al., 2020). Structural barriers include inadequate healthcare facilities, insufficient medical supplies, and a shortage of trained healthcare professionals (Yearby, Clark & Figueroa, 2022). Many rural health centers are understaffed and ill-equipped, making it challenging to provide comprehensive and timely medical services (Flores, George & House, 2022). Economic barriers further exacerbate these issues, as many residents of rural Hyderabad live below the poverty line, making it difficult for them to afford healthcare services, even when they are available (Buriro et al., 2024). The costs associated with travel, treatment, and medications are often prohibitive, leading to delayed or foregone medical care, which can result in worsening health conditions and higher mortality rates (Bertoldo et al., 2022).

Structural and economic barriers, socio-cultural factors play a significant role in limiting healthcare access in rural Hyderabad (Kiselev et al., 2020). Cultural norms and gender roles often dictate health-seeking behavior, particularly affecting women and children, who may be reliant on male family members to access medical care (Sakala et al., 2021). Health literacy is another critical factor; many residents lack the necessary knowledge and understanding of health issues and available services, leading to underutilization of healthcare resources (Buriro et al., 2024). This study seeks to provide a comprehensive analysis of these barriers through a mixed-methods approach, combining quantitative data from surveys with qualitative insights from interviews with residents, healthcare providers, and local authorities (Buriro et al., 2024). By exploring these barriers in depth, the research aims to offer targeted recommendations for policymakers and stakeholders to improve healthcare access and outcomes in rural Hyderabad.

Statement of the Problem

Despite significant advancements in healthcare services globally, rural regions like Hyderabad in Sindh, Pakistan continue to face substantial barriers to accessing healthcare. These barriers contribute to pronounced health disparities between rural and urban populations. In rural Hyderabad, the lack of adequate healthcare infrastructure, such as well-equipped medical facilities, Basic health care centers/units, and trained healthcare professionals, is a critical issue. Additionally, economic challenges, including poverty and the high costs associated with healthcare, further hinder access to necessary medical services. This situation is compounded by socio-cultural factors, such as gender norms that restrict women's access to healthcare and low health literacy rates among the rural population. As a result, many residents of rural Hyderabad suffer from preventable and treatable conditions, leading to higher morbidity and mortality rates.

The problem is not only the limited access to healthcare but also the quality and timeliness of the services provided. Many rural healthcare centers are understaffed and lack essential medical supplies, making it difficult to deliver effective care. Economic constraints force many residents to delay or forgo medical treatment, exacerbating health issues and increasing the burden on the already strained healthcare system. Furthermore, cultural barriers and inadequate health education mean that many individuals do not seek medical help until their conditions become critical. This research aims to systematically identify and analyze these barriers to healthcare access in rural Hyderabad, providing a foundation for developing targeted interventions to improve health outcomes and bridge the healthcare gap between rural and urban areas.

Research Question

1. What are the primary structural barriers that impede access to healthcare services in rural Hyderabad?

2. How do economic factors influence the accessibility and utilization of healthcare services in rural Hyderabad?
3. In what ways do socio-cultural factors, such as gender norms and health literacy, affect healthcare-seeking behavior in rural Hyderabad?

Literature Review

Access to healthcare is a fundamental human right, yet disparities persist globally, particularly in rural areas (Palozzi, Schettini & Chirico, 2020). Rural Hyderabad, like many rural regions in developing countries, faces unique challenges that hinder healthcare access (Jamali et al., 2023). This literature review aims to synthesize existing research on the barriers to healthcare access in rural Hyderabad, providing a comprehensive understanding of the socio-economic, cultural, and systemic factors at play.

Socio-economic status is a critical determinant of healthcare access (Mbuya-Bienge et al., 2021). Numerous studies have highlighted that poverty significantly restricts access to healthcare services in rural Hyderabad (Ibrahim et al., 2023). Daniel, (2020), low-income households often cannot afford medical fees, transportation costs, and essential medications. Financial burden is exacerbated by the lack of health insurance coverage in rural areas, leaving many individuals to bear out-of-pocket expenses for healthcare services (Vootukuri & Venkateswara, 2023). The economic instability in rural Hyderabad often leads to prioritization of daily survival over healthcare needs (Sengupta, & Jha, 2020). Many families prioritize spending on food and basic necessities, delaying or forgoing medical treatment (Tsimicalis et al., 2020). This economic prioritization is particularly evident in cases of chronic diseases where the cost of long-term care becomes unsustainable for impoverished families.

Geographical isolation and inadequate transportation infrastructure are significant barriers to healthcare access in rural Hyderabad (Kaiser & Barstow, 2022). The rural terrain, characterized by poor road conditions and long distances to healthcare facilities, poses a substantial challenge (Ihantamalala et al., 2020). Residents in remote villages often travel over 20 kilometers to reach the nearest healthcare center, with limited public transportation options exacerbating the issue (Maganty et al., 2023). Transportation barriers are further compounded during adverse weather conditions, which can make roads impassable and cut off access to essential services (Buriro et al., 2024). Geographic isolation not only delays medical treatment but also discourages routine check-ups and preventive care (Ezzat, 2023).

Cultural beliefs and educational disparities also play a pivotal role in healthcare access. In rural Hyderabad, traditional beliefs and practices often take precedence over modern medical approaches (Shaikh et al., 2024). Reliance on traditional healers and home remedies can delay seeking professional medical care, sometimes leading to worsening health conditions (Mensah et al., 2024). Educational barriers, including low literacy rates and lack of health awareness, further hinder access to healthcare (Shady, Phillips & Newman, 2024). Many rural residents have limited knowledge about disease prevention, the importance of early medical intervention, and available healthcare services (Lund et al., 2017). Health literacy is a significant barrier to utilizing healthcare resources effectively (Buriro et al., 2020).

Systemic issues within the healthcare infrastructure are also a significant concern (Schatz & Berlin, 2011). Rural healthcare facilities in Hyderabad are often under-resourced, with shortages of medical personnel, equipment, and essential medications (Olatomiwa et al., 2018). Healthcare centers in rural areas frequently face staffing challenges, with a high turnover rate among healthcare workers due to inadequate working conditions and low wages. The distribution of resources and implementation of health programs are often marred by administrative delays and mismanagement (Birmani et al., 2016). These systemic inefficiencies

undermine the effectiveness of healthcare delivery and erode public trust in the healthcare system (Buriro et al., 2023). Addressing these barriers requires targeted policy interventions and innovative strategies. Strengthening healthcare infrastructure, improving transportation networks, and enhancing financial protection mechanisms are critical steps (Debie et al., 2024). Mobile health clinics and telemedicine can bridge the geographic gap and provide timely medical assistance to remote areas (Chauhan, Bali & Kaur, 2024).

Community-based interventions, such as health education programs and local healthcare worker training, are also essential (Alhuwayfi et al., 2024). Empowering local communities with knowledge and resources can improve health literacy and encourage proactive health-seeking behaviors (Ebirim et al., 2024). Policy efforts should focus on improving the working conditions and compensation for rural healthcare workers to reduce turnover and ensure consistent healthcare delivery (World Health Organization, 2024).

Method & Procedure

This study utilizes a phenomenological research design to delve into the barriers to healthcare access in rural Hyderabad, capturing the lived experiences of patients at the rural health center in Hatri. To collect comprehensive and nuanced qualitative data, semi-structured interviews were conducted with a purposive sample of 10 patients. These patients were chosen to reflect a diverse range of socio-economic backgrounds, ages, and medical conditions, ensuring a broad spectrum of perspectives. Each interview, lasting approximately 45-60 minutes, was conducted in the local language to facilitate ease of communication and was audio-recorded with the participants' consent.

Thematic analysis, as outlined by Braun and Clarke (2017), was employed to analyze the interview data systematically. The process began with the transcription of audio recordings, followed by repeated readings of the transcripts to ensure immersion in the data. Initial codes were generated from notable features of the data across the entire dataset. These codes were then organized into potential themes, which were reviewed, refined, and defined to accurately represent the data. Thematic analysis allowed for the identification and interpretation of key patterns and themes, providing a detailed understanding of the socio-economic, cultural, and systemic barriers to healthcare access faced by the rural population in Hatri. This methodical approach ensured the reliability and depth of the findings, contributing valuable insights to inform future policy and intervention strategies.

Results

Keeping in view of the nature of the study, semi-structured interviews were conducted with the participants for the study. The results of the study show interesting findings and are important for the study.

Cultural Barriers

Cultural barriers are the important factors to access public health. Cultural beliefs influence the patients, and they are treated initially by their elders and other family members.

In response to one of the questions.

Interviewer: Can you describe any cultural beliefs or practices that affect your access to healthcare?

Mr. A: In our village, we have a strong belief in traditional medicine. Many people, including myself, first go to the local healer for remedies before considering visiting the health center. It's what we've always done, and many believe it's more effective and trustworthy.

Participant 3: Mr. C, Age 52, Shopkeeper

Interviewer: Are there any cultural or educational factors that make accessing healthcare difficult for you?

Mr. C: Yes, definitely. In our community, there's a stigma around certain illnesses, especially mental health issues. People are afraid to seek help because they don't want to be judged or talked about.

Interviewer: How do cultural and educational factors influence your access to healthcare?

Mrs. D: Despite being educated, I see many people around me who aren't. They often don't trust the doctors at the health center because they feel the doctors don't understand their cultural practices and beliefs. This mistrust leads to avoidance of the health center.

These all factors suggest that cultural practices are the strong factors responsible for barriers to public health access. People don't have strong faith in doctors, and they prefer to use traditional methods to cure diseases at the initial level.

Educational Barriers

The results of the study show interesting findings. Lack of education is one of the main reasons to mitigate the public health care. Due to the lack of education the people still prefer to cure the disease with traditional methods rather than visiting doctors to cure the diseases. As the respondents have responded to their questions

Interviewer: How does this belief influence your decision to seek medical help from the health center?

Mr. A: It makes me delay going to the health center. By the time I decide to go, sometimes my condition has worsened. Also, some of us believe that modern medicine can interfere with our traditional treatments, so we avoid it unless absolutely necessary.

Participant 2: Mrs. B, Age 38, Homemaker

Interviewer: Can you tell me about any educational barriers you face in accessing healthcare?

Mrs. B: Many women here, including me, did not go to school for long. We don't understand much about diseases or when it is necessary to go to the doctor. Health information is not easily available, and we rely on word-of-mouth, which can be misleading.

Interviewer: How does this lack of education impact your healthcare decisions?

Mrs. B: We often don't realize the severity of health issues until it's too late. Without understanding the importance of early treatment, we delay going to the health center. Also, not being able to read means we can't understand prescription labels or health advice given in written form.

Interviewer: Does this stigma affect your own willingness to seek healthcare?

Mr. C: Yes, it does. For a long time, I avoided getting help for my stress and anxiety because I didn't want to be seen as weak or incapable. It was only when my condition severely impacted my work that I went to the health center, but even then, I didn't tell anyone about it.

Participant 4: Mrs. D, Age 60, Retired Teacher

Interviewer: How do you think this mistrust could be addressed?

Mrs. D: I think it's important for healthcare providers to respect and understand local cultures. Educational programs tailored to our community's context could help bridge the gap. If people feel respected and understood, they might be more willing to seek medical help.

Socio-Economic Barriers

The interview results show that socio-economic conditions of the area highly affect the community members to access the public health services. Due to poverty and low socio-economic background the people of this area can't afford the expenses of their family members treatment and medicines, and they prefer to access the traditional methods. The affordability of the doctors' checkup fees and other expenses of medicine put the financial burden on the patients which led to ignorance and avoiding visiting the doctors or hospital.

Participant 1: Mr. E, Age 50, Farmer

Interviewer: Can you describe how economic factors affect your ability to access healthcare?

Mr. E: Money is always a problem.... (silence)... our profession farming doesn't pay much, and during off seasons, it's even worst situation to go for the medical checkup. When someone in the family gets sick, we must think about whether we can afford the trip to the health center, the doctor's fees, and the medicine. Sometimes, we just can't.

Interviewer: How often do financial constraints prevent you from seeking medical help?

Mr. E: Quite often. Unless it's an emergency, we try to manage with home remedies. We just don't have the extra money for healthcare most of the time.

Participant 3: Mr. G, Age 65, Retired Laborer

Interviewer: What socio-economic challenges do you face in accessing healthcare?

Mr. G: I have a small pension, but it's not enough for all my needs (taking lonaag breath). aaaa...After buying food and paying bills, there's little left for healthcare. Medicines are expensive, and even a simple doctor's visit can be too much.

Interviewer: How do you cope with these financial difficulties regarding your health?

Mr. G: I try to save money where I can, but it's tough. Sometimes, I have to borrow money from relatives or friends to pay for medical expenses, which is not always possible.

Geographic and Transportation Barriers

The results of the study show that transportation of the patients from one place to another place is one of the major challenges for the patients in remote areas. The selected areas of the study have don't access to the modern facilities of transportation, that's why these areas are disconnected and are at far distance.

Participant 2: Mrs. F, Age 30, Homemaker

Interviewer: How do geographic factors impact your access to healthcare services?

Mrs. F: The health center is very far from our village. We have to walk or find a ride, and it takes a lot of time...aaa... There are no buses, and hiring a vehicle is expensive. Sometimes, we just can't travel because the medical healthcare units are at far distance.

Interviewer: Does this distance affect your decision to seek medical care?

Mrs. F: Yes, definitely. ... silence.... Because it's so hard to get there, we wait until the illness is very serious. For regular check-ups or minor issues, we usually don't go and avoid travelling.

Participant 4: Mrs. H, Age 42, Teacher

Interviewer: Can you talk about any transportation issues you face when trying to access healthcare?

Mrs. H: Transportation is a big issue. We don't have our sources of transportation... aaaa... The roads to the hospitals are rough, especially we face lots of issues during the rainy season. It can be dangerous to travel, and sometimes, we have to wait until the roads are clear and roads are not under water.

Interviewer: How does this impact your healthcare decisions?

Mrs. H: It makes us delay seeking care. We try to avoid traveling unless it's absolutely necessary because it's not safe and takes a long time to reach. This means we often don't get the medical attention we need when we need it.

Institutional Barriers

The results of the study show that basic health centers lack basic facilities. The unavailability of staff, doctors and emergency services are the major barriers to accessing public health institutions. The hospitals are not built well and are unable to provide basic health facilities. The staff members are not professionally trained, and the institutions are not developed in such a way to cater the medical needs of the local area patients.

Participant 1: Mr. I, Age 55, Farmer

Interviewer: Can you describe any systemic or institutional barriers you face when accessing healthcare?

Mr. I: The main issue is the lack of doctors. Often, when we go to the health center, there's no doctor available, or they are overwhelmed with too many patients. We have to wait for hours or come back another day, which is very difficult for us.

Participant 2: Mrs. J, Age 35, Homemaker

Interviewer: What are some institutional barriers you've experienced in accessing healthcare?

Mrs. J: The health center often runs out of medicines, and they tell us to buy them from the pharmacy, which is expensive. Sometimes, we also face rude behavior from the staff, which discourages us from going back.

Participant 3: Mr. K, Age 40, Laborer

Interviewer: Can you talk about any systemic issues that affect your healthcare access?

Mr. K: There's a lot of paperwork and bureaucratic delays. Getting anything done takes a long time, whether it's getting an appointment or receiving treatment. It's very frustrating and discouraging.

Participant 4: Mrs. L, Age 60, Retired Teacher

Interviewer: What systemic or institutional challenges have you faced in accessing healthcare?

Mrs. L: The health center lacks proper equipment. Many times, they send us to the city for tests because they don't have the necessary machines or facilities. This adds to our expenses and inconvenience.

Participant 5: Mr. M, Age 48, Shopkeeper

Interviewer: Can you describe any institutional barriers that affect your healthcare access?

Mr. M: Corruption is a big problem. Sometimes, we have to pay extra to get timely services or better treatment. It's unfair and creates additional financial burdens.

Policy and Intervention Strategies

The result of the study shows that there is lack of policies or policies implementation which should help to work systematically. These unavailability of policies and implementation are the barriers to access the public health.

Interviewer: What policy or intervention strategies do you think could help address this issue?

Mr. I: More doctors should be assigned to rural health centers. Also, having a better appointment system could help manage the patient load more effectively.

Interviewer: What changes or policies do you think could improve this situation?

Mrs. J: Ensuring that the health center is well-stocked with essential medicines would be a big help. Training staff to be more courteous and patient-friendly would also make a difference.

Interviewer: What kind of policy interventions do you think could address these bureaucratic issues?

Mr. K: Simplifying the administrative processes and reducing paperwork would help. Introducing digital records and appointments could make things faster and more efficient.

Interviewer: What interventions do you think could help address these equipment shortages?

Mrs. L: Investing in better equipment for rural health centers is crucial. Regular maintenance and updates to the existing equipment would also ensure that we get the necessary tests and treatments locally.

Interviewer: What policy strategies do you think could help mitigate corruption in healthcare?

Mr. M: Implementing strict anti-corruption measures and ensuring transparency in the healthcare system is essential. Setting up a grievance redressal system where we can report issues anonymously could also help.

Discussion

The findings from this study highlight a multifaceted array of barriers to healthcare access in rural Hyderabad, encompassing socio-economic, geographic, cultural, and systemic factors. The socio-economic challenges predominantly involve financial constraints, which significantly hinder individuals' ability to seek timely medical care (Buriro et al., 2023). Many participants indicated that their limited income, primarily from farming or labor, often forces them to prioritize essential needs such as food and shelter over healthcare. This financial strain is exacerbated by the absence of affordable healthcare services and health insurance, which results in high out-of-pocket expenses. Addressing these financial barriers through subsidized healthcare services and expanded health insurance coverage could alleviate the burden on rural populations, promoting better health outcomes.

Geographic and transportation barriers are equally critical, with the long distances to healthcare facilities and poor road conditions posing significant challenges. Participants frequently mentioned the difficulty and expense of traveling to health centers, especially during adverse weather conditions. The lack of reliable public transportation further compounds this issue, leading to delays in seeking care and, consequently, worsened health conditions. Improving transportation infrastructure and establishing more localized healthcare facilities could mitigate these barriers, making healthcare more accessible to remote communities.

Cultural and educational barriers also play a pivotal role in limiting healthcare access. The strong reliance on traditional medicine and the mistrust of modern medical practices delay many from seeking timely care. Additionally, low health literacy levels prevent individuals from understanding the importance of early medical intervention and adhering to prescribed treatments. Community-based health education programs that respect and integrate local cultural practices could enhance health literacy and trust in modern healthcare, encouraging more proactive health-seeking behaviors.

Systemic and institutional barriers identified in this study include the shortage of medical staff, lack of essential medicines, and bureaucratic inefficiencies. Participants reported long wait times, frequent stockouts of medicines, and the need to travel to urban centers for diagnostic tests due to the lack of proper equipment at local health centers. Furthermore, corruption within the healthcare system was noted, where additional payments were often required to receive timely services. Addressing these systemic issues requires comprehensive policy interventions such as increasing healthcare workforce, ensuring consistent supply of medicines, upgrading medical facilities, and implementing strict anti-corruption measures to restore trust and improve service delivery.

Conclusion

This study underscores the need for a multi-pronged approach to overcoming the barriers to healthcare access in rural Hyderabad. Policymakers and healthcare administrators must work collaboratively to address financial, geographic, cultural, and systemic challenges. By investing in infrastructure, enhancing health education, expanding healthcare coverage, and improving institutional efficiency, it is possible to create a more equitable and effective healthcare system. Such efforts will not only improve access to healthcare but also foster healthier, more resilient rural communities in Hyderabad. Future research should continue to explore these barriers in greater depth and evaluate the effectiveness of implemented interventions to ensure sustainable improvements in healthcare access and outcomes.

References

- Ahmed, A., & Tahir, M. (2023). The Existing Ethnic Fault Lines of Pakistan: Its Impact on the Survival of State. *Global Pakistan Studies Research Review*, VI(I), 28-40. [https://doi.org/10.31703/gpsrr.2023\(VI-I\).03](https://doi.org/10.31703/gpsrr.2023(VI-I).03)
- Alhuwayfi, S., Alwakeel, A., Alhuwayfi, A. S., & Alhuwayfi, A. (2024). Systemic Review of Community-Based Interventions for Preventing Chronic Diseases in Preventive Medicine Practice. *The Egyptian Journal of Hospital Medicine* (January 2024), 94, 291-299.
- Aljassim, N., & Ostini, R. (2020). Health literacy in rural and urban populations: a systematic review. *Patient Education and Counseling*, 103(10), 2142-2154.
- Asim, M., Saleem, S., Ahmad, Z. H., Naeem, I., Abrejo, F., Fatmi, Z., & Siddiqi, S. (2020). Barriers to accessing maternal and newborn care: a qualitative study in district Thatta, Pakistan.
- Ayaz, A. (2022). Street culture and youth violence (a case study of urban areas of Hyderabad city) (Doctoral dissertation, Quaid I Azam university Islamabad).

- Bertoldo, J., Wolfson, J. A., Sundermeir, S. M., Edwards, J., Gibson, D., Agarwal, S., & Labrique, A. (2022). Food insecurity and delayed or forgone medical care during the COVID-19 pandemic. *American journal of public health*, 112(5), 776-785.
- Birmani, N. A., Buriro, S. A., Shaikh, A. M., & Dharejo, A. M. (2016). A new Notocotylid trematode *Paramonostomum Bagoderi* n. sp. (Trematoda: Notocotylidae) in Mallard *Anas platyrhynchos* (Anseriformes: Anatidae) in Sindh, Pakistan. *International Journal of Advanced Research in Biological Sciences*, 3, 130-135.
- Buriro, S. A., Chandio, I., & Memon, S. A. (2024). Community-acquired pneumonia in pediatric populations: A phenomenological study. *International Journal of Contemporary Issues in Social Sciences*, 3(1), 1819–1825.
- Buriro, S. A., Parveen, M., Hashmi, F. P., Nazly, A., Robinson, Y. A., & Alferd, A. (2024). Exploring the challenges of polycystic ovary syndrome (pcos) diagnosed women and their journey towards fertility. *Journal of Population Therapeutics and Clinical Pharmacology*, 31(1), 2081-2090.
- Buriro, S. A., Muhammad, S., Rtd, M. M. P., Channar, H. B., Memon, S. A., & Chandio, I. (2023). Analysis of infectious communicable and non-communicable diseases in Pakistan: A systematic review. *Journal of Population Therapeutics and Clinical Pharmacology*, 30(18), 2207-2217.
- Buriro, S. A., Nazly, A., Hashmi, F. P., Alexander, Y., Robinson, A. A., & Parveen, M. (2024). Exploring the lifestyle factors and diabetes management approaches among women. *Migration Letters*, 21(S10), 475-487.
- Buriro, S. A., Birman, N. A., & Shaikh, A. M. (2020). 96. New trematode *Psilochasmus platyrhynchoi* (Trematode: Psilochasmidae) from Mallard *Anas platyrhynchos* (Anseriformes: Anatidae) in Sindh province of Pakistan. *Pure and Applied Biology (PAB)*, 9(1), 1025-1030.
- Chauhan, P., Bali, A., & Kaur, S. (2024). Breaking barriers for accessible health programs: the role of telemedicine in a global healthcare transformation. In *Transformative Approaches to Patient Literacy and Healthcare Innovation* (pp. 283-307). IGI Global.
- Clarke, V., & Braun, V. (2017). Thematic analysis. *The journal of positive psychology*, 12(3), 297-298.
- Daniel, C. (2020). Is healthy eating too expensive?: How low-income parents evaluate the cost of food. *Social Science & Medicine*, 248, 112823.
- Debie, A., Nigusie, A., Gedle, D., Khatri, R. B., & Assefa, Y. (2024). Building a resilient health system for universal health coverage and health security: a systematic review. *Global Health Research and Policy*, 9(1), 2.
- de Wit, M., Trief, P. M., Huber, J. W., & Willaing, I. (2020). State of the art: understanding and integration of the social context in diabetes care. *Diabetic Medicine*, 37(3), 473-482.
- Ebirim, G. U., Ndubuisi, N. L., Unigwe, I. F., Asuzu, O. F., Adelekan, O. A., & Awonuga, K. F. (2024). Financial literacy and community empowerment: A review of volunteer accounting initiatives in low-income areas. *International Journal of Science and Research Archive*, 11(1), 975-985.
- Ezzat, M. A. (2023). Identifying Barriers to Healthcare Access Among Underserved Populations: A Descriptive Study. *Journal of Advanced Analytics in Healthcare Management*, 7(1), 1-17.
- Flores, D., George, A., & House, M. (2022). Rural health workforce development-a qualitative study of themes related to provider shortages in West Texas. *The Southwest Respiratory and Critical Care Chronicles*, 10(44), 35-39.
- Ibrahim, H., Liu, X., Zariffa, N., Morris, A. D., & Denniston, A. K. (2021). Health data poverty: an assailable barrier to equitable digital health care. *The Lancet Digital Health*, 3(4), e260-e265.
- Ihantamalala, F. A., Herbretreau, V., Révillion, C., Randriamihaja, M., Commins, J., Andréambeloston, T., ... & Garchitorena, A. (2020). Improving geographical accessibility modeling for operational use by local health actors. *International journal of health geographics*, 19, 1-15.
- Jamali, M., Shaikh, R., Raza, M., Solangi, S. P., Khan, W., Ullah, E., ... & Javaid, S. (2023). Access to Essential Medicines and Antimicrobial Agents in Rural Areas of Pakistan Specifically in Sindh. *Journal of Population Therapeutics and Clinical Pharmacology*, 30(17), 2010-2022.
- Kaiser, N., & Barstow, C. K. (2022). Rural transportation infrastructure in low-and middle-income countries: a review of impacts, implications, and interventions. *Sustainability*, 14(4), 2149.
- Kiselev, N., Pfaltz, M., Haas, F., Schick, M., Kappen, M., Sijbrandij, M., ... & Morina, N. (2020). Structural and socio-cultural barriers to accessing mental healthcare among Syrian refugees and asylum seekers in Switzerland. *European journal of psychotraumatology*, 11(1), 1717825.

- Lund, H. G., Birmani, N. A., Shaikh, A. M., & Buriro, S. A. (2017). A new species of genus *Cotugnia* Diamare (Cestoda: Davaineidae, Fuhrmann 1907) from domestic fowl (*Gallus domesticus*) of district Khairpur, Sindh, Pakistan. *Pakistan. J. Ent. Zool. Stud*, 5(5), 1827-1830.
- Maganty, A., Byrnes, M. E., Hamm, M., Wasilko, R., Sabik, L. M., Davies, B. J., & Jacobs, B. L. (2023). Barriers to rural health care from the provider perspective. *Rural and Remote Health*, 23(2), 1-11.
- Mbuya-Bienge, C., Simard, M., Gaulin, M., Candas, B., & Sirois, C. (2021). Does socio-economic status influence the effect of multimorbidity on the frequent use of ambulatory care services in a universal healthcare system? A population-based cohort study. *BMC health services research*, 21, 1-11.
- Mensah, A. B. B., Asuo, S. B., Mensah, K. B., Okyere, J., Kulasingam, S., Virnig, B., & Clegg-Lamptey, J. N. (2024). Utilisation of traditional medicine among women diagnosed with breast cancer in Ghana: a descriptive phenomenological study. *BMC Complementary Medicine and Therapies*, 24(1), 50.
- Olatomiwa, L., Blanchard, R., Mekhilef, S., & Akinyele, D. (2018). Hybrid renewable energy supply for rural healthcare facilities: An approach to quality healthcare delivery. *Sustainable Energy Technologies and Assessments*, 30, 121-138.
- Palozzi, G., Schettini, I., & Chirico, A. (2020). Enhancing the sustainable goal of access to healthcare: findings from a literature review on telemedicine employment in rural areas. *Sustainability*, 12(8), 3318.
- Pulimamidi, R. (2021). Emerging Technological Trends for Enhancing Healthcare Access in Remote Areas. *Journal of Science & Technology*, 2(4), 53-62.
- Raza, A., Matloob, S., Abdul Rahim, N. F., Abdul Halim, H., Khattak, A., Ahmed, N. H., ... & Zubair, M. (2020). Factors impeding health-care professionals to effectively treat coronavirus disease 2019 patients in Pakistan: a qualitative investigation. *Frontiers in psychology*, 11, 572450.
- Sakala, D., Kumwenda, M. K., Conserve, D. F., Ebenso, B., & Choko, A. T. (2021). Socio-cultural and economic barriers, and facilitators influencing men's involvement in antenatal care including HIV testing: a qualitative study from urban Blantyre, Malawi. *BMC public health*, 21, 1-12.
- Schatz, B. R., & Berlin Jr, R. B. (2011). *Healthcare infrastructure: Health systems for individuals and populations*. Springer Science & Business Media.
- Sengupta, S., & Jha, M. K. (2020). Social policy, COVID-19 and impoverished migrants: challenges and prospects in locked down India. *The International Journal of Community and Social Development*, 2(2), 152-172.
- Shady, K., Phillips, S., & Newman, S. (2024). Barriers and facilitators to healthcare access in adults with intellectual and developmental disorders and communication difficulties: an integrative review. *Review Journal of Autism and Developmental Disorders*, 11(1), 39-51.
- Shaikh, N., Falak Bamne, A. A., Momin, M., & Khan, T. (2024). *Herbal Medicine: Exploring Its Scope Across Belief Systems of the Indian Medicine*.
- Tsimicalis, A., Stevens, B., Ungar, W. J., Castro, A., Greenberg, M., & Barr, R. (2020). Shifting priorities for the survival of my child: managing expenses, increasing debt, and tapping into available resources to maintain the financial stability of the family. *Cancer Nursing*, 43(2), 147-157.
- Vootukuri, K., & Venkateswara, K. (2023). Emergence of Health Insurance as an Alternative to Out-of-Pocket Expenses. *Health Education and Health Promotion*, 11(3), 425-434.
- World Health Organization. (2024). *Working for a brighter, healthier future: how WHO improves health and promotes well-being for the world's adolescents*. World Health Organization.
- Yearby, R., Clark, B., & Figueroa, J. F. (2022). Structural Racism In Historical And Modern US Health Care Policy: Study examines structural racism in historical and modern US health care policy. *Health Affairs*, 41(2), 187-194.