INSIGHTS-JOURNAL OF
LIFE AND SOCIAL SCIENCES

INSIGHTS-JLSS
Insights-Journal of Life and Social Sciences

AWARENESS AND SCREENING BARRIERS FOR OCULAR TUMORS AMONG HIGH-RISK ADULTS IN LOW-INCOME URBAN COMMUNITIES

Original Article

Syed Hassan Idrees[1], Adnan Khan[2], Muhammad Zia Iqbal[3], Aroobah Jawwad[4], Muhammad Israr[5]*, Dua Imran[6], Muhammad Damil Farid[7]

[1]MBBS, DPH, DOMS (Resident in Ophthalmology), Postgraduate Resident, Department of Ophthalmology, Al-Shifa Trust Eye Hospital, Rawalpindi, Pakistan, Department of Public Health, Health Services Academy, Islamabad, Pakistan.
[2]Abbottabad International Medical Institute, Abbottabad, Pakistan.
[3]Ophthalmologist and Ex-Professor, Dow Medical College, Karachi, Pakistan.
[4]Karachi Medical and Dental College (KMDC), Karachi, Pakistan.
[5]Vitroretinal Fellow, Khyber Teaching Hospital, Peshawar, Pakistan.
[6]Lahore Grammar School (LGS), Islamabad, Pakistan.
[7]MBBS Student, Avicenna Medical College, Lahore, Pakistan.

Corresponding Author: Muhammad Israr, Vitroretinal Fellow, Khyber Teaching Hospital, Peshawar, Pakistan, israrmaluk@gmail.com

Conflict of Interest: None

Grant Support & Financial Support: None

Acknowledgment: The authors thank all participants for their valuable insights.

ABSTRACT

Background: Ocular tumors, though rare, pose serious risks to vision and life if not detected early. In low-income urban communities, barriers to early screening persist due to multiple socio-cultural and structural factors. Despite the availability of healthcare services in urban areas, marginalized populations remain underserved due to poor health literacy, economic constraints, and systemic neglect.

Objective: To explore awareness levels and identify social, cultural, and structural barriers to early ocular tumor screening among high-risk adults residing in low-income urban communities of Lahore, Pakistan.

Methods: A qualitative study was conducted over eight months using purposive sampling to recruit 42 high-risk adults aged 35 and above from underserved neighborhoods in Lahore. Data were collected through semi-structured in-depth interviews and analyzed using thematic content analysis supported by NVivo software. Themes were derived inductively until saturation was achieved, focusing on personal narratives, healthcare access, and socio-cultural perceptions.

Results: Five major themes emerged: limited awareness of ocular tumors, sociocultural misconceptions, structural barriers to healthcare access, economic constraints, and distrust in healthcare systems. Participants demonstrated poor understanding of ocular malignancies, often attributing symptoms to aging or spiritual causes. Access was hindered by cost, clinic logistics, and negative past healthcare experiences. Economic hardship led many to deprioritize preventive care, and systemic mistrust further discouraged engagement with formal health services.

Conclusion: The study highlights that addressing ocular tumor screening gaps in low-income urban populations requires culturally tailored education, improved service accessibility, and community-centered trust-building efforts. Interventions must holistically address the socioeconomic realities and belief systems influencing healthcare-seeking behaviors.

Keywords: Eye Neoplasms, Health Literacy, Health Services Accessibility, Low-Income Population, Ocular Oncology, Pakistan, Qualitative Research.

INTRODUCTION

Ocular tumors, though relatively rare, pose a significant threat to vision and life if not detected and treated early (1). These tumors—ranging from benign lesions to malignant conditions such as retinoblastoma or uveal melanoma—can progress rapidly and result in irreversible damage, including loss of the eye or metastasis to distant organs. Early screening is critical for timely diagnosis and effective intervention. However, access to screening and early care remains disproportionately low in certain populations, particularly among adults residing in low-income urban communities (2). Despite advancements in diagnostic technologies and treatment modalities, individuals in these settings continue to experience barriers that hinder timely ocular tumor detection, contributing to poorer outcomes and greater disease burden. Low-income urban communities often grapple with a complex intersection of social, economic, and systemic challenges that negatively influence healthcare-seeking behaviors (3). These populations are frequently underserved by the healthcare system, with limited access to specialized care, including ophthalmologic services. Health literacy levels tend to be lower, with limited awareness about rare but severe conditions such as ocular tumors. In such contexts, the perceived threat of ocular disease is often overshadowed by more immediate socioeconomic concerns, such as employment insecurity, housing instability, and food access. Preventive health measures, including ocular screenings, are rarely prioritized unless symptoms become severe or debilitating. Consequently, diagnoses are often delayed until the disease has advanced, reducing the likelihood of positive health outcomes (4).

The issue of awareness emerges as a central factor in understanding the underutilization of ocular screening services. Public health campaigns around eye health typically focus on more common conditions such as cataracts, refractive errors, and diabetic retinopathy (5). Ocular tumors receive little attention in community-based health education, leaving high-risk individuals uninformed about the signs, symptoms, and urgency associated with these conditions (6). Moreover, cultural beliefs and health perceptions can influence how symptoms are interpreted and when individuals decide to seek care. In some communities, there is a strong reliance on informal care networks, traditional remedies, or fatalistic views of illness, all of which may delay professional consultation. Financial barriers also significantly impact screening behavior (7). Even in urban settings where medical facilities are geographically accessible, the cost of specialized diagnostic procedures, transportation, and follow-up care can be prohibitive. For uninsured or underinsured adults, the expense of an eye examination—particularly when asymptomatic—may be deemed non-essential. In addition, logistical issues such as long wait times, limited clinic hours, and language barriers further discourage engagement with the healthcare system. These structural inadequacies are compounded by a sense of mistrust in medical institutions, which is often rooted in historical inequities and perceived discrimination, particularly among racial and ethnic minorities (8).

Despite being geographically located within reach of healthcare infrastructure, many individuals in low-income urban areas are functionally excluded from receiving comprehensive eye care (9). This paradox reflects the multifaceted nature of healthcare access, where physical proximity does not guarantee utilization. Screening for ocular tumors requires more than the availability of services; it demands culturally sensitive outreach, community engagement, and targeted education that resonates with the lived experiences of high-risk populations (10). Importantly, efforts to promote screening must account for the broader social determinants of health that shape individual decision-making (11). Currently, there is a scarcity of qualitative research that specifically explores the awareness levels and social barriers related to ocular tumor screening in underserved urban communities. Most existing literature focuses on clinical aspects or population-wide data, often neglecting the nuanced perspectives of those most affected. Without a deeper understanding of the psychosocial and contextual factors that hinder early detection, interventions are likely to fall short of their intended impact. Addressing this gap is crucial for designing strategies that are both effective and equitable. This study aims to explore the awareness and social barriers that prevent early ocular tumor screening among high-risk adults living in low-income urban communities. By capturing the voices and lived realities of individuals in these settings, the research seeks to illuminate the underlying factors that contribute to late diagnosis and to inform the development of culturally appropriate and socially responsive health interventions (12).

METHODS

This qualitative study was conducted over a period of eight months in various low-income urban localities within the Lahore region of Pakistan. The research was situated in neighborhoods characterized by dense populations, limited access to specialized healthcare services, and a high prevalence of socioeconomic stressors that may influence health behaviors. These areas were purposively selected due to their demographic profiles and existing healthcare disparities, providing a relevant setting for exploring awareness and screening barriers related to ocular tumors. A purposive sampling technique was employed to recruit adult participants considered high-risk for ocular tumors. This risk classification was determined based on criteria such as prolonged exposure to environmental pollutants, family

history of ocular or systemic malignancies, occupational exposure to carcinogens, and individuals above the age of 40 with a history of chronic ocular symptoms or visual changes. Participants were included if they were permanent residents of low-income urban neighborhoods in Lahore, aged 35 years and above, and had not undergone any form of ocular tumor screening in the past five years. Exclusion criteria included individuals with previously diagnosed ocular malignancies, acute psychiatric disorders that could impair participation, or inability to provide informed verbal consent due to cognitive or linguistic limitations.

The study sample comprised 42 participants, a size determined through iterative sampling with the goal of reaching thematic saturation. Saturation was evaluated during the data collection phase, and recruitment continued until no new themes emerged across multiple interviews. The diverse sample included individuals from various socioeconomic backgrounds, educational levels, and occupational categories, enabling the exploration of a broad spectrum of experiences and perceptions relevant to the research objective. Data collection was conducted through semi-structured, in-depth interviews using an interview guide developed specifically for the study. The guide was designed to elicit detailed narratives about participants' understanding of ocular tumors, their perceptions of personal risk, knowledge of available screening services, and the social, cultural, and systemic barriers they encountered. The questions were open-ended and flexible, allowing for the exploration of emergent themes and enabling participants to share their experiences in their own words. Interviews were conducted in either Urdu or Punjabi, depending on participant preference, and held in community centers, participants' homes, or other mutually convenient and private locations. Each interview lasted between 45 to 75 minutes and was audio-recorded with verbal consent. Field notes were also maintained to capture contextual details, non-verbal cues, and reflections on the interview process. The interviews were transcribed verbatim and translated into English by bilingual researchers fluent in the local languages. To ensure accuracy and cultural relevance, translations were cross-verified by independent reviewers familiar with both the language and the healthcare context.

The data analysis followed a thematic content analysis approach. Transcripts were read multiple times for familiarization, followed by coding using a combination of inductive and deductive techniques. An initial coding framework was developed based on the study objectives and modified iteratively as new themes emerged from the data. Codes were organized into categories and overarching themes through a constant comparative method. NVivo qualitative data analysis software was used to support data management, coding, and thematic structuring. To enhance the credibility and trustworthiness of the findings, triangulation was applied by involving multiple researchers in the coding process, and regular peer debriefing sessions were conducted to address potential bias and ensure consistency in interpretation. Throughout the analytical process, particular attention was paid to the intersection of social determinants, health literacy, and personal narratives, providing a grounded understanding of the barriers to ocular tumor screening. Emergent themes were interpreted in light of existing sociocultural dynamics within the Lahore urban context. Additionally, reflexivity was maintained through the research process to acknowledge and account for the researchers' positionality and influence on the data collection and interpretation stages. To assess outcomes aligned with the study objective, the primary measurement tool was thematic saturation, evaluated by the richness and recurrence of core themes related to awareness and social barriers. Supplementary outcome indicators included the diversity of screening deterrents identified, depth of awareness levels articulated by participants, and the clarity with which socio-cultural constructs influenced health behaviors. These outcomes were not quantified but qualitatively gauged through narrative patterns and inter-thematic relationships, offering insight into the bio-social frameworks shaping ocular health decisions. By capturing the lived experiences of high-risk adults in underserved communities, this methodological approach allowed for an in-depth exploration of how knowledge gaps, cultural beliefs, and structural inequities collectively hinder early ocular tumor detection. The study design offers a replicable and context-sensitive framework for understanding similar barriers in other low-resource urban settings.

RESULTS

The findings revealed several interrelated themes that collectively illustrated the complex barriers high-risk adults in low-income urban communities faced in seeking early screening for ocular tumors. Data saturation was achieved after 42 interviews, with a wide range of perspectives contributing to a nuanced understanding of individual and systemic challenges.

The first prominent theme was limited awareness of ocular tumors. Most participants demonstrated minimal understanding of ocular malignancies, often confusing them with more common eye conditions such as cataracts or infections. Few were aware that tumors could manifest in the eye or that early screening was even possible. One participant noted, *"I never heard of any cancer in the eye. People talk about heart or chest cancer, not this."* Another echoed, *"Unless something hurts or blocks my sight completely, I don't think*

to get it checked." This theme was consistently coded with references to unfamiliarity with warning signs, confusion between benign and malignant conditions, and lack of targeted health messaging.

Sociocultural misconceptions emerged as a second key theme. Many participants attributed visual symptoms to supernatural causes, aging, or "evil eye" influences rather than potential medical issues. There was a noticeable reliance on spiritual healers or home remedies, particularly in early symptom stages. A participant shared, *"We usually go to a peer or someone who does spiritual work if something strange happens with the eye."* Others described the use of herbal drops or household treatments before considering medical care. These beliefs delayed clinical consultations and reinforced passive attitudes toward preventive screening.

Structural barriers to access were also frequently cited. Despite being in urban settings, participants described how long waiting times, overcrowded clinics, and inconvenient operating hours discouraged them from seeking eye care. Transportation costs and safety concerns, particularly for elderly or female participants traveling alone, further compounded the issue. One respondent stated, *"You have to leave early in the morning, wait the whole day, and maybe they still don't check you properly."* The subtheme of logistic inflexibility recurred in nearly every interview, pointing to a need for decentralized or community-based screening options.

Economic constraints represented a critical theme affecting decision-making. Even when participants were aware of eye clinics, many could not afford consultation fees, diagnostic imaging, or follow-ups. The perception of eye care as a luxury rather than an essential need was common, especially when symptoms were not perceived as urgent. One individual remarked, *"It costs too much. If I don't feel pain, I'd rather spend that money on food or school fees."* References to income insecurity, lack of insurance, and opportunity costs of missing work were prevalent across responses.

Finally, distrust in the healthcare system emerged as a subtle but persistent theme. Participants recalled previous encounters marked by perceived neglect, rudeness, or unclear explanations from healthcare staff. This eroded their confidence and willingness to return for preventive care. One participant explained, *"They don't explain anything. You just sit and wait, and then they send you away with pills without telling what's wrong."* Another added, *"It's like they treat poor people differently. You can feel it."* These narratives underscored how emotional and relational experiences within health institutions influenced health-seeking behavior.

Overall, the results illustrated that barriers to ocular tumor screening in these communities are not solely medical or informational but deeply embedded in social, cultural, and economic systems. Each theme was rooted in lived experiences, highlighting the importance of localized, empathetic interventions that go beyond awareness campaigns.

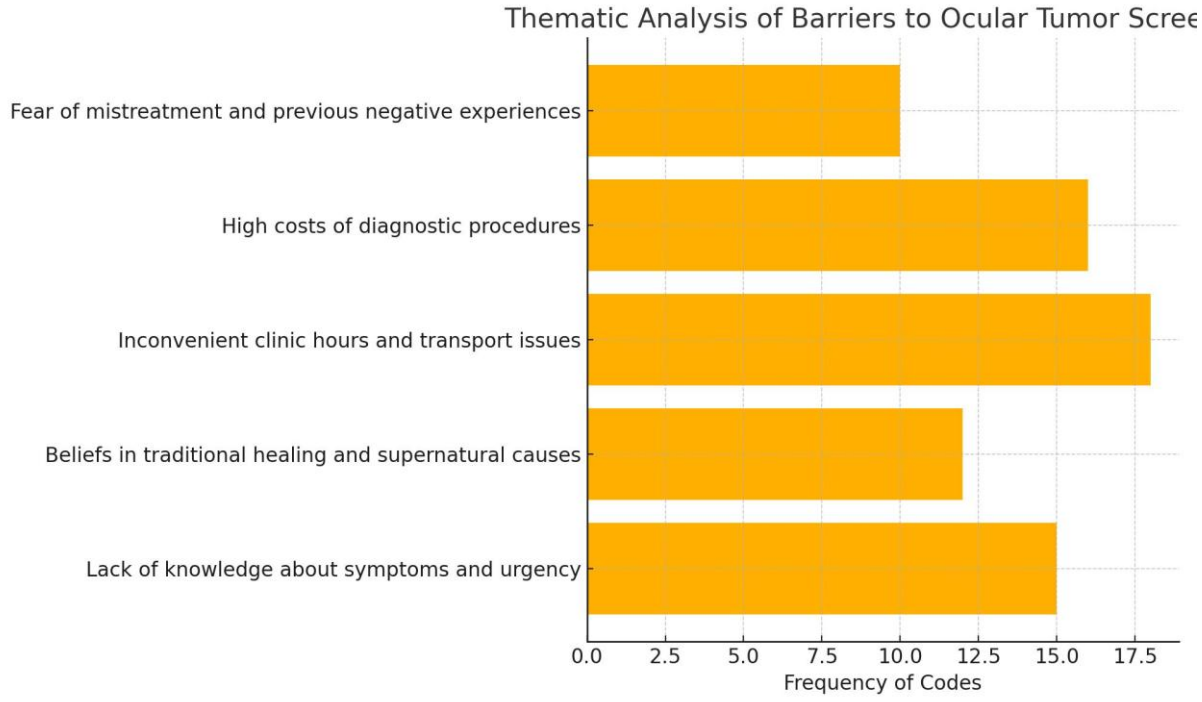

Figure 1 Thematic Analysis of Barriers to Ocular Tumor Screen

DISCUSSION

The findings of this study offered a critical exploration into the socio-cultural and structural landscape shaping access to ocular tumor screening in underserved urban populations. Consistent with prior research, awareness was found to be fundamentally lacking, with participants exhibiting little to no knowledge about the existence, symptoms, or risks associated with ocular tumors (13). This deficit was not merely informational but reflective of broader systemic neglect, where educational outreach has historically prioritized more prevalent conditions like cataracts or diabetic retinopathy. The absence of ocular oncology in routine eye health discourse left a vacuum filled by assumptions, misconceptions, and silence, especially within marginalized communities (14). The identified sociocultural barriers aligned with patterns reported in comparable settings, where health beliefs are deeply interwoven with cultural narratives and traditional healing practices. Participants' reliance on spiritual explanations for symptoms and their preference for non-medical interventions prior to seeking clinical care emphasized how culturally embedded health behaviors can delay necessary medical attention. While such beliefs are not inherently problematic, their unchecked influence in the absence of parallel medical awareness creates a high-risk scenario for conditions that require timely intervention (15). Previous research has underscored the same dynamics in contexts where healthcare is not perceived as culturally congruent or responsive, reinforcing community disengagement. Structural access barriers were another significant contributor to delayed screening, despite participants residing in urban environments where medical infrastructure was theoretically present. These findings further validated the understanding that physical proximity to healthcare services does not equate to functional access. Long queues, inconvenient hours, absence of female-friendly environments, and inadequate public transport systems combined to create substantial friction in healthcare engagement. These logistical constraints were particularly burdensome for daily wage earners, women, and the elderly, confirming that accessibility must be evaluated through both spatial and socioeconomic lenses (16).

Economic constraints compounded existing barriers by framing eye care as a low-priority or luxury concern. Even where awareness existed, participants often avoided screening due to high out-of-pocket expenses, diagnostic costs, and lost income from time taken off work (17). These economic choices reflected harsh trade-offs that households in financial precarity must make. Notably, the findings highlighted that cost-related concerns were not limited to the direct price of care, but also included indirect costs such as travel, wait times, and the uncertainty of being referred to tertiary centers without guarantees of treatment affordability (18). An undercurrent of healthcare system distrust emerged prominently across narratives, echoing earlier studies on marginalized groups' interactions with institutional care. Participants described demeaning encounters with health professionals, lack of clear communication, and an impersonal clinical environment. These experiences often led to a perception of systemic neglect, where poverty correlated with poor treatment quality (19). Such perceptions are damaging not only in the moment but in the long-term relationship between communities and health institutions. Trust, once eroded, is difficult to rebuild, especially in systems where accountability mechanisms are weak or absent. This study brought to light several strengths. The qualitative approach allowed for an in-depth understanding of personal, cultural, and systemic barriers that would otherwise be flattened in quantitative surveys. The use of participants' own language and contextual narratives added richness and authenticity to the findings, capturing the complexity of lived experience. By situating the study in a specific urban region of Pakistan, it offered valuable localized insights, which can guide targeted interventions and policy development (20).

However, limitations were acknowledged. The findings were drawn from a relatively small and geographically concentrated sample, limiting generalizability to other urban or rural settings (21). Additionally, the study did not include healthcare providers or policymakers, whose perspectives could have complemented community narratives and offered a fuller picture of systemic gaps. Language translation, while carefully managed, may have influenced nuance or expression (22). Future studies may benefit from triangulating these findings with observational methods or expanding to other sociolinguistic regions to capture diverse community perceptions. In terms of future directions, this study highlighted the urgent need for culturally sensitive, community-integrated screening programs that address both informational and logistical barriers. Interventions that engage local influencers, spiritual leaders, and community health workers could be instrumental in shifting perceptions and facilitating early screening behaviors (23). Public health messaging should move beyond clinical vocabulary to reflect community language, values, and concerns. Moreover, decentralization of services through mobile screening units or tele-ophthalmology could mitigate the structural burdens highlighted. Further research exploring gender-specific barriers, and the role of trust-building interventions within healthcare systems, would also add value to the field. Overall, this study reaffirmed that the barriers to ocular tumor screening are deeply embedded in social determinants, cultural beliefs, and infrastructural limitations. Addressing them requires a holistic strategy that humanizes care, centers community voices, and rebuilds trust through accessible, respectful, and contextually responsive healthcare delivery (24).

CONCLUSION

This study revealed that low awareness, cultural misconceptions, economic hardship, and systemic distrust are key barriers preventing early ocular tumor screening among high-risk adults in low-income urban communities. These findings emphasize the urgent need for culturally sensitive education, accessible screening services, and trust-building within healthcare systems. Addressing these barriers can significantly improve early detection and outcomes for vulnerable populations.

AUTHOR CONTRIBUTION

Author	Contribution
Syed Hassan Idrees	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Adnan Khan	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Muhammad Zia Iqbal	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published
Aroobah Jawwad	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Muhammad Israr*	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Dua Imran	Substantial Contribution to study design and Data Analysis Has given Final Approval of the version to be published
Muhammad Damil Farid	Contributed to study concept and Data collection Has given Final Approval of the version to be published

REFERENCES

1. Palaniraja S, Taghavi K, Kataria I, Oswal K, Vani NV, Liji AA, et al. Barriers and contributions of rural community health workers in enabling cancer early detection and subsequent care in India: a qualitative study. 2025;25(1):1527.

2. Jamal O. Exploring the Relationship Between the Social Determinants of Health and Health Inequities in Pediatric Ophthalmology: University of Toronto (Canada); 2024.

3. Malika NM. Understanding the Psychosocial Factors Affecting Prostate Cancer Screening in African Immigrant Men. 2021.

4. Williams ED. Healthcare Leadership Perceptions of Screening for Social Risk Factors, Toward Colorectal Cancer Screening Uptake: Franklin University; 2023.

5. Blackwell AD. Assessing the Percieved Barriers to Early Detection, Treatment, and Management of Cervical Cancer among Ghanaian Women. 2020.

6. Davis R. Low income African American perceptions of barriers to healthcare: Aurora University; 2017.

7. Foster VC. Afro-Caribbean Men's Perceptions on Prostate Cancer Screening: A Qualitative Exploratory Case Study: University of Phoenix; 2023.

8. Wankah P, Chandra S, Lofters A, Mohamednur N, Osei B, Makuwaza T, et al. Improving Digital Cancer Care for Older Black Adults: Qualitative Study. 2025;27:e63324.

9. Webb Hooper M, Mitchell C, Marshall VJ, Cheatham C, Austin K, Sanders K, et al. Understanding multilevel factors related to urban community trust in healthcare and research. 2019;16(18):3280.

10. Carolyn Messner D, OSW-C F, Moore C. Late-Breaking.

11. Neuert DL. Bridging the gap: To what extent do socioeconomic barriers impede response to emerging public health threats. 2017.

12. Carrasco P. Qualitative role of health literacy access among adult hispanic americans and how it affects self-care attitudes: University of St. Thomas (Houston); 2024.

13. Dzahini B. The Influence of Cultural Differences on Cervical Cancer Screening: A systematic literature review. 2025.

14. Amaihe U, Widiatmoko D, Aloke I. Qualitative Approach to Investigating Individual-Associated Factors Affecting The Uptake of Prostate Cancer Screening Among African American Men: A Systematic Literature Review.

15. Fatima R, Kone A. Barriers in Healthcare for People with Sexually Transmitted Infections in Sub-Saharan Africa; A Systematic Review of Qualitative Studies. 2025.

16. Zia S. Aggravating Factors, Migraine Severity, and Healthcare Access among UK South Asians: A Systematic Review. 2025.

17. Melhem SJ, Nabhani-Gebara S, Kayyali RJDH. Leveraging e-health for enhanced cancer care service models in middle-income contexts: Qualitative insights from oncology care providers. 2024;10:20552076241237668.

18. Soman B, Lathika AR, Unnikrishnan B, Shetty RSJJoR, Disparities EH. Tracing the disparity between healthcare policy–based infrastructure and health belief–lead practices: A narrative review on indigenous populations of india. 2024;11(6):3572-83.

19. Tastsoglou EJS. Gender-Based Violence in a Migration Context: Health Impacts and Barriers to Healthcare Access and Help Seeking for Migrant and Refugee Women in Canada. 2025;15(3):68.

20. Ahmed R, Mao YJHC. An Intersectional approach to understanding beliefs and attitudes toward mental health issues among muslim immigrant women in Canada. 2024;39(10):2014-25.

21. Badran L, Rizkalla N, Segal SPJBPH. Muslim considerations in seeking mental health help in California and Israel: a qualitative approach. 2025;25(1):1077.

22. Li L, Fu L, Li H, Liu T, Sun JJM. Emerging trends and patterns in healthcare-seeking behavior: A systematic review. 2024;103(8):e37272.

23. Mulugeta T, Alemu W, Tigeneh W, Kaba M, Haileselassie WJBo. Breaking bad news in oncology practice: experience and challenges of oncology health professionals in Ethiopia–an exploratory qualitative study. 2024;14(5):e087977.

24. Alexander K. Examining Health Literacy and Medical Discrimination in Black Caregivers of Persons Living With Dementia: An Explanatory Sequential Mixed Methods Study: Emory University; 2024.

