Original Article

JHSMR Journal of Health Science and Medical Research

Challenges and Barriers to Utilizing Eye Care Services Among Urban Population Globally: A Scoping Review

Nur Suhailah Alias, B.Optom[1,2], Noor Halilah Buari, Ph.D.[1]

[1]Centre for Optometry Studies, Faculty of Health Science, Universiti Teknologi MARA Selangor, Puncak Alam Campus, 42300 Bandar Puncak Alam, Selangor, Malaysia.

[2]Matacare Optometrist, No 7-1, Jalan Dataran Suria 15/7, 42300 Bandar Puncak Alam, Selangor, Malaysia.

Received 17 September 2024 ● Revised 24 September 2024 ● Accepted 24 September 2024 ● Published online 18 October 2024

Abstract:

Objective: Eye health is crucial for overall well-being, relying on eye care services for the prevention and treatment of vision disorders. Increasing blindness rates underscore the need for early detection. Despite known urban-rural disparities in eye care utilization, urban challenges are underexplored. This scoping review summarized and determined the challenges and barriers to utilizing eye care services specifications in urban populations globally.

Material and Methods: A search was conducted on multiple databases such as Scopus, ScienceDirect, WOS, PubMed, and Google Scholar, covering the period of 2000 to 2023. The criteria were selected based on the PRISMA statements. The search focuses on challenges and barriers in utilizing eye care services.

Results: The search identified 464 studies, and 18 were included in the final review. Person-related and service-related barriers can be distinguished from the review. The most common challenges were lack of felt need the eye care services and cost. Person-related barriers were found to be higher compared to service-related barriers among urban populations.

Conclusion: The scoping review highlights significant person-related and service-related barriers to utilizing eye care services in urban populations globally. Despite the availability of services, person-related barriers were more pronounced, indicating a critical need for targeted interventions. Addressing these barriers is essential to enhance eye care services and reduce the prevalence of vision disorders in urban settings.

Keywords: barriers, Healthcare accessibility, Healthcare service, Urban eye care, utilization rate

This paper was from the Memorandum of Agreement between Prince of Songkla University, Thailand and Universiti Teknologi MARA, Malaysia "Special Issue on Eye and Vision" 2024

Contact: Noor Halilah Buari, Ph.D.
Centre for Optometry Studies, Faculty of Health Science, Universiti Teknologi MARA Selangor, Puncak Alam Campus, 42300 Bandar Puncak Alam, Selangor, Malaysia.
E-mail: noorhalilah@uitm.edu.my

J Health Sci Med Res 2024;42(6):e20241098
doi: 10.31584/jhsmr.20241098
www.jhsmr.org

Introduction

A good eye health is characterized by optimal vision, ocular health, and functional ability, which collectively contribute to overall health and well-being, social inclusion, and quality of life. Eye care services provided by professionals, including optometrists and ophthalmologists, are essential in maintaining this level of eye health. These services cover a comprehensive range, including promotion, prevention, treatment, and rehabilitation, which denotes their critical role in both preventing and managing eye and vision disorders.

In 2020, 49.1 million among 7.79 billion people were estimated to be blind worldwide. Another 221.4 million people had moderate visual impairment, and 33.6 million people had severe visual impairment globally[1]. The most common causes of visual impairment and blindness were cataracts and uncorrected refractive error, which were preventable and reversible if detected early[1]. At the same time, the underutilization of eye care services continues to be a substantial impediment to individuals needing vision care and to public health efforts to prevent and treat vision problems. Therefore, regular eye check-ups are essential in identifying any ocular abnormality at an early stage, facilitating early intervention, and reducing the risk of irreversible vision loss.

The issue of eye-related problems and visual impairment affects people across all demographics and geographic areas. Even though the population in urban areas may have better access to healthcare infrastructure, still the prevalence of vision impairment is quite high among urban dwellers[2]. There is a probability of utilization or accessibility issues that contribute towards eye care utilization. Understanding these issues is essential for developing targeted interventions and bridging the gap between service availability and actual utilization.

Additionally, vision plays a fundamental role in various aspects of life, including education, employment, and overall quality of life[3]. Visual impairments can profoundly affect an individual's ability to perform daily activities, work, and participate fully in society. By comprehensively understanding the challenges urban populations face in accessing eye care services, policymakers, healthcare professionals, and public health advocates can tailor interventions that address the specific needs of urban communities, ultimately contributing to improved eye health outcomes.

Despite the importance of eye care services, the uptake of eye care services demonstrates significant variations between urban and rural areas on a global scale, influenced by factors such as cost and service availability[4,5]. A study conducted in Australia's urban and rural regions also reported that eye care utilization in urban areas was higher (40%) compared to rural areas (25%)[5]. Despite the higher utilization in the urban areas compared to rural areas, still less than half of the population in urban utilized eye care services. This discrepancy might suggest specific challenges or barriers that influence urban dwellers to uptake eye care services. However, most studies predominantly focus on identifying and addressing challenges among rural dwellers, with limited attention to urban settings. Therefore, this review aims to provide insight into the challenges and barriers to utilizing eye care services specifications in urban populations worldwide.

Material and Methods

A scoping review was conducted using the methodological framework of Arksey and O'Malley[6] covering the period between 2000 and 2023 to obtain all possible published studies related to challenges or barriers in the utilization of eye care services in urban areas. The methodological framework consists of five stages, namely (i) identification of the research question, (ii) identification of relevant studies, (iii) selection studies, (iv) data charting, (v) data collecting, summarising, and reporting the results[6].

Stage 1: Identifying the research question

The research team members developed the review questions. This scoping review addresses the following research questions: "What are the challenges of the utilization of eye care services in urban population?" and "What are the barriers to taking eye care services among urban population?".

Stage 2: Identification of relevant studies

A thorough search was conducted in December 2023 and revised in February 2024. Five scientific databases, including Scopus, ScienceDirect, WOS, PubMed, and Google Scholar, were utilized to search for papers using index terms and keywords. The scientific databases were chosen due to their relevance and comprehensive coverage of eye care and public health research. The terms and keywords were "challenges," "barriers," "utilizing eye care services," "eye care," "eye health," and "urban." We included peer-reviewed journal publications, research conducted among urban populations, and studies published in English with full text. The review included quantitative, qualitative, and mixed-method studies. Additionally, only studies published between 2000 and 2023 were considered for review. The exclusion criteria were papers published in a non-English language, commentary letters, editorial studies, and reviewed studies. Studies focused on eye surgeries in tertiary eye care services and those conducted only in rural areas were also excluded.

Stage 3: Selection of studies

The studies were chosen according to inclusion and exclusion criteria, with initial screening of titles and abstracts preceding full-text review. Screening data extraction and reports were conducted by team members proficient in English. The resulting sources were compiled into a Microsoft Excel 2016 spreadsheet for data charting.

Stage 4: Data charting

The data was charted into the spreadsheet according to the characteristics of the studies, such as author, year of publication, study design, the aim of the study, sample size, and key findings about the challenges and barriers in utilizing eye care services. Further, the data were categorized into thematic analysis.

Stage 5: Data collection, summarising, and reporting the result.

Following data charting, the findings were synthesized. To summarise the extracted data, a narrative summary of the results was presented. The results were described in relation to the research questions of this scoping review to provide a clear understanding in the form of a table. This analysis focused on the challenges in utilizing eye care services in urban settings.

Results

The preferred reporting items for systematic reviews and meta-analysis (PRISMA) guidelines and checklists were followed in this study, as illustrated in Figure 1[7]. PRISMA techniques assist authors in ensuring transparency and complete reporting of systematic reviews and meta-analyses. In order to facilitate the reporting of systematic reviews that evaluate the benefits and risks of various health conditions, the authors developed the PRISMA statement and its accompanying explanation paper. This PRISMA technique is well-established and has been used by multiple studies[7–9]. The search yielded a total of 464 studies. After 133 duplicate studies were removed, the remaining 331 studies were screened by their title and abstracts. During the screening process, 167 studies were excluded. The final 164 studies were selected for full-text review. Some of the 164 studies that were being reviewed did not meet the inclusion criteria, leaving 18 studies for the final reviewing process (Figure 1).

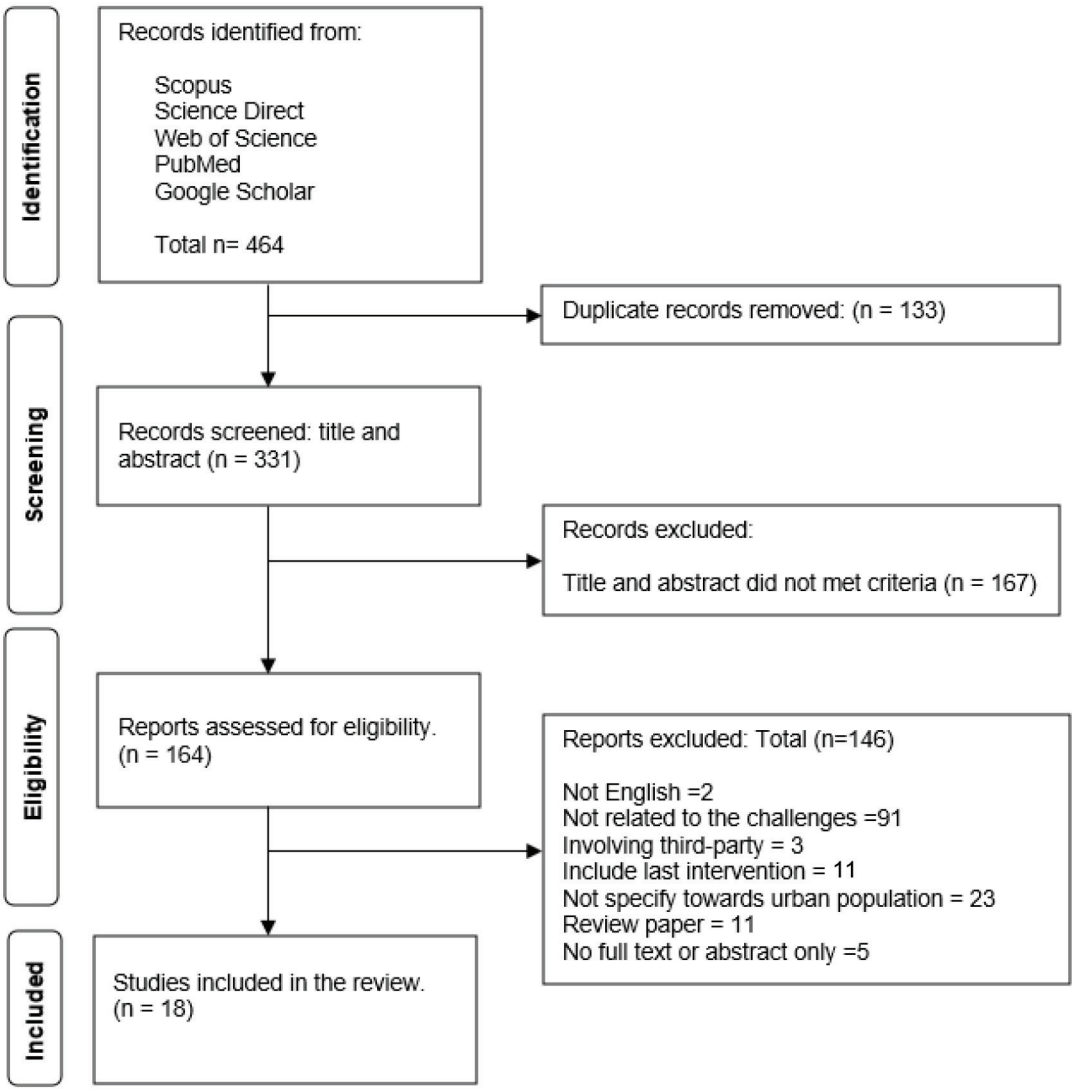

Figure 1 PRISMA flowchart of the scoping review process

Key characteristics of the included studies are presented in Table 1. Most of the studies were conducted in the United States (n=4) and India (n=4), followed by Timor-Leste (n=2), Australia (n=1), Papua New Guinea (n=1), Japan (n=1), Cambodia (n=1), Nigeria (n=1), Africa (n=1), Canada (n=1) and Indonesia (n=1). The majority of the study utilized cross-sectional study design (n=11). This was followed by six qualitative studies (n=6) and one retrospective study (n=1).

Table 1 displays the narrative summary of the urban population's challenges in utilizing eye care services. Lack of perceived need is the feeling of not having an eye examination was the most significant challenge, accounting for 72.2% (13 out of 18 studies). Time constraints were the second most common challenge, at 50% (9 out of 18 studies), and cost was the third most common challenge, at 44.4% (8 out of 18 studies). Besides that, poor knowledge and awareness of regular eye check-ups' importance were

some of the challenges in the uptake of eye care services at 27.7% (5 out of 18 studies). 22.2% (4 out of 18 studies) cited a lack of companionship and poor knowledge and awareness of ocular conditions as challenges. Three (3) out of 18 studies (16.6%) reported other challenges, including fear, waiting times to see eye care providers, appointment availability, and service availability in the uptake of eye care services among urban dwellers.

Table 1 Summary of the challenges in utilizing eye care services among urban residents (N=18)

Author (s)	Year	Study location	Study design	Study sample size	The aims of the study	Challenges in utilizing eye care services
Scanzera et al.[10]	2023	United States of America	Qualitative study	N=17	To explore barriers and facilitators to complete scheduled appointments at an urban academic hospital–based ophthalmology department	Transportation issues Waiting time in the clinic No family to accompany them to the eye care centre. Hourly wage or fixed income results in difficulty adhering to the set appointment
Pawar et al.[11]	2023	India	Cross–sectional study	N=159	To identify socio–economic, demographic, and clinical factors that may be associated with sibling access to ophthalmic check–ups	Unable to leave work responsibilities
Owusu et al.[12]	2023	Papua New Guinea	Cross–sectional study	N=104	To determine the barriers to utilizing eye care services in Papua New Guinea	Time constraints Poor knowledge about the ocular condition
Nguyen et al.[13]	2022	Canada	Qualitative study	N=14	To explore the facilitators and barriers towards teleophthalmology in primary care settings in Toronto, Canada	Lack of understanding of ocular disorder Lack of knowledge of the healthcare system
Goyal et al.[14]	2022	United States of America	Retrospective study	N=380	To identify barriers to utilizing eye care services and the burden of reduced visual function among the at–risk urban underserved population	Cost Insurance issues due to fear of unexpected bills to pay for eye care services. Transportation issues Time constraints Unaware of the need for eye care services Unsure where to seek the eye care services
Ford et al.[15]	2021	Australia	Qualitative study	N=15	To identify enablers and barriers to access public eye care services in Australia's low socio–economic urban areas	Unable to choose appointment times, days, and locations and passively wait for dates. Frustrated with long waiting times to meet eye care providers
Ramchandran et al.[16]	2020	United States of America	Qualitative study	N=23	To investigate how patients value the teleophthalmology examination offered by urban US primary care provider (PCP) practices serving low–income, minority patients	Eye health is not a priority or not motivated Cost Difficulty scheduling an eye examination Unaware of ocular symptom Transportation issues

Table 1 Continued

Author (s)	Year	Study location	Study design	Study sample size	The aims of the study	Challenges in utilizing eye care services
Amritanand et al.[17]	2020	India	Cross-sectional study	N=950	To test the accuracy of a questionnaire-based tool administered by trained community-based rehabilitation volunteers (CBRVs) in identifying persons with a visual disability, proportions accessing referral pathways, and barriers to uptake of eye care services	Not feeling the need to get an eye care service Have other priorities (household importance) Financial constraints
Fairless et al.[18]	2020	United States of America	Qualitative study	N=24	To characterize the factors that influence the recipient of diabetic eye care in this population	Absence of any visual symptoms Presence of other health issues, employment, and childcare responsibilities Hesitations caused by fear of receiving bad news Insurance issues Cost Miscommunication and not emphasizing needed eye care services by eye care provider Unaware and misinformation regarding the ocular problem
Neyhouser et al.[19]	2018	Cambodia	Qualitative study	N=108	To identify barriers affecting women's access to eye health in Cambodia	Visual problems are not severe enough unless they are experiencing pain Economic constraints Cost Waiting time in the eye care practice
Senjam et al.[20]	2016	India	Cross-sectional study	N=2,331	To estimate the prevalence of visual impairment (VI) due to uncorrected refractive error (URE) and to assess the barriers to utilizing eye care services among the adult urban population of Delhi	Felt no need the eye care services Unable to afford eye care services No available time for an eye examination
Thompson et al.[21]	2015	Africa	Cross-sectional study	N=338	To gain an understanding of the barriers to accessing refractive services perceived by the general population in Mozambique, Africa	Cost Felt no need the eye care services
Balarabe et al[22]	2014	Nigeria	Cross-sectional study	N=202	To determine the types of intervention sought by the blind street beggars and assess the barriers to accessing available eye care services	Eye care service is not available. Felt not need the eye care services
Maramula et al.[23]	2014	South India	Cross-sectional study	N=7,378	To assess the barriers to uptake of eye care services among those with avoidable impairment in the population aged ≥40 years in the South Indian State of Andhra Pradesh	Felt no need for the eye care services Cost No one to accompany in attending an eye care service Aware of the problem, but can self-managed

Table 1 Continued

Author (s)	Year	Study location	Study design	Study sample size	The aims of the study	Challenges in utilizing eye care services
Lee et al.[24]	2013	Timor-Leste	Cross-sectional study	N=2,014	To determine barriers to seeking eye care services in Timor-Leste	No time to attend the eye examination Fear of having an eye examination Can self-manage and accept the problem of having an ocular disorder
Brian et al.[25]	2012	Fiji	Cross-sectional study	N=1,381	To determine the use of medical services for eye problems in Fiji and barriers to seeking eye care	Accept or believe the ocular condition is still manageable No time to seek eye care services Believe nothing could be done to the condition of the ocular problem Fear
Adriono et al.[26]	2011	Indonesia	Cross-sectional study	N=196	To assess eye care use and its predictors among diabetic patients in Indonesia	Felt no need the eye care services Not knowing that the eye should examined regularly Cost of examination
Palagyi et al.[27]	2008	Timor-Leste	Cross-sectional study	N=1,414	To determine the utilization of Western-style conventional health services for eye problems in Timor-Leste and barriers to eye care	Unaware of eye care service Felt no need the eye care services No time and have other priorities

Thematic analysis of challenges in utilizing eye-care services

The result of the scoping review illuminates two critical themes for the challenges in accessing eye care services, which can be categorized into person-related and service-related barriers. Person-related barriers refer to obstacles individuals face that influence access to eye care services. The person-related barriers are personal characteristics, beliefs, or knowledge that may hinder them from utilizing eye care services. In contrast, service-related barriers are obstacles arising from the service's structure, organization, or eyecare delivery. Service-related barriers are external factors to the individual and may hinder access to or utilization of services. The service-related barrier refers to the availability, accessibility, and affordability of the services provided[23]. Table 2 shows ten thematic challenges identified from the 18 studies which are divided into six person-related barriers and five service-related barriers.

Six challenges are rooted in person-related barriers, contributing to difficulties in accessing eye care services. The highly reported challenge in this category was felt no need for eye care services. Approximately 72% (13 out of 18 studies) stated that lack of felt need the eye care services was the reason for not utilizing eye care services. The second highly reported challenge was time constraints at 50% (9 out of 18 studies), followed by 27% (5 out of 18) poor knowledge and awareness for regular eye check-ups. Other challenges, such as lack of companionship and knowledge and awareness of the ocular condition, accounted each of 22% (4 out of 18 studies). Lastly, 16% (3 out of 18 studies) cited fear as a challenge in person-related barriers.

Table 2 Thematical challenges in utilizing eye-care services

Challenges	Descriptions
Person-related barrier	
Felt no need the eye care services[14,16–27]	Unaware of the need for eye check-ups Lack of motivation and prioritization Absence of visual symptoms Visual problems are perceived as not serious unless accompanied by pain Can self-manage and accept the ocular condition Believe nothing could be done to the current ocular condition
Time constraints[10–12,14,17,18,20,24,25]	Hourly wage or fixed income results in difficulty adhering to the set appointment Unable to leave work responsibilities Not enough time to attend the eye check-up Household and childcare responsibilities Competing priorities
Lack of companionship[10,14,16,23]	No family to accompany Transportation issues
Poor knowledge and awareness of regular eye check-ups[11,18,21,26,27]	Miscommunication and not emphasizing needed eye care services Do not know if the eye should be examined regularly Unaware of eye care service
Poor knowledge and awareness of the ocular condition[12,13,16,18]	Unaware and misinformation regarding the ocular disorder
Fear[18,24,25]	Fear or hesitation in receiving bad news
Service-related barrier	
Cost[14,16,17,19–21,23,26]	Cost of an eye examination Insurance: afraid of unexpected bill
Waiting times[10,15,19]	Long waiting time in the clinic Waiting for appointment dates
Appointment availability[13,15,16]	Unable to choose appointment times, days, and locations and passively wait for appointment dates Difficulty scheduling an eye exam Lack of understanding of the healthcare system
Service availability[14,21,27]	Unsure where to go Unaware of eye care service

The financial aspects stand out as a primary challenge within service-related barriers. Urban dwellers are concerned about the cost of eye care services, accounting for 44% (8 out of the 18 studies). Other challenges, such as waiting times, appointments, and service availability, were equally prominent, each contributed approximately 16% of the review (3 out of 18 studies).

In addition, the weight of these two thematic challenges was analyzed. The disproportionate weight was demonstrated by numerous person-related barriers being more prevalent than service-related barriers among urban populations, as illustrated in Figure 2.

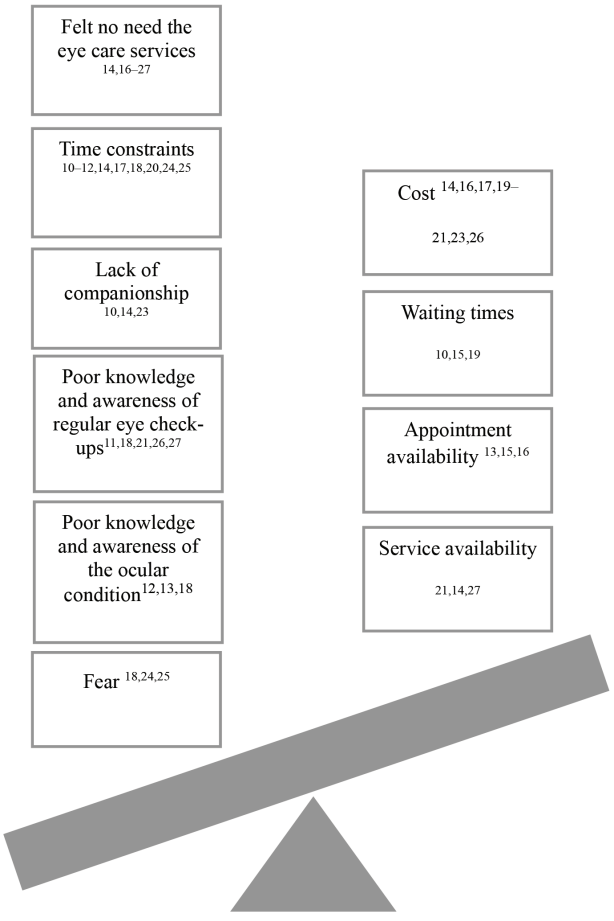

Figure 2 The imbalance between person- and service-related barriers

Discussion

This scoping review described the challenges associated with the utilization of eye care services among urban populations worldwide. The review identified 18 studies that delved into the challenges faced by urban populations.

Most studies reported the felt there is no need and cost factors that hinder the uptake of eye care services. The most frequently reported barrier was the perceived 'no need' for eye care services, mentioned in 13 out of 18 studies[14,16–27]. This situation happened because eye care-seeking behaviour has been shown to be vital in preventing and treating various eye conditions to enable individuals to maintain optimal vision and eye health. Despite the availability of eye care services and widespread knowledge and awareness of ocular conditions, many people still do not seek the necessary care. According to the Behavioral Risk Factor Surveillance System from 2006 to 2010, the main reason for not seeking eye care services was the feeling of "no need"[28]. For certain eye conditions, the perception of "no need" typically arises due to the absence of early signs or symptoms or the slow progression of symptoms. Even when symptoms were present, it was typically not considered as a problem until the individual could not perform visual tasks. It was also shown that when individuals with ocular conditions were still able to perform daily activities without significant discomfort, the perceived need for eye care services was still low[29]. These findings suggest that inadequate eye care-seeking behaviour is associated with a low uptake of eye care services. Hence, a better understanding and awareness of common eye disorders might improve the uptake of eye care services. In order to effectively address these issues, it is imperative to prioritize enhancing awareness and knowledge regarding ocular disorders to promote and encourage proactive eye care-seeking behaviour.

Time constraints were shown to be the significant person-related barriers among the urban population due to work commitments, childcare responsibilities, busy schedules, and competing priorities[10–12,14,17,18,20,24,25]. Work commitments become an important time constraint for individuals when seeking or scheduling appointments during regular working hours[10,11] This challenge may lead to postponements or even refusal to obtain eye care services. Besides that, individuals with household and childcare responsibilities, such as parents or guardians of children, often struggle to allocate time for eye check-ups due to the continuous demands of looking after their children and the routine tasks involved in childcare[17,18]. Therefore, prioritizing personal eye health becomes challenging for individuals with childcare responsibilities as they have other priorities. In addition, the perception of not having enough time to attend eye tests adds another layer to the issue of time constraints[14]. Individuals may feel overwhelmed by their busy schedules and competing priorities, further hindering them from prioritizing their eye health through eye check-ups.

The cost of eye care services is a well-established barrier and has been reported in most reviewed studies[14,16,17,19–21,23,26]. Individuals with insurance coverage exhibited better eye care-seeking behaviour than those without[30]. However, certain studies in this scoping review stated that individuals refrained from receiving eye care services due to the fear of unanticipated bill payments, even if they have insurance[14]. This hesitation was driven by concerns about potential unforeseen costs associated with eye care, although it is covered by insurance. The reluctance to seek eye care services because of financial worries highlights the need to address cost-related concerns. To address this issue, the country Scotland has implemented measures such as offering complimentary eye examinations or reducing the service cost[31]. Therefore, the cost barrier might be eliminated, making eye care services accessible for everyone and promoting overall eye health.

Apart from that, the uneven weight of the person and service-related barriers might be influenced by several factors. Primarily, the weightage of service-related barriers was less significant than person-related barriers. This may be due to the fact that eye care are widely available across urban areas, allowing individuals to choose their preferred practitioner. Thus, service availability generally should not be an issue. However, a lack of awareness about where and who the eye care service providers are probably the reasons as highlighted as a barrier in 3 out of 18 studies[14,21,27]. A study revealed that people are often unaware of the differences among eye care providers such as optometrists and ophthalmologists[32]. Uncertainty about the roles, qualifications, and services of various eye care professionals can lead to inappropriate care-seeking and underutilization of services, as individuals may be unclear about which provider is best suited for their specific eye health needs.

Secondly, the time constraints the urban population faces were mainly due to a higher proportion of urban individuals employed than individuals from rural areas[33]. The rigidity of fixed working hours poses a challenge for individuals to find a suitable time for eye check-ups. The work schedule limits flexibility, limiting the urban dwellers from prioritizing and allocating time for their eye health. A critical understanding of the awareness and importance of eye health among urban dwellers will enable them to prioritize their eye care, leading to improved overall well-being.

Long waiting times for eye check-ups pose a significant challenge, especially for employed urban populations[10,15,19]. This situation discourages urban dwellers from prioritizing eye check-ups, as they have competing priorities and find it challenging to allocate time for lengthy waiting times. A study indicated that the waiting time for health consultation in urban areas was longer compared to rural areas[34] due to the higher population density in urban regions. Besides, several reasons that contributed to prolonged wait times were identified, including unnecessarily lengthy registration time and inadequate staffing[35]. Arriving early from designated appointment times may also contribute to crowding in healthcare, leading to longer waiting times[35]. It was highlighted that those individuals who had scheduled appointments and arrived at the designated time experienced shorter waiting periods than those who arrived without prior appointments[36]. Therefore, implementing an effective scheduling system could reduce waiting times and eliminate this barrier for urban dwellers.

The thematic analysis showed that the weightage of challenges leans towards person-related barriers compared to service-related barriers. The findings are possibly due to the poor individual's knowledge and awareness of eye conditions. Generally, the survey on knowledge of common ocular problems in urban ranged from low to an average[37]. The most commonly known ocular problems among urban dwellers were eye redness (54.5%), refractive error (52.7%), cataract (59.5%), diabetic retinopathy (49.5%), glaucoma (43.1%), trachoma (41.8%), pterygium (39.9%) and age-related macular degeneration (33.6%)[37]. Meanwhile, the awareness of ocular problems among urban populations ranged from low to average. High ocular problems awareness was cataracts (69.8%), night blindness (60.0%), diabetic retinopathy (27.0%), and glaucoma (2.3%)[38]. Although many ocular disorders can be prevented or cured with early intervention, a lack of awareness and knowledge about avoidable vision impairment may result in a high prevalence of vision loss[39]. Understanding the ocular condition and being aware of its implications is essential in promoting the uptake of regular eye check-ups. Individuals with low to average knowledge of common eye conditions, such as eye redness, refractive errors, cataracts, and others, may not fully grasp the importance of preventive measures. Evidence suggests that increasing awareness and knowledge of common eye diseases leads to a better

understanding of the importance of routine eye examination for early detection and treatment, thereby reducing the incidence of visual impairment.

This review has limitations that should be considered. Firstly, only studies in English were included, potentially missing essential studies available in other languages. Secondly, the results are subject to limitations of a scoping review, including selection bias, date limitations, and database selection. Hence, the findings might not be generalizable. Although the search could have been more exhaustive, the challenges this review identified based on the 18 included studies can provide a quick and easy reference. Further research aims to refine the intervention for improving eye care utilization among urban populations.

Conclusion

The challenges for the urban population in utilizing eye care services have been comprehensively identified in this review. Our findings highlighted person-related and service-related barriers contributing to the underutilization of eye care globally in urban settings. The scoping review enlightens the specific challenges faced by the urban population, indicating the importance of promoting equity in healthcare delivery and enhancing overall public health services. Addressing these challenges is crucial to ensure that urban communities can benefit from optimal eye health. Implementing targeted strategies to overcome these barriers is essential. Eye care professionals, policymakers, and public health advocates must collaborate to provide timely and effective eye care services, thereby improving well-being and reducing avoidable visual impairment among the urban population.

Acknowledgement

Thank you to the Malaysian Ministry of Housing and Local Government for supporting this study. We would also like to thank all the volunteers who were involved in this study.

Funding sources

This study is funded by the Malaysian Ministry of Higher Education (Fundamental Research Grant Scheme: FRGS/1/2023/SKK04/UITM/02/2).

Conflict of interest

The authors declare no conflicts of interest.

References

1. Flaxman SR, Bourne RRA, Resnikoff S, Ackland P, Braithwaite T, Cicinelli MV, et al. Global causes of blindness and distance vision impairment 1990–2020: a systematic review and meta-analysis. Lancet Glob Health 2017;5:e1221-34. doi: 10.1016/S2214-109X(17)30393-5.
2. Wang L, Huang W, He M, Zheng Y, Huang S, Liu B, et al. Causes and five-year incidence of blindness and visual impairment in urban southern China: The Liwan Eye Study. Invest Ophthalmol Vis Sci 2013;54:4117-21. doi: 10.1167/iovs.13-11911.
3. Assi L, Rosman L, Chamseddine F, Ibrahim P, Sabbagh H, Congdon N, et al. Eye health and quality of life: An umbrella review protocol. BMJ Open 2020;10. doi: 10.1136/bmjopen-2020-037648.
4. Robin AL, Nirmalan PK, Krishnadas R, Scd JK, Tielsch J, Thulasiraj RD, et al. The utilization of eye care services by persons with glaucoma in rural south India. PubMed 2004;102:47-5 doi: 10.1136/2004.04.2606.
5. Keeffe JE, Weih LAM, McCarty CA, Taylor HR. Utilisation of eye care services by urban and rural Australians. Br J Ophthalmol 2002;86:24-7. doi: 10.1136/bjo.86.1.24.
6. Arksey H, O'Malley L. Scoping studies: Towards a methodological framework. Int J Soc Res 2005;8:19-32. doi: 10.1080/1364557032000119616.
7. Liberati A, Altman DG, Tetzlaff J, Mulrow C, Gøtzsche PC, Ioannidis JPA, et al. The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration. BMJ 2009;339. doi: 10.1136/bmj.b2700.
8. Mahmoud Z, Angelé-Halgand N, Churruca K, Ellis LA, Braithwaite J. The impact of lean management on frontline healthcare professionals: a scoping review of the literature. BMC Health Serv Res 2021;21. doi: 10.1186/s12913-021-06344-0.

9. Kumar RS, Bharti DA. Internet gaming disorder: a scoping review and future direction. J Health Sci Med Res 2023;41. doi: 10.31584/jhsmr.2022908.
10. Scanzera AC, Sherrod RM, Potharazu AV, Nguyen D, Beversluis C, Karnik NS, et al. Barriers and facilitators to ophthalmology visit adherence in an urban hospital setting. Transl Vis Sci Technol 2023;12. doi: 10.1167/tvst.12.10.11.
11. Pawar N, Ravindran M, Fathima A, Ramakrishnan K, Sithiq M, Paranjape M. Identification of potential barriers for timely access to pediatric sibling eye check-up in a tertiary eye care hospital. Indian J Ophthalmol 2023;71:215–21. doi: 10.4103/ijo.IJO_1739_22.
12. Owusu-Afriyie B, Gende T, Tapilas M, Zimbare N, Kewande J. Patients' perspective on barriers to utilization of a diabetic retinopathy screening service. Diabetol Int 2023;4:393–405. doi: 10.3390/diabetology4030033.
13. Nguyen M, Stamenova V, Onabajo N, Merritt R, Sutakovic O, Mossman K, et al. Perceptions of a teleophthalmology screening program for diabetic retinopathy in adults with type 1 and type 2 diabetes in urban primary care settings. Can J Diabetes 2022;46:649–54. doi: 10.1016/j.jcjd.2022.03.001.
14. Goyal A, Richards C, Patel V, Syeda S, Guest JM, Freedman RL, et al. The vision detroit project: visual burden, barriers, and access to eye care in an urban setting. Ophthalmic Epidemiol 2022;29:13–24. doi: 10.1080/09286586.2021.1884264.
15. Ford BK, Angell B, White AJR, Duong A, Hiidome S, Keay L. Experiences of patients with diabetes attending a publicly funded eye care pathway in western sydney: a qualitative study. J Patient Exp 2021;8. doi: 10.1177/23743735211049652.
16. Ramchandran RS, Yilmaz S, Greaux E, Dozier A. Patient perceived value of teleophthalmology in an urban, low income US population with diabetes. PLoS One 2020;15. doi: 10.1371/journal.pone.0225300.
17. Amritanand A, Paul P, Nagarajan SG, Doss PA, Yovan P, John S. Accuracy of trained community-based rehabilitation volunteers in identification and appropriate referral of adults with perceived visual disability in an urban-slum setting in Southern India. Ophthalmic Epidemiol 2020;27:344–53. doi: 10.1080/09286586.2020.1755443.
18. Fairless E, Nwanyanwu K. Barriers to and facilitators of diabetic retinopathy screening utilization in a high-risk population. J Racial Ethn Health Disparities 2019;6:1244–9. doi: 10.1007/s40615-019-00627-3.
19. Neyhouser C, Quinn I, Hillgrove T, Chan R, Chhea C, Peou S, et al. A qualitative study on gender barriers to eye care access in Cambodia. BMC Ophthalmol 2018;18. doi: 10.1186/s12886-018-0890-3.
20. Senjam SS, Vashist P, Gupta N, Malhotra S, Misra V, Bhardwaj A, et al. Prevalence of visual impairment due to uncorrected refractive error: results from delhi-rapid assessment of visual impairment study. Indian J Ophthalmol 2016;64:387–90. doi: 10.4103/0301-4738.185614.
21. Thompson S, Naidoo K, Gonzalez-Alvarez C, Harris G, Chinanayi F, Loughman J. Barriers to use of refractive services in mozambique. Optom Vis Sci 2015;92:59–69. doi: 10.1097/OPX.0000000000000431.
22. Balarabe AH, Hassan R, Fatai OO. Eye health seeking habits and barriers to accessing curative services among blind beggars in an urban community in Northern Nigeria. Ann Afr Med 2014;13:184–8. doi: 10.4103/1596-3519.142289.
23. Marmamula S, Khanna RC, Shekhar K, Rao GN. A population-based cross-sectional study of barriers to uptake of eye care services in South India: the rapid assessment of visual impairment (RAVI) project. BMJ Open 2014;4. doi: 10.1136/bmjopen-2014-005125.
24. Lee L, Ramke J, Blignault I, Casson RJ. Changing barriers to use of eye care services in Timor-Leste: 2005 to 2010. Ophthalmic Epidemiol 2013;20:45–51. doi: 10.3109/09286586.2012.742551.
25. Brian G, Maher L, Ramke J, Palagyi A. Eye care in fiji: a population-based study of use and barriers. Ophthalmic Epidemiol 2012;19:43–51. doi: 10.3109/09286586.2011.628135.
26. Adriono G, Wang D, Octavianus C, Congdon N. Use of eye care services among diabetic patients in urban Indonesia. AMA Arch Ophthalmol 2011;129:930–5. doi: 10.1001/archophthalmol.2011.147.
27. Palagyi A, Ramke J, Du Toit R, Brian G. Eye care in Timor-Leste: a population-based study of utilization and barriers. Clin Exp Ophthalmol 2008;36:47–53. doi: 10.1111/j.1442-9071.2007.01645.x.
28. Elam AR, Tseng VL, Rodriguez TM, Mike EV, Warren AK, Coleman AL, et al. Disparities in vision health and eye care. Ophthalmol 2022;129:e89–113. doi: 10.1016/j.ophtha.2022.07.010.
29. Akowuah PK. Barriers to utilization of eye care services in the Upper East Region, Ghana. Adv Ophthalmol Vis Syst 2017;7. doi: 10.15406/aovs.2017.07.00240.

30. Gnawali DP, Pokhrel S, Sié A, Sanon M, Allegri MDE, Souares A, et al. The effect of community-based health insurance on the utilization of modern health care services: Evidence from Burkina Faso. Health Policy 2009;90:214-22. doi: 10.1016/j.healthpol.2008.09.015.
31. Dickey H, Ikenwilo D, Norwood P, Watson V, Zangelidis A. Utilisation of eye-care services: the effect of scotland's free eye examination policy. Health Policy 2012;108:286-93. doi: 10.1016/j.healthpol.2012.09.006.
32. Eze B, Aguwa E, Obiekwe O. Public's knowledge of the differences between ophthalmologists and optometrists: a critical issue in eye care service utilisation. Int J Ophthalmol 2016. doi: 10.18240/ijo.2016.09.18.
33. Lu N, Samuels ME, Kletke PR, Whitler ET. Rural-urban differences in health insurance coverage and patterns among working-age adults in Kentucky. J Rural Health 2010;26:129-38. doi: 10.1111/j.1748-0361.2010.00274.x.
34. García-Corchero JD, Jiménez-Rubio D. Waiting times in healthcare: equal treatment for equal need? Int J Equity Health 2022;21. doi: 10.1186/s12939-022-01799-x.
35. Ariffin F, Baihaqi Azraii A, Nainey Kamaruddin K. An assessment of patient waiting and consultation time in a primary healthcare clinic. Malays Fam Physician 2017;12:14-21.
36. Su S, Shih CL. Managing a mixed-registration-type appointment system in outpatient clinics. Int J Med Inform 2003;70:31-40. doi: 10.1016/S1386-5056(03)00008-X.
37. Zhao M, Gillani AH, Islam FMA, Ji W, Hayat K, Li Z, et al. Factors associated with knowledge, attitude and practices of common eye diseases in general population: a multicenter cross-sectional study from Pakistan. Int J Environ Res Public Health 2019;16. doi: 10.3390/ijerph16091568.
38. Dandona R, Dandona L, John RK, Mccarty CA, Rao GN. Awareness of eye diseases in an urban population in southern India. Bull World Health Organ 2001;79:96-102.
39. Hubley J, Gilbert C. Eye health promotion and the prevention of blindness in developing countries: critical issues. Br J Opthalmol 2006;90:279-284. doi: 10.1136/bjo.2005.078451.