

Knowledge and Attitude of Eye Care Practitioners on Legal Provisions and Social Issues of Visually Impaired Individuals in and around Mangalore: A Cross-sectional Study

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ABSTRACT

Introduction: Blind and visually impaired individuals continue to face significant legal and social issues, even though the Government of India has been ensuring comprehensive support through framing specialised legal measures. It is crucial for professionals who deal with blind and visually impaired individuals to know their legal rights and understand the everyday social challenges they face.

Aim: To assess the knowledge and attitude of eye care practitioners in and around Mangalore regarding legal provisions and social issues faced by visually impaired individuals.

Materials and Methods: A cross-sectional study was conducted among practitioners from various hospitals in Mangalore between May 2024 and January 2025. Participants were recruited based on predefined inclusion and exclusion criteria, after obtaining written informed consent. Data were collected using a researcher-developed questionnaire comprising three sections, including socio-demographic characteristics, knowledge, and attitude.

Descriptive statistics were applied, and inferential analysis was conducted using one-way Analysis of Variance (ANOVA). A p-value <0.05 was considered statistically significant.

Results: Among the 96 participants, 58 (60.4%) were aged 25-35 years, 75 (78.1%) were female, and 60 (62.5%) were optometrists. The majority, 58 (60.4%), had 1-10 years of professional experience. The mean total knowledge score was 13.78 ± 4.52 , while the mean total attitude score was 16.77 ± 2.4 , reflecting a generally favourable attitude. One-way ANOVA revealed a statistically significant difference in total knowledge scores across experience groups (p-value=0.018). Knowledge scores were significantly higher among practitioners with more than 15 years of experience.

Conclusion: Although eye care practitioners exhibit a favourable attitude towards supporting visually impaired individuals, they demonstrate only a moderate level of knowledge, with notable gaps in legal provision and social issues. These findings highlight the need for structured educational and training initiatives to enhance practitioners' knowledge and improve comprehensive patient care.

Keywords: Attitude and practice, Health knowledge, Health policy, Health service accessibility

INTRODUCTION

Vision Impairment (VI) refers to a decline in the functional ability of the eyes and the visual system, typically characterised by a reduction in Visual Acuity (VA) loss and/or Visual Field (VF) loss [1]. This remains a pressing global health concern, with the majority of individuals with visual impairment living in developing nations [2]. An estimated 4.95 million people in India are blind and nearly 70 million people live with visual impairment [3]. According to the most recent World Health Organisation (WHO) data, 2.2 billion individuals globally live with visual impairment [4]. In accordance with WHO visual impairment encompasses both low vision and blindness, where low vision means the condition where vision remains impaired and cannot be improved even after the best medical care [5].

Living with disability can sometimes be painful and difficult for individuals, and it can also create challenges for their families. Every society should make an effort to support individuals with disabilities in a way that upholds their autonomy and human rights, enabling them to pursue a meaningful life [6]. One social provision aimed at reducing the challenges of disability in India is the amendment of the persons with disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act of 1995 (PWD Act). As per the Act, disability encompasses a range of conditions such as blindness, low vision, hearing impairment, mental retardation, mental illness, cured leprosy, and locomotor disability. Also, it incorporated provisions for non discrimination and affirmative action and provides equal opportunities in education and employment to disabled persons [7]. Individuals who lack access to critical information are often unable to engage fully in social, political, and economic activities.

Visually impaired people, particularly in developing nations like India, have faced prolonged marginalisation due to the lack of accessible resources that inform them of their rights and how to claim them [7]. People with blindness and Visual Impairment (VI) often encounter challenges like social rejection, resentment, low self-confidence, anxiety, depression, and other emotional struggles that arise due to their perceived limitation when compared to healthy individuals. Children with impaired vision or blindness show signs of different range of emotional and physical complications [8]. A feeling of personal limitation often shows a typical behavioural pattern such as anxiety, depression, or overthinking. Their difficulty in social interactions and relationship building often leads to social withdrawal and loneliness. Furthermore, delays in language development, motor coordination, or cognitive skills have a negative influence on a child's social interaction [8].

Children with visual impairment have comparatively reduced but adequate social skills compared to those of their sighted peers. Limitations in visual input and challenges arising from visual defects contribute lower level of social skills among visually impaired students [9]. Research shows that children with visual impairment experience difficulty. Their inability to behave in a socially expected way often creates difficulty in being accepted by peers and society [10]. Eye care practitioners in India exhibit insufficient awareness and knowledge regarding low vision services [11,12]. A gap in practitioners' knowledge can prevent visually impaired individuals from accessing government support, rehabilitation program and opportunities to participate in the community.

The current study aimed to assess the knowledge and attitude of legal provisions and social issues faced by blind and visually impaired individuals among eye care practitioners.

MATERIALS AND METHODS

A cross-sectional study was conducted among eye care practitioners from various hospitals in and around Mangalore between May 2024 and January 2025. The study was approved by the Institutional Ethical Committee (YEC-1/2024/192), and all procedures in this study complied with the tenets of the Declaration of Helsinki and National Ethical Guidelines for Biomedical Research involving Human Participants issued by ICMR in 2017. Written informed consent was obtained from all participants prior to enrolment.

Inclusion criteria: Eye care practitioners such as ophthalmologists and optometrists with more than one year of clinical experience were included in the study

Exclusion criteria: Those with less than one year of clinical experience were excluded from the study. Participants were selected using a simple random sampling method. Once the signed consent was obtained, participants were provided with a self-structured questionnaire.

Sample size: The sample size was calculated using the following formula:

$$n = Z^2 p (1-p) / E^2$$

Where Z=1.96, the standard normal score

p=51.4%, the anticipated level of knowledge derived from the pilot study conducted among 10 eye care practitioners,

E=10% , the margin of error

n=96.

Based on this calculation, a sample size of 96 eye care practitioners was required and included in the study. Pilot study participants were not included further in the study.

Study Procedure

Data were collected using a researcher-developed questionnaire consisting of 20 items. The questionnaire was self-developed by the investigators after an extensive review of existing literature. The questionnaire comprised three sections. The first section assessed socio-demographic characteristics, including age, gender, profession, and year of clinical experience. The second section included questions assessing knowledge related to legal provisions and social issues of visually impaired individuals. The third section included attitude questions related to legal provision and social issues of visually impaired individuals. The knowledge section comprised 10 questions with different response formats. Five questions were multiple-choice questions with a single correct response. A correct response was awarded one mark and an incorrect response scored zero. Four questions, each contained four yes/no sub-items (a–d), with one mark per correct sub-item, yielding a maximum of four marks per question (total: 16 marks). One knowledge question included eight yes/no response options, giving a maximum score of eight. Based on this scoring pattern, the maximum possible knowledge score was 29.

The attitude section consisted of six questions and was assessed using a Likert scale, where a positive response was assigned a score of four and a negative response a score of one, with a maximum possible attitude score of 24 [Annexure 1]. The interpretation of the knowledge and attitude scores was descriptive in nature and based on the distribution of scores relative to the maximum possible values and the measure of variability.

The questionnaire was pretested among 10 eye care practitioners selected through convenience sampling, who met the same inclusion criteria as the main study participants. The purpose of pretesting was to assess clarity, comprehension, and feasibility. These participants' data were not included in the final data analysis. Feedback was

collected through informal verbal discussion and written comments after completion. Minor modifications were made to improve clarity and simplify wording, but the overall structure and scoring pattern remained unchanged. Content validity of the questionnaire was established through expert review by specialists, including ophthalmologists, optometrists, and a bioethicist. Consensus was achieved through discussion between the investigators and the experts, and modifications were incorporated only when there was agreement regarding the relevance and clarity of the items. A formal quantitative method such as the Content Validity Index (CVI) was not used; instead, content validity was assessed qualitatively.

Confidentiality and anonymity of participants were strictly maintained throughout data collection and analysis.

STATISTICAL ANALYSIS

The collected data were entered into Microsoft Excel and subsequently analysed using the Statistical Package for Social Sciences (SPSS) version 27.0. Socio-demographic characteristics were summarised using frequency and percentage. The knowledge and attitude scores were summarised as mean±Standard Deviation (SD), median Interquartile Range (IQR). Inferential analysis was performed using One-way ANOVA. A p-value of <0.05 was considered statistically significant.

RESULTS

A total of 96 participants took part in this study. Most participants in this study fell within the 25-35 years age group. Females constituted a higher proportion of the study compared to males. Most of the participants were optometrists followed by ophthalmologists and the majority had 1-10 years of professional experience [Table/Fig-1].

Variable	Categories	n (%)
Age (years)	25-35	58 (60.4)
	36-45	24 (25.0)
	46-55	11 (11.5)
	>55	3 (3.1)
Gender	Female	75 (78.1)
	Male	21 (21.9)
Occupation	Ophthalmologist	36 (37.5)
	Optometrist	60 (62.5)
Experience (years)	1-10	58 (60.4)
	10-15	28 (29.2)
	>15	10 (10.4)

[Table/Fig-1]: Demographic characteristics of participants (n=96).

The overall knowledge of the participants had a mean total score of 13.78±4.52 out of a maximum possible score of 29. The total attitude score showed less variability (16.77±2.4; IQR=3) out of a maximum score of 24, indicating relatively consistent responses among participants [Table/Fig-2].

Domain	Total score	Mean	Median	SD	IQR
Legal knowledge	21	10.33	11	3.69	5
Social knowledge	8	3.45	3.5	1.54	2
Total knowledge	29	13.78	14.5	4.52	7
Legal attitude	12	9.54	9.5	1.69	2
Social attitude	12	7.23	7	1.51	2
Total attitude	24	16.77	17	2.4	3

[Table/Fig-2]: Knowledge and attitude scores of participants in legal and social domains.

Data are presented as mean, median, SD and IQR

There was a statistically significant difference in legal and total knowledge scores across different experience levels [Table/Fig-3]. One-way ANOVA revealed a statistically significant difference in total

knowledge scores across experience groups (p -value=0.018). No statistically significant difference was observed in attitude scores across experience groups.

Parameter	Experience	Mean $\pm$ SD	F-value	p-value
Legal knowledge	01y-10y (n=58)	10.67 $\pm$ 3.61	24.98	0.018*
	10y-15y (n=28)	8.86 $\pm$ 3.56		
	>15y (n=10)	12.5 $\pm$ 3.24		
Social knowledge	01y-10y (n=58)	3.47 $\pm$ 1.66	25.95	0.751
	10y-15y (n=28)	3.32 $\pm$ 1.39		
	>15y (n=10)	3.7 $\pm$ 1.34		
Total knowledge	01y-10y (n=58)	14.14 $\pm$ 4.65	27.21	0.018*
	10y-15y (n=28)	12.18 $\pm$ 4.18		
	>15y (n=10)	16.2 $\pm$ 3.36		
Legal attitude	01y-10y (n=58)	9.62 $\pm$ 1.7	25.69	0.113
	10y-15y (n=28)	9.11 $\pm$ 1.66		
	>15y (n=10)	10.3 $\pm$ 1.42		
Social attitude	01y-10y (n=58)	7.36 $\pm$ 1.63	28.21	0.235
	10y-15y (n=28)	6.86 $\pm$ 1.35		
	>15y (n=10)	7.5 $\pm$ 1.08		
Total attitude	01y-10y (n=58)	16.98 $\pm$ 2.46	25.47	0.058
	10y-15y (n=28)	15.96 $\pm$ 2.22		
	>15y (n=10)	17.8 $\pm$ 2.1		

[Table/Fig-3]: Comparison between different experience levels. p-value <0.05 was considered statistically significant. *Statistically significant

DISCUSSION

This study assesses the knowledge and attitude of eye care practitioners regarding legal provision and social issues of visually impaired individuals. The observed mean score (13.78) was approximately midway between the minimum and maximum possible scores (0-29), indicating neither low nor high level knowledge. No predefined or validated cut-off values were used; the interpretation was descriptive in nature. This highlights a critical gap between knowledge of formal legal provisions and understanding of day-to-day social challenges experienced by visually impaired individuals. Although the study population differ this finding was consistent with a study from eastern India by Kumar D et al., which reported that many healthcare professionals were unaware of legal frameworks (37.7%) [13]. This consistency across studies suggests an overall gap among healthcare providers, which may limit their ability to educate patients about their legal provisions, ultimately hindering access to essential services and rights.

A study identified that the general public has a limited awareness of low vision and holds large misconceptions of blindness [14]. Another study found that the majority of people in urban South India are unaware of eye diseases. Most respondents reported that they gained awareness about eye diseases through family and friends who were previously affected, rather than healthcare professionals [15]. This implies that there are barriers to obtaining proper knowledge about available services for them. Unnikrishnan B et al., suggest that practitioners are the first point of contact for information to the patients [16].

Individuals with blindness and visual impairment frequently encounter emotional and social challenges such as social rejection, diminished self-esteem, anxiety, depression, and a sense of personal limitation compared to sighted individuals [8]. Kovai V et al., stated 72.7% of visually impaired individuals in rural Andhra are not taking treatment due to social barriers [17]. This underscores the importance of having knowledge of social issues faced by the visually impaired. Earlier research identified major barriers for practitioners to addressing depression in visually impaired individuals, including a lack of confidence, insufficient training, and limited time [18]. In

the current study, social knowledge scores were lower. Addressing these issues is crucial in ensuring that patients not only receive clinical care but also appropriate legal and social guidance.

The present study found that experience had a significant impact on knowledge score, with practitioners having more than 15 years of experience demonstrated a higher score. This finding suggests that continued professional exposure and experiential learning may enhance knowledge. This highlights the need for structured continuing education initiatives to support practitioners in the early stage of their professional practice.

Associations of knowledge and attitude scores with gender and occupation were not assessed due to unequal group sizes, which reduces statistical power and interpretability, and the comparisons were not a primary objective of the study. The consistently higher attitude scores observed in this study suggest that eye care practitioners generally hold a favourable attitude towards supporting visually impaired individuals. This finding likely reflects shared professional ethics and patient-centred values within the healthcare profession. However, despite this favourable attitude, gaps in knowledge related to legal provisions and social issues remain. This suggests that practitioners are willing to help if they receive information on key aspects such as legal rights, available rehabilitation services, and social challenges faced by visually impaired individuals. To address these issues, practitioners must undergo more structured and comprehensive educational programs that focus not only on legal rights and services but also on the social issues faced by visually impaired individuals. Practitioners should also receive periodic updates on legislative changes to ensure accurate guidance for patients.

In the future, further investigation can include the perspective of visually impaired individuals to understand their experience with practitioners' communication, guidance, and overall support. Moreover, research can expand on large multicentric samples across different regions of India, which will enhance the generalisability of the findings and offer a clearer understanding of how well practitioners are equipped across the country.

Limitation(s)

This study was conducted within a specific geographical region, and therefore, the findings may not be generalisable across all parts of India. Additionally, the study relies on self-reported responses from participants, which may be subject to response bias or overestimation of knowledge and attitude. Furthermore, the association of knowledge and attitude scores with gender and occupation was not assessed due to unequal group size among participants. The lack of validated cut-offs reduces comparability with other studies and makes interpretation subjective. Although content validity was established qualitatively, no formal quantitative validation (e.g., CVI) or statistical reliability testing (e.g., Cronbach's alpha) was performed. This limits the ability to fully establish the psychometric robustness of the questionnaire.

CONCLUSION(S)

This study reveals that even though eye care practitioners in Mangalore show a favourable attitude toward supporting visually impaired individuals many lack knowledge about legal provisions and social support. Experience was linked to better knowledge. These findings are preliminary, descriptive, and region-specific to Mangalore. Larger multicentric studies across India are needed to confirm generalisability and provide stronger evidence for policy and training interventions.

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ANNEXURE 1

Demographic Section

1. Age in years

- a) 25-35 years
- b) 36-45 years
- c) 46-55 years
- d) >55

2. Gender

- a) Male
- b) Female
- c) Other

3. Occupation of the participant

- a) Ophthalmologist
- b) Optometrist

4. Experience in years

- a) <1
- b) 01-10 years
- c) 10-15 years
- d) >15

Knowledge Section

5. Which of the following criteria are required for identifying Vision Impairment (VI)? (Tick all that apply) (L)

- a) Visual Acuity (VA) <3/60 in better eye
- b) Visual Acuity (VA) <6/60 in better eye
- c) Visual Field (VF) <10 degrees in the better eye
- d) Visual Field (VF) <5 degrees in the better eye

6. Which all categories of disability come under the category of Benchmark disabilities according to the Right of Persons with Disabilities Act, 2016 passed by the parliament? (Tick all that apply) (L)

- a) Mentally retarded: Yes/No
- b) Leprosy: Yes/No
- c) Locomotors disability: Yes/No
- d) Low Vision: Yes/No

7. According to the Right of Persons with Disabilities Act those with how much percentage of disability as certified by a governmental medical authority, are entitled to receive benefits from the Government of India? (L)

- a) 50%
- b) 40%
- c) 30%
- d) 20%

8. Are you aware of the Right of Persons with Disabilities Act, 2016 passed by the parliament provides funds for financial support to the persons with disabilities? (Tick all that apply) (L)

- a) National: Yes/No
- b) State: Yes/No
- c) Regional: Yes/No
- d) Local: Yes/No

9. What are the major social issues faced by a person with Visual Impairment (Tick all that apply) (S)

- a) Lack of confidence: Yes/No
- b) Anger: Yes/No
- c) Depression: Yes/No
- d) Low self-esteem: Yes/No

10. **What are the major problems that you face in helping a person with Visual Impairment (Tick all that apply) (S)**
 - a) Lack of awareness: Yes/No
 - b) Lack of interest/motivation: Yes/No
 - c) More workload: Yes/No
 - d) Time-consuming: Yes/No
11. **According to you what are the areas in which Government has given provisions for Visually Impaired individuals? (Tick all that apply) (L)**
 - a) Travel: Yes/No
 - b) Income tax concession: Yes/No
 - c) Reservation of jobs: Yes/No
 - d) Assistance for self-employment: Yes/No
 - e) Bank loans: Yes/No
 - f) Educational concession: Yes/No
 - g) Fund for the purchase of vision aids: Yes/No
 - h) Local fund for recreational activities: Yes/No
12. **Visually Impaired Children from which age group is eligible for free education according to the Rights and Persons with Disabilities Act, 2016 of the Indian code? (L)**
 - a) 6 years-12 years
 - b) 6 years-18 years
 - c) 10 years and above
 - d) 8 years-18 years
13. **In your practice, you consider a person as having Visual Impairment based on? (L)**
 - a) WHO criteria
 - b) Patient's need
 - c) Poor vision in one eye only
 - d) Poor vision in both eyes
14. **You consider a person is having Visual Impairment when his/her Visual Field (VF) from the point of fixation is worse than? (L)**
 - a) 10°
 - b) 20°
 - c) 30°
 - d) Not sure
16. **Do you agree that children with Visual Impairment have a lower level of social skills compared to that of sighted children? (S)**
 - a) Strongly agree
 - b) Agree
 - c) Disagree
 - d) Strongly disagree
17. **Do you agree that an eye care practitioner shall be updated on changing legislation and amended rules on the Rights and Disability Act periodically? (L)**
 - a) Strongly agree
 - b) Agree
 - c) Disagree
 - d) Strongly disagree
18. **Do you agree that being an eye care practitioner it is your duty to advise your Visually Impaired patients regarding legal rights available for them and guide them appropriately? (L)**
 - a) Strongly agree
 - b) Agree
 - c) Disagree
 - d) Strongly disagree
19. **Do you agree that the first step in receiving a disability certificate is visiting a government hospital and enquiring? (L)**
 - a) Strongly agree
 - b) Agree
 - c) Disagree
 - d) Strongly disagree
20. **Do you agree that providing good social skill training, training on good communication skills, creating a friend's circle in society, and counseling family members and peers will improve social isolation of visually impaired individuals? (S)**
 - a) Strongly agree
 - b) Agree
 - c) Disagree
 - d) Strongly disagree

Attitude Section

15. **Do you agree that a Visually Impaired person has difficulty with social interactions and making contacts and thus prefers to live in isolation? (S)**
 - a) Strongly agree
 - b) Agree
 - c) Disagree
 - d) Strongly disagree