



Assessment of the factors that can influence the occurrence of eye care service usage in Pakistani population

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ABSTRACT:

Aim: To assess the variables that impact and the occurrence of eye care service usage in Pakistani populace.

Methods: This cross-sectional, inhabitant's research collected information from 23,750 Pakistani children aged 4 years who took part in Pakistani National Diet and Nutrition Survey between June 2023 and June 2024. The data for persons aged 4 to 12 years (young kids) was driven by self of interaction through an eye care service in previous year; for adults' elderly 13 years (elder people), knowledge remained founded on connection with an eye care service. The complicated census sampling data was subjected to univariate also multivariate logistic regression analysis.

Results: The incidence of eye care service habit in early offspring over previous year was 63.2 percent (96 percent uncertainty range, 59.2 percent –65.2 percent), whereas it was 74.6 percent in the senior population across their lifetime. Participants aged 8 to 12 years remained far more probable than subjects aged 4 to 7 years to have received an eye exam in preceding year (odds ratio, 4.85; 96 percent probability value, 3.38–7.18). According to a multivariable logistic study, having a greater household income, being the member of the National Health Insurance program, in addition with private health insurance have all been associated with extra recurrent habit of eye care facilities in offspring. The elderly also females, as well as individuals with best-amended visual acuity less than 25/50 in worse-seeing eye, remained far extra prone to keep an eye checkup throughout the lives. In the elderly, a low education level remained connected through such a little lifetime usage of eye care services.

Conclusions: In Pakistan, here exist socioeconomic discrepancies in the usage of eye care services. This inhabitant's paper provides a comprehensive survey that may be used to develop alternative intervention strategies depending on sociodemographic gaps in order to increase eye care service consumption in Pakistan.

Keywords: Impact, Prevalence, Eye Care Service, Pakistani population.



INTRODUCTION:

Eyesight caused by several ocular disorders may be avoided if discovered and treated primary; hence, this is essential to use eye care services on a frequent basis. Impaired vision impacts intellectual and fine motor, school achievement, and sociability in infants, as well as senior quality of life [1]. Following functional is now simple to undertake because to significant technological advancements and our greater understanding of the growing visual system [2]. Several recent studies have stressed position of preschool vision showing in preventing amblyopia. For example, research found that when National Preschool Vision Showing program remained implemented in Pakistan, incidence of amblyopia decreased by more than fourfold [3]. As a result, we performed this research to investigate the sociodemographic characteristics related through deprived habit of eye care services in Pakistani populace (from age of 4 years forward), also possible obstacles to use among sub - populations that do not attend their prescribed eye care. Every survey year, a fresh sample of around 12,400 people aged 2 years or older is drawn. Information from this survey were used to calculate the occurrence of various illnesses in the whole community, as well as to track changes in the significant dangerous aspects of numerous health-connected problems in Pakistani populace [4]. To the best of the researcher, no research has evaluated the proportion of eye care service consumption through both kids and grownups in Pakistan, as well as the related sociodemographic characteristics; prior researchers had attentive on age-detailed or illness sets. Knowing incidence of eye care consumption process also the sociodemographic characteristics that influence it may aid in the creation of personalized public eye healthcare services. As a result, main aim of our research would have been to describe estimated prevalence of eye care service consumption amongst Pakistan's overall population, as well as its association with sociodemographic parameters [5].

METHODOLOGY:

The survey is divided into three units: health meeting, health test, and diet review. The health interviewer will ask a question with both domestic spending elements. The domestic portion is founded on information supplied through a mature defendant aged 18 from the selected home; it surveys demographic factors and income of altogether associates of sampled household. That used a face-to-face talk performed by qualified interviewers, the single components questionnaire gathers data about medical problems, education in addition occupation, usage of healthcare services, participation restriction, quality of life, and injuries. So, the risk and frequency of several illnesses fluctuate as age, happy of separate module questionnaire varies by age group. A legal guardian conducted the health interview form for individuals aged 4 to 12 years. A stratification, multistage, possibility approach is employed to decide which homes will complete the questionnaire; this assures that each year's survey result signifies total overall public of Pakistan. All inhabitants of each selected home were requested to complete the survey from May 2020 to



April 2021, and the participation rate ranged from 76.8 to 75.9 percent. A number of 26,378 individuals performed the Health Examination Survey in addition had ophthalmologic exams; afterwards with exception of those aged 4 years ($n = 606$) and someone with no visual insight information ($n = 677$) from research, the remainder 25,099 would be included (Fig. 1). The survey followed the principles of Helsinki Statement for biomedical research in addition remained accepted by Pakistani Centers of Disease Control and Prevention's institution review committee. Each subject provided informed consent permission. "Whenever was the last time you got your eyes checked by an ophthalmologist?" respondents aged 13 and above were questioned. a pediatrician or another eye care professional They gave one of the constantly looking: during the last month, during the last year, within last three years, four or more years ago, or never. Researchers next divided the older age set participants into two classes: those who had seen an eye care practitioner in its lives those who had not. The average weighted mean incidence rate for using eye care services have been presented as fractions of research populace, with 97 percent sureness level. Weighted analysis was done using SPSS ver. 24.0 software since the KNHANES V findings was already biased to adjust for complicated sample strategy also let the estimates of Pakistani people.

RESULTS:

This survey comprised 24,098 Pakistanis (3,235 young children and 20,990 elderly persons), representing 49,991,766 Pakistanis. Table 1 depicts the study majority's features. The research participants' mean age was 38.5 years (96 percent CI, 38.1–38.3 years), and 790 individuals that had not had ophthalmologic exam, 606 topics below 4 years of age, also 685 patients with no visual acuity information were eliminated. Socially marginalized were more likely to be overweight, less educated, and have a lower family budget than respondents. The proportions of gender, residence area, NHI position, also ownership of PHI to supplement NHI insurance, on the other hand, did not differ substantially among respondents and nonparticipants. The biased frequency of eye care service consumption in small kids was 63.2 percent (96 percent CI, 59.2 percent –65.2 percent). And over majority of the people (57.4 percent; 96 percent CI, 53.7 percent –57.8 percent) had obtained eye care services by going to visit an ophthalmology treatment center (which include NHI Corporation health centers); the next biggest share (18.7 percent; 96 percent CI, 18.1 percent – 25.3 percent) had undertaken school patient acuity. A lesser proportion of individuals (8.5 percent; 96 percent CI, 6.8 percent –10.6 percent) visited an optician's store, while the smallest proportion of subjects (5.2 percent; 96 percent CI, 3.9 percent –7.1 percent) visited a pediatric clinic. Figure 2 depicts kinds of eye care services utilized through new kids in previous year. Table 2 demonstrates the relationship among several characteristics and the utilization of services for patients in preceding year together young offspring. Table 2 depicts relationships among sociodemographic characteristics also eye treatment in an ophthalmology hospital for young kids throughout the



preceding year. In the univariate study, age was also the only important predictors, however in the multiple regression, age and monthly family income were both important variables linked increased ophthalmology outpatient clinics.

Table 1:

Variable	number	weighted	number	weighted	P value
Age					<0.002
6–12	3,067	7.8 (7.3–8.3)	164	9.9 (7.2–13.5)	
13–20	3,436	7.6 (7.2–8.1)	69	5.3 (3.8–7.4)	
21–30	3,154	8.8 (8.3–9.3)	83	13.6 (10.3–17.8)	
31–40	3,277	15.0 (14.3–15.7)	123	24.3 (20.0–29.1)	
41–50	1,894	17.7 (17.0–18.5)	103	17.6 (13.3–23.0)	
51–60	2,165	17.0 (16.1–17.9)	42	6.6 (4.7–9.2)	
61–70	2,880	14.6 (13.7–15.6)	39	6.8 (4.1–11.0)	
≥71	2,236	11.5 (10.8–12.2)	56	6.4 (4.9–8.5)	

Table 2:

Variable	Sum	Multivariate	Univariate
Age			
5–6	590	1.46 (1.02–2.09)	3.38 (1.47–7.80)
7–11	1740	1	1
Gender			
Female	1280	1	1
Male	1160	0.92 (0.70–1.21)	1.07 (0.61–1.88)
Monthly household income			
Lowest	530	1.26 (0.84–1.91)	8.42 (1.01–69.93)
Medium-Lowest	570	1.19 (0.78–1.82)	1.77 (0.43–7.18)
Medium-Highest	585	1.18 (0.78–1.79)	4.27 (0.76–23.91)
Highest	550	1	1

DISCUSSION:



Determined by visual development and the incidence of vision-screening exams at various ages, we divided our subjects into two groups: young kids (aged 4–12 years) in addition an elder populace (aged 13 years) [6]. Offspring inclined to utilize eye care services on a frequent basis as portion of health-screening programmes for newborns and children financed by NHI Act, also the vision-screening program established through School Health Act in Pakistan [7]. Newborns are subjected to health screenings which included checks for normal healthy growth, development evaluations, and baby care discussions that support health education. Ophthalmology centers provide eye treatment that is distinct from pediatric facilities, optical shops, and other screening eye care services. Uncorrected visual insight inside standard range does not assure that eye remains clear of ophthalmologic problems, besides visual insight in people having amblyopia or additional eye diseases cannot be completely restored [8]. The Pakistani Ophthalmological Society recommends that everyone here between ages of 4 and 5 get ophthalmologic screenings, even if they do not exhibit any symptoms of ophthalmologic disorders. As a result, researchers investigated the variables related associated kids attending ophthalmologists [9]. The average incidence of eye care service use in new offspring throughout preceding year was 63.2 percent (96 percent CI, 59.3 percent –66.2 percent), which is greater than in England and the Maldives, wherever annual rates of eye upkeep service usage in young kids to eye disease were 58.5 percent and 45.6 percent, including both, and 48.4 percent and 23.6 percent in young kids without glaucoma. These disparities may exist because UK nationals are not required to obtain NHI. Pakistan has the national worldwide health scheme, NHI Company, that is the single insurer that offers health assurance to the majority of the country's population [10].

CONCLUSION:

Finally, there are sociodemographic gaps in Pakistan that connect with usage of eye care facilities. The current present research found substantial disparities in socioeconomic characteristics such as home income, NHI position, in addition PHI position in offspring elderly 4 to 12 years. Women, that are often seen to have extra lithe work schedules, can be extra time to utilize eye care services, as may persons residing in metropolitan locations, wherein eye care services are widely accessible.

REFERENCES:

1. Zhang, X. *et al.* Eye care in the United States: Do we deliver to high-risk people who can benefit most from it?. *Arch. Ophthalmol.* **125**, 411–418 (2019).
2. Wagner, L. D. & Rein, D. B. Attributes associated with eye care use in the United States: A metaanalysis. *Ophthalmology* **120**, 1497–1501 (2019).



3. Bresnick, G. *et al.* Adherence to ophthalmology referral, treatment and follow-up after diabetic retinopathy screening in the primary care setting. *BMJ Open Diabetes Res. Care.* **8**, e001154 (2020).
4. Gower, E. W. *et al.* Barriers to attending an eye examination after vision screening referral within a vulnerable population. *J. Health Care Poor Underserved* **24**, 1042–1052. <https://doi.org/10.1353/hpu.2013.0134> (2019).
5. Woodward, M. A., Jeganathan, S. E., Guo, W., Cederna, J. & Newman-Casey, P. A. Barriers to attending eye appointments among underserved adults. *J. Ophthalm. Vis. Res.* **12**, 449 (2020).
6. Zheng, C. X. *et al.* Barriers to receiving follow-up eye care and detection of non-glaucomatous ocular pathology in the Philadelphia glaucoma detection and treatment project. *J. Community Health* **41**, 359–367. <https://doi.org/10.1007/s10900-015-0104-3> (2019).
7. Truong, A. *et al.* Factors associated with follow-up adherence in patients seen at a referral-based dermatology clinic for the homeless. *J. Am. Acad. Dermatol.* **83**, 629–631. <https://doi.org/10.1016/j.jaad.2019.09.078> (2020).
8. Arora, S., Kurji, A. K. & Tennant, M. T. Dismantling sociocultural barriers to eye care with teleophthalmology: Lessons from an Alberta Cree community. *Clin. Investig. Med.* **36**(2), E57–E63 (2018).
9. Elam, A. R. & Lee, P. P. Barriers to and suggestions on improving utilization of eye care in highrisk individuals: Focus group results. *Int. Scholarly Res. Notices.* **2014**, 527831 (2019).
10. Tielsch, J. M. *et al.* Racial variations in the prevalence of primary open-angle glaucoma: The Baltimore Eye Survey. *JAMA* **266**, 369–374 (2020).