

# Access to Disability-related Healthcare among People with Visual Disability in India: Evidence from a National Sample Survey

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## Abstract

**Background:** Despite progress, there are still gaps and inequalities in achieving universal health coverage (UHC), particularly among marginalized populations such as people with visual disability (VD). This study aimed to evaluate access to disability-related healthcare among people with VD in India. **Methods:** Data from the Survey of Persons with Disabilities in India, the 76<sup>th</sup> round of the National Sample Survey (NSS), which was conducted between July 2018 and December 2018, were used in this study. Binomial logistic regression was used to find the association between access to disability-related healthcare and sociodemographic characteristics. **Results:** The prevalence of VD in the general population was 0.23%. About 15% of people with VD did not have access to healthcare for disability. Access was lower in the older age group (Adjusted Odds Ratio (AOR) = 0.68) than in the younger age group, females (AOR = 0.89), persons with low literacy (AOR = 0.72), low consumption expenditure (AOR = 0.60), and people belonging to the scheduled tribes (STs) (AOR = 0.57). Affordability was the leading reason for poor accessibility. About 55% of people with VD had zero out-of-pocket expenditure (OOPE), 35.8% had monthly OOPE below INR 1000, and 1.3% had monthly OOPE INR >5000. **Conclusion:** The study found gaps in access to healthcare in people with VD in India. This population is falling behind in the core elements of UHC, i.e. affordability and inequality. India should adopt a comprehensive strategy that includes age-specific interventions, improved rural access, measures for socioeconomic equity, gender sensitivity, and expanded public health insurance coverage and social security schemes for people with VD.

**Keywords:** Blindness, health services for persons with disabilities, universal health coverage, vision disorders, visually impaired persons

## INTRODUCTION

Nations reiterated their strong political commitment to achieving universal health coverage (UHC) during the 2019 United Nations General Assembly High-Level Meeting on UHC.<sup>[1]</sup> Although significant progress has been made toward achieving UHC, inequalities remain a major challenge to achieving it.<sup>[2]</sup> India has also made significant progress in achieving the provisions of UHC.<sup>[3]</sup> Despite progress, there are still gaps and inequalities in access to healthcare, particularly among marginalized populations such as people with disabilities.<sup>[2,3]</sup>

The population of people with disability represents approximately one billion people, which is equivalent to around one out of every seven people worldwide.<sup>[4]</sup> In India, around 60 million people live with a disability, 12% of them with a visual disability (VD).<sup>[5]</sup> People with disability have a greater need

for healthcare.<sup>[6]</sup> In addition to general healthcare, they often require disability-specific healthcare, such as rehabilitation and assistive technology. Disability-specific treatment, access to assistive devices, and rehabilitation services were included in disability-related healthcare.<sup>[7]</sup> A World Health Organization (WHO) report showed that people with VD had a greater unmet need for disability-related healthcare due to poor accessibility, availability, and acceptability of services.<sup>[8]</sup> These can be further aggravated by rural residence, older age, female, low socioeconomic status, etc.<sup>[8]</sup>

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People with VD also face greater healthcare expenses, as they require more frequent healthcare visits and incur indirect costs associated with these visits (such as the need to have a person accompany them and accessible transportation).<sup>[8]</sup> However, their ability to pay for these expenses is likely limited due to their lower financial independence.<sup>[8]</sup>

By evaluating these existing gaps and barriers, policymakers can create targeted strategies to increase accessibility, affordability, and quality of healthcare services for this vulnerable population. Therefore, this study aimed to assess access to disability-related healthcare among people with VD in India. The study also aimed to find out the prevalence of VD in India.

## MATERIAL AND METHODS

The study used data obtained from the National Statistical Office (NSO), which was previously known as the National Sample Survey Organization. It was started by the Ministry of Statistics and Implementation in 1950. The purpose of this organization is to conduct periodic surveys to provide essential statistical data on various subjects, including household socioeconomic status, demography, health, disability, industries, agriculture, etc.<sup>[9]</sup>

The specific NSO data set used in this study was the Survey of Persons with Disabilities in India, National Sample Survey (NSS) 76<sup>th</sup> round, which was administered between July 2018 and December 2018.<sup>[7]</sup> Data were collected in a stratified two-stage sampling design, with 5378 rural and 3614 urban first-stage units (FSUs). A rural village and urban frame survey (UFS) was divided into several subunits (SUs). FSUs were villages/UFS blocks/SUs according to the situation. The second-stage units were households (HHs) in both rural and urban areas. The survey included 81004 rural HH and 37147 urban HH. The survey sample included a total of 576569 individuals, 402589 from rural areas, and 173980 from urban areas.<sup>[7]</sup>

In the national survey, data were collected through face-to-face interviews using a structured questionnaire on disability and disability-related healthcare—accessibility, out-of-pocket expenditure (OOPE), aid/appliances, social security provisions, etc., (Schedule 26).<sup>[7]</sup> We limit our analysis to VD.

**Visual disability (VD):** A person with any of the following conditions was considered a person with VD<sup>[7]</sup>:

- I. No perception of light (PL) with or without the help of spectacles;
- II. Has PL but has blurred vision even after using spectacles, contact lenses, etc., Such persons can move independently with the help of remaining vision;
- III. Has PL but cannot see properly to move around independently; and
- IV. Has blurred vision but had no occasion to test if her/his eyesight would improve after taking corrective measures.

In cases II, III, and IV, if a person was unable to count fingers at a 10-foot distance, then it was taken as a person with VD.

Further, VD was categorized as follows: a) blindness—No PL, PL present but unable to count fingers at 3 feet distance; b) low vision—PL present, but unable to count fingers up to a distance of 3–10 feet. Presenting visual acuity was measured for all cases. A person with one eye and not with any of the above-mentioned specific conditions was not considered a person with a VD.<sup>[7]</sup>

**Aid/Applications:** High-powered glasses, contact lenses, and canes (smart and regular) were considered aids/appliances.<sup>[7]</sup>

**OOPE on disability-related healthcare:** It was recorded in the following heads: Infrequent medical expenditure during the last 365 days (A), Infrequent non-medical expenditure during the last 365 days (B), Usual monthly medical expenditure (C), Usual monthly non-medical expenditure (D).

Medical expenditures included doctor's fees, medicines, diagnostic tests, bed charges, attendant charges, equipment/appliances cost, caregiver, etc., whereas non-medical expenditures included transport, registration fees, food, lodging charges, and other incidental charges incurred for treatment.

Average monthly OOPE:  $A/12 + B/12 + C + D$

Catastrophic health expenditure 10% (CHE 10): When a household's OOPE incurred on disability-related healthcare in the previous year exceeds 10% of their total annual consumption expenditure, it was considered as an instance of CHE-10%.

Monthly per capita consumption expenditure (MPCE): The monthly consumer expenditure of a household refers to the aggregate monetary value of all goods and services that are regularly consumed within the domestic sphere.

## Statistical analysis

Data were analyzed using IBM SPSS Statistics, version 20.0. Armonk, NY: IBM Corp. Categorical variables were presented as proportions. Continuous variables were presented as mean (SD) and median (interquartile range). Survey weights provided by the NSO were used to calculate the proportions. The weights were Second Stage Stratum (SSS) wise and binomial logistic regression was used to find the association between VD and sociodemographic characteristics. Mann Whitney U test was used to find the difference in median OOPE between VD only and VD with other disability. *P* value < 0.05 was considered significant for all calculations.

## RESULTS

### Prevalence of VD by sociodemographic characteristics

The prevalence of VD was 0.23%. Among the general population, 0.14% had blindness and 0.09% had low vision. The prevalence was higher in rural than urban areas (Adjusted Odds Ratio (AOR) = 1.01). The prevalence of VD increased with age. It was higher in the elderly (AOR = 42.22), middle age group (AOR = 18.18), adolescents (AOR = 4.05), 6–9 years of age children (AOR = 2.58) than in children under five years of age. The prevalence of VD was higher among women and transgenders than men. The prevalence of VD decreased with

increases in educational level, i.e., primary (AOR = 0.52), secondary (AOR = 0.36), graduation, and above (AOR = 0.26). The prevalence was almost similar in the first four MPCE quintiles, but it was lower in the richest category (AOR=0.84). It was higher in the population of the scheduled tribe (ST) than in others (AOR = 1.09). It was less in married (AOR = 0.49) than in divorced/separated persons [Table 1].

Table 2 shows details of VD. About 45% of cases of VD were due to diseases and 7.8% were due to injury. The most common place of injury was home (38.1%) followed by workplace (24.7%) and roads (21.9%). Among people with VD, 62.2% had blindness and 37.8% had low vision. Approximately, one-fifth of those with VD had VD since birth. Almost half of the people acquired it after the age of 50 years.

### Access to disability-related healthcare

Table 3 shows access to disability-related healthcare among people with VD. About 15% of people with VD did not

have access to healthcare for disability. The reasons were affordability (7%), availability (1.5%), and perceived need (5%). About half of people with VD were advised of aid/appliances. Among those, about three-fourths had access to these aids/appliances. Affordability (20.5%) and availability (3.9%) were the main reasons for not having access to these aids/appliances. A majority (75.9%) of people with VD did not get any direct support from the government or any other organization for their disability-related healthcare. Table 4 shows that access to treatment was lower in the older age group (AOR = 0.68) than in the younger age group, females (AOR = 0.89), persons with low literacy (AOR = 0.72), low consumption expenditure (AOR = 0.60), and people belonging to the STs (AOR = 0.57). Similarly, access to aid/applications was lower in people with low literacy (AOR=0.54), low consumption expenditure (AOR=0.33), and people belonging to marginalized communities such as the ST (AOR = 0.61), scheduled caste (SC) (AOR=0.59), and other backward caste (AOR=0.78).

**Table 1: Prevalence of visual disability (VD) by sociodemographic characteristics**

Variable	Category	Total (n=576569)	VD Yes (n=11967)	Weighted prevalence (%) (0.23)	AOR (95% CI)	P
Sector	Rural	402589	8804 (2.2)	0.27	1.01 (0.97-1.06)	0.634
	Urban	173980	3163 (1.8)	0.18	1	
Age	Under 5	46645	182 (0.4)	0.04	1	
	6–9 years	39332	289 (0.7)	0.06	2.58 (2.13-3.12)	<0.01*
	10–19 years	110160	999 (0.9)	0.09	4.05 (3.44-4.76)	<0.01*
	20–45 years	229293	2483 (1.1)	0.11	8.07 (6.88-9.46)	<0.01*
	46–60 years	84566	2449 (2.9)	0.34	18.18 (15.38-21.48)	<0.01*
	≥61 years	66573	5565 (8.4)	1.53	42.22 (35.75-49.86)	<0.01*
Gender	Male	295545	6009 (2.0)	0.23	1	
	Female	280925	5953 (2.1)	0.24	0.74 (0.72-0.77)	<0.01*
	Transgender	99	5 (5.1)	0.36	1.36 (0.53-3.50)	0.515
Education	Not literate	179698	7155 (4.0)	0.55	1	
	Literate below primary	91778	1375 (1.5)	0.15	0.61 (0.58-0.65)	<0.01*
	Primary	74737	1104 (1.5)	0.16	0.52 (0.48-0.55)	<0.01*
	Middle	79640	967 (1.2)	0.13	0.45 (0.42-0.49)	<0.01*
	Secondary	66166	672 (1.0)	0.10	0.36 (0.33-0.39)	<0.01*
	Senior Secondary	46992	387 (0.8)	0.07	0.29 (0.27-0.33)	<0.01*
	Graduation and above	37557	307 (0.8)	0.06	0.26 (0.23-0.29)	<0.01*
Religion	Hindu	445535	9471 (2.1)	0.24	1	
	Muslim	88508	1599 (1.8)	0.20	1.04 (0.99-1.11)	0.139
	Others	42526	897 (2.1)	0.22	1.03 (0.96-1.11)	0.391
MPCE	Poorest	115318	2236 (1.9)	0.25	1	
	Poor	115302	2384 (2.1)	0.26	0.97 (0.92-1.03)	0.380
	Middle	119121	2580 (2.2)	0.26	0.95 (0.89-1.01)	0.105
	Rich	115519	2401 (2.2)	0.23	0.91 (0.85-0.97)	0.002
	Richest	115309	2366 (2.1)	0.18	0.84 (0.79-0.90)	<0.01*
Social group	Schedule tribe	66462	1491 (2.2)	0.23	1.09 (1.01-1.17)	0.015
	Schedule caste	108498	2407 (2.2)	0.27	1.05 (0.99-1.10)	0.145
	Other backward castes	251606	5199 (2.1)	0.24	1.04 (0.99-1.09)	0.103
	Others	150003	2879 (1.9)	0.21	1	
Marital Status	Never married	254957	2718 (1.1)	0.10	1.19 (0.96-1.48)	0.098
	Married	280811	5538 (2.0)	0.22	0.49 (0.39-0.60)	<0.01
	Widowed	37835	3611 (9.5)	0.43	1.04 (0.85-1.29)	0.648
	Divorced/Separated	2966	100 (3.4)	0.66	1	

AOR - Adjusted Odds Ratio, \*Statistically significant, MPCE - Monthly per capita consumption expenditure

Table 5 shows OOPes incurred on disability-related healthcare. The mean (SD) monthly OOPe was INR 472.42 (1673.18). The median OOPe was higher among VD with other disability than VD only. About 55% of people with VD had zero OOPe, 35.8% had OOPe below INR 1000, and 1.3% had monthly OOPe INR > 5000, which was lesser among people with VD only (0.9%) than VD with other disability (3.8%). CHE was present in only three persons.

## DISCUSSION

The study highlighted the prevalence of VD and access, availability, and financial hardship for disability-related healthcare among people with VD.

**Table 2: Details of visual disability among people with VD**

	Number (n)	%
Cause of disability (n=11967)		
Disease	5579	46.6
Burn	62	0.5
Injury other than burn	872	7.3
Others	5454	45.6
Place of injury (n=934)		
Road	201	21.5
Workplace	227	24.3
Home	350	37.5
Other places	140	14.9
Since Birth	16	1.7
Category of disability (n=11967)		
Blindness	7443	62.2 (Weighted Prevalence-0.14%)
Low vision	4524	37.8 (Weighted Prevalence-0.09%)
Age of onset (n=11967)		
Since birth	2466	20.6
From birth to 15 years	1154	9.6
16–50 years	2817	23.5
≥51 years	5480	45.8
Not known	50	0.4

## Prevalence of VD

The prevalence of VD, blindness, and low vision in India was found to be 0.23%, 0.14%, and 0.09%, respectively. The prevalence of VD among the children <19 years of age group was found in a range from 0.04 to 0.09%, which was comparable to the findings of a study by Kemmanu *et al.*<sup>[10]</sup> In the elderly, the prevalence of VD was found to be 1.53%. Ehrlich *et al.*<sup>[11]</sup> and Vashist *et al.*<sup>[12]</sup> reported a 2.14% and 1.99% prevalence of blindness among persons >50 years of age, respectively. Vashist *et al.*<sup>[13]</sup> also reported a 0.05% prevalence of blindness among the 0–49 age group in India. Based on these proportions, the prevalence of blindness in India was estimated to be 0.3%,<sup>[12]</sup> which was higher than our findings, i.e., 0.14%. This disparity may be due to different criteria used to define blindness, low vision, and VD. Though the survey adopted the definition of VD from the Rights of Persons with Disabilities Act, 2016, the assessment of VD was done differently than the Act (RPwD 2016).<sup>[7]</sup> These findings highlight the urgent need to address the growing burden of VD among older adults in India. The prevalence was higher in rural areas, which was consistent with the findings of other studies.<sup>[11,12]</sup> Similarly, females, less education, marginalized communities, and less consumption expenditure were also associated with a higher prevalence of VD, which was similar to findings from other studies.<sup>[11,12]</sup> The greater incidence of blindness in individuals belonging to these groups can potentially be attributed to the inequality observed in their ability to obtain the necessary eye care services for prevention and treatment.

This study also showed disparities in the utilization of eye care services between different populations, contributing to variations in the prevalence of VD.

## Accessibility

About 85% of people with VD had access to eye treatment-related services, and 70% had access to suggested aids/appliances. Similarly, Banks LM *et al.*<sup>[6]</sup> also found 27% of unmet needs for treatment or services in people with VD in the Maldives.

**Table 3: Access to disability-related healthcare among people with visual disability**

Variable	Category	Category	Number (n)	%
Access to treatment/advice (n=11967)	Yes	Consulting doctors	9765	81.6
		Others	454	3.8
		Attending special school/therapy	25	0.2
	No	Cannot afford	839	7.0
		Not available	172	1.4
		Not required	602	5.0
		Not known	110	0.9
Access to advised aid/appliances (5562)	Yes		3919	70.5
	No	Cannot afford	1142	20.5
		Not available	217	3.9
		Others	284	5.1
Receipt of any Help (n=11967)	Yes	From government	2774	23.2
		From other organization	222	1.9
	No		8971	74.9

**Table 4: Factors affecting access to disability-related healthcare among persons with visual disability**

Variable	Category	Accessibility to treatment AOR (95% CI)	P	Accessibility to aid/appliances AOR (95% CI)	P
Sector	Rural	1.04 (0.90-1.10)	0.618	1.07 (0.92-1.24)	0.409
	Urban	1		1	
Age	0–19 years	1	<0.01*	1	0.341
	20–50 years	0.70 (0.58-0.85)		0.90 (0.73-1.11)	
	>51 years	0.68 (0.57-0.80)		1.19 (0.99-1.45)	
Gender	Male	1	0.047*	1	0.070
	Female	0.89 (0.81-0.99)		0.89 (0.79-1.01)	
	Transgender	0.23 (0.04-1.43)		0.46 (0.02-9.65)	
Education	Up to Primary	0.72 (0.63-0.84)	<0.01*	0.54 (0.46-0.64)	<0.01*
	Above primary	1		1	
Religion	Hindu	1	0.006*	1	0.363
	Muslim	1.28 (1.07-1.52)		0.92 (0.77-1.10)	
	Others	1.03 (0.84-1.27)		1.19 (0.93-1.52)	
MPCE	Poorest	0.60 (0.50-0.73)	<0.01*	0.33 (0.26-0.41)	<0.01*
	Poor	0.80 (0.67-0.97)		0.51 (0.42-0.64)	
	Middle	0.90 (0.75-1.08)		0.66 (0.54-0.82)	
	Rich	0.99 (0.83-1.19)		0.71 (0.58-0.87)	
	Richest	1		1	
Social group	Schedule tribe	0.57 (0.48-0.69)	<0.01*	0.61 (0.49-0.76)	<0.01*
	Schedule caste	0.85 (0.73-1.00)		0.59 (0.49-0.72)	
	Other backward castes	0.92 (0.79-1.06)		0.78 (0.66-0.91)	
	Others	1		1	

AOR - Adjusted Odds Ratio, \*Statistically significant

**Table 5: Out-of-pocket expenditure incurred on disability-related healthcare among people with VD**

	All (11967)	VD with other disability (n=1746)	Only VD (n=10221)
Monthly medical expenditure			
Mean (SD), INR	384.31 (1508.46)	779.07 (2423.26)	316.87 (1276.87)
Median (IQR)*, INR	0 (384.31)	150.0 (500.0)	0 (384.31)
Zero expenses, n (%)	6719 (56.1)	826 (47.3)	5893 (57.7)
Up to INR 1000, n (%)	4362 (36.5)	634 (36.3)	2728 (36.5)
INR 1001-5000, n (%)	772 (6.5)	234 (13.4)	538 (5.3)
> INR 5000, n (%)	114 (0.9)	52 (3.0)	62 (0.6)
Monthly non-medical expenditure			
Mean (SD), INR	88.11 (293.38)	139.63 (432.31)	79.30 (261.40)
Median (IQR)*, INR	0 (88.11)	2.1 (88.4)	0 (88.11)
Zero expenses, n (%)	6820 (57.0)	873 (50.0)	5947 (58.2)
Up to INR 1000, n (%)	4993 (41.7)	828 (47.4)	4165 (40.7)
INR 1001-5000, n (%)	149 (1.2)	42 (2.4)	107 (1.0)
> INR 5000, n (%)	5 (0.04)	3 (0.2)	2 (0.01)
Monthly total expenditure			
Mean (SD), INR	472.42 (1673.18)	918.71 (2699.81)	396.18 (1411.88)
Median (IQR)*, INR	0 (472.42)	200 (616.7)	0 (472.42)
Zero expenses, n (%)	6539 (54.6)	798 (45.7)	5741 (56.2)
Up to INR 1000, n (%)	4287 (35.8)	616 (35.3)	3671 (35.9)
INR 1001-5000, n (%)	983 (8.2)	265 (15.2)	718 (0.7)
> INR 5000, n (%)	158 (1.3)	67 (3.8)	91 (0.9)
CHE 10%			
n (%)	3 (0.03)	1 (0.05)	2 (0.01)

\*Mann Whitney U test significant ( $P<0.05$ ) between VD with other disability and VD only

Whereas Pryor W *et al.*<sup>[14]</sup> found a 70% unmet need for assistive products among people with disability in Bangladesh.

In recent years, there has been a considerable increase in access to services as a result of the initiatives undertaken by



various non-governmental organizations and the government's national program aimed at addressing visual impairment.<sup>[12,15]</sup> Despite this, a quarter of the population still lacks access. In this study, older age, women, less education, less consumption expenditure, and marginalized communities such as ST and SC were associated with poor access to eye-related healthcare services among people with VD. Similarly, Marmamula S also reported that poor accessibility was further aggravated by person-related vulnerability factors, such as gender, socioeconomic status, and perceived financial burden of eye care services.<sup>[16]</sup>

Elderly people tend to use eye care services less frequently, often perceiving declining vision as an inherent aspect of the natural aging process.<sup>[16]</sup> In addition, they may lack awareness about the availability of effective treatments for various ocular conditions or the potential benefits that can improve their visual functioning.<sup>[16]</sup> Studies conducted in low- and middle-income countries consistently suggest that women are less likely to receive cataract surgery compared to men.<sup>[17,18]</sup> This gender-based disparity in the use of eye care services can be attributed to various socioeconomic and cultural factors. These include obstacles women face when accessing health facilities due to limited financial autonomy and lack of exposure to travel beyond their immediate community.<sup>[8]</sup> Factors affecting socioeconomic status such as income, social groups, and education are consistently reported as significant determinants of eye-related care utilization. Similar to the findings of our study, those with higher levels of socioeconomic disadvantage tend to have lower rates of utilizing eye care.<sup>[19,20]</sup>

### Availability

Some people with VD also mentioned that treatment services (1.4%) and aid/appliances (3.9%) for their ailments were not available. This was similar to a survey of the general population by Marmamula S *et al.*,<sup>[16]</sup> where they found that 3.7% of the population mentioned "non-availability" as the reason for not utilizing eye care services. Over the last few decades, there has been a substantial increase in service availability as a result of the combined efforts of various non-governmental organizations and governmental initiatives aimed at preventing blindness.<sup>[15]</sup>

### Affordability

Despite the improvement in service availability, affordability remained the main barrier to accessibility. Affordability was also a major barrier to service utilization in the general population and vulnerable marginalized communities.<sup>[16,21]</sup> Although CHEs were observed in very few individuals, monthly expenditures on eye care were still high. About 10% of people with VD still incur > INR 1000 for their eye-related disability. CHE was reported to be 12% of people with disability in Vietnam.<sup>[22]</sup> The relatively low OOPE in India could be due to public-funded health insurance schemes such as Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY), Central government health insurance scheme (CGHS), Assistance to Disabled Persons for Purchase/Fitting of Aids/Appliances (ADIP), etc.,

Public-funded health insurances aim to zero out-of-pocket expenses for healthcare,<sup>[23,24]</sup> but the study showed that half of the people with VD still have OOPE in this study and only 23.2% of people with VD received government grants for disability-related healthcare. OOPE increases in case of multiple disabilities.

### Future implications

The study emphasizes the urgent need for India to adopt a comprehensive and targeted strategy to reduce the prevalence of VD and improve access to healthcare services for people with disabilities. To achieve these objectives, it is recommended to implement interventions specifically tailored to different age groups, improve the accessibility of eye care services in rural areas, address socioeconomic inequalities, incorporate approaches sensitive to gender issues, and strengthen service availability while maintaining affordability. By expanding publicly funded health insurance coverage and other social security programs that will provide robust financial support to marginalized communities and empower women by removing existing barriers, India can effectively reduce the burden of VD.

### Strengths and limitations

The use of nationally representative data from a household survey in the study ensures that the findings have good external validity and provide information on both the prevalence of VD and access to healthcare. When interpreting the findings of this study, it is important to consider a few limitations. The study is based on secondary data, which limits its ability to assess the prevalence and access to healthcare without using specific questions and methods. However, the study aim was similar to the survey objectives. The assessment focused on expenditures from the past month, with some infrequent expenses in the last year. However, infrequent expenditures may be subject to recall bias due to a long recall period. The health needs related to disabilities might not be accurately captured as they relied on self-reported data. Furthermore, while the survey determined whether people needed disability-related health services/products and used them, it did not measure whether these adequately met their individual needs. Therefore, the evaluations of the unmet need are likely underestimated in this study.

### CONCLUSION

The study highlighted the prevalence of VD in India and the access to disability-related healthcare among people with VD. The prevalence of VD in India was found to be 0.23%, with a higher prevalence in rural areas and among females, marginalized communities, and those with lower socioeconomic status. The study also found that affordability was a major barrier to accessing eye care services. To achieve UHC for people with VD, India should adopt a comprehensive and targeted approach that includes age-specific tailored interventions, improved access in rural areas, addressing socioeconomic inequalities, a gender-sensitive approach, and

improved service availability. Affordability can be ensured by expanding publicly funded health insurance coverage and other social security schemes.

### Ethics approval

The study used data that are publicly made available by the Ministry of Statistics and Programme Implementation of the Government of India. Participants were not directly approached.

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### Conflicts of interest

There are no conflicts of interest.

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