SHORT COMMUNICATION

Assessing the Level of Knowledge, Awareness, and Practice of Vision Rehabilitation in Healthcare Professionals of Karachi

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Abstract

Blindness and vision loss are the second most common disabilities that interfere with an individual's daily activities. Multiple barriers to vision rehabilitation exist, including the lack of knowledge and awareness among eye care practitioners and the referral of visually impaired patients for rehabilitation. This study assesses healthcare professionals' knowledge, understanding, and practice regarding vision rehabilitation in Karachi, Pakistan.

A cross-sectional study was conducted using online surveys of 58 allied health professionals in Karachi, Pakistan. A self-designed questionnaire was distributed through convenience sampling to evaluate their knowledge, awareness, and practice regarding vision rehabilitation. Participants' demographics were recorded; Pearson correlation and linear regression analysis were used for calculating inferential statistics.

Among the 58 responses, 79.3% were Physiotherapists, 72.2% were Occupational Therapists, and 3.4% were Speech Therapists from Karachi. Results showed that professionals were performing good practices (50%) and had fair awareness of vision rehabilitation (60.6%), but their level of knowledge was compromised (28.1%).

It was established that allied health professionals in Karachi have limited knowledge, average awareness, and fair practice toward vision rehabilitation.

Keywords: *Vision impairment, rehabilitation, awareness, knowledge, practice, allied health professionals.*

INTRODUCTION

In 2019, the Global Burden of Diseases (GBD) listed vision loss and blindness as the second most frequent disability worldwide [1]. According to the World Health Organization (WHO), approximately 2.2 billion people worldwide are affected with vision impairment or blindness, with one billion cases potentially preventable or treatable [2]. Vision impairments are defects in the eye (s) or visual systems that cause a loss of visual function [3, 4].

Blindness and low vision can significantly reduce the quality of life and psychological well-being [5]. Quality of life is a crucial factor that impacts overall health [6]. Visual impairments are a major public health concern globally due to their rising prevalence and their effect on an individual's health-related quality of life [7, 8]. Moreover, people with visual impairment face an increased risk of mortality [9, 10]. They often engage in less physical activity, likely due to decreased participation in sports and recreational activities and lower perception of their motor abilities [11]. In older adults, visual impairment is the leading cause of disability, linked to lower life satisfaction and reduced QOL [12]. Research has shown that visual impairment is associated with loss of independence, limited mobility, an increased risk of falls, a heightened level of depression, poor social participation, and diminished educational and professional opportunities [13-16].

Vision rehabilitation is recommended for permanent vision impairment, enhancing well-being, psychosocial functioning, participation, and daily autonomy tasks [17, 18]. It includes optimizing the residual sight, training with low vision aids, and improving vasomotor skill reading orientation, and mobility. Additionally, it provides environmental adaptation guidance, psychological support, and vocational counselling, fostering independence and confidence [19, 20]. A multidisciplinary team, including an occupational therapist, physiotherapist, speech and language therapist, orientation and mobility specialist, psychologist, counsellors, and ophthalmologist support vision rehabilitation [21]. Also, the ophthalmologist should be aware of community services for appropriate referrals [22].

Despite significant research supporting vision rehabilitation, several challenges hinder access to these services, primarily, the lack of awareness among eye care professionals [23]. Other factors include inadequate knowledge about the benefits of vision rehabilitation, lack of information on referral criteria, absence of interprofessional guidelines, and insufficient research and resources [24, 25]. Additionally, approaches among providers are not standardized internationally, with disagreement on terminology and provision

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requirements being major obstacles [26]. Another issue is the low referral rate of visually impaired patients, with only 11.2 % of eligible patients being referred to vision rehabilitation [27, 28]. Therefore, this study aims to assess the knowledge, awareness, and practice of vision rehabilitation services among healthcare professionals in Karachi, Pakistan.

MATERIAL AND METHODS

A cross-sectional survey was conducted in June-December 2023. Data was collected from allied health professionals working in tertiary care hospitals (Ziauddin Hospital, Liaquat National Hospital, and Agha Khan Hospital). The allied health professionals included physiotherapists, occupational therapists, and speech & language therapists. The minimum sample size calculated for this study was 43. However, the final sample size was 58 determined using the online software of Open EPI (version 3), with a 95 percent confidence interval, 7 % margin of error, and a power of 80%. This calculation was based on a previous study reporting that at least 4.2 percent of healthcare professionals were aware of vision rehabilitation [27].

A non-probability convenience sampling technique was used. This study excluded undergraduate students of physiotherapy, occupational therapy, and speech-language therapy and excluded undergraduate students of physiotherapy, occupational therapy, and speech-language therapy. An institutional review approval was obtained with reference number (ASC-PT-004/03/2023).

For the data collection; a self-designed questionnaire was used. Data was collected through an online and a direct survey. At the start of the form, consent was taken from the participants for their voluntary participation and informed of their anonymity. The participants who consented to take part in the study were briefed about the study topic and purpose.

The data was analyzed using a statistical package for social sciences (IBM-SPSS version 20.0) for data analysis. Percentages and frequencies were calculated to analyze categorical data, and the mean (standard deviation) was calculated to assess continuous data. The test of normality was applied to examine the distribution of data. Pearson's correlation test was used to check the relationship between the knowledge, awareness, and practice scores. A linear regression analysis test was also applied to predict their relationship.

RESULTS

Demographics

This study had 58 participants, 55.2% (n=32) males and 44.8% (n=26) females. The mean age of participants was 28.38 ± 5.34 years. Most participants were between the ages of 23-33 (n=52, 89.7%). In this study, 79.3% (n=46) of participants were physiotherapists, 17.2% (n=10) were occupational therapists, and only 3.4% (n=2) were speech and language therapists. Most of the respondents were clinicians (n=43, 74.1%) (**Table 1**).

Table 1: Demographic information of participants.

Characteristics	Frequency (%)
Gender Distribution	
Female	26 (44.8)
Male	32 (55.2)
Age Distribution (Years)	
(Mean ± S.D)	28.38 ± 5.34
23-33 Years	52 (89.7)
34-44 Years	5 (8.6)
45-55 Years	1 (1.7)
Profession	
Physiotherapist	46 (79.3)
Occupational Therapist	10 (17.2)
Speech and Language Therapist	2 (3.4)
Job Category	
Clinician	43 (74.1)
Academic	15 (25.9)
Years of Experience	
< 1 Year	8 (13.8)
> 1 - Less than 3 years	20 (34.5)
> 3 - Less than 5 years	19 (32.8)
> 5 - Less than 7 years	4 (6.9)
> 7 years	7 (12.1)

Level of Knowledge of Vision Rehabilitation

Most participants (77.6) lacked adequate knowledge about vision rehabilitation, with only 25.9% correctly identifying rehabilitation goals. Less than 20% had pre-graduation training, and 74. 1% were unaware that medical-surgical interventions do not replace rehabilitation. Additionally, 62.1% did not know which professionals provide these services, and 55.2% could not identify team members. Moreover, 53.4% were unaware of available low-vision devices. The mean knowledge score was 2.81±1.65 out of 10, indicating a 28.1% overall knowledge level.

Awareness of Vision Rehabilitation

Nearly 84.5% (n=49) of therapists were aware of the WHO definition of visual impairment, almost 46.2% (n=27) were not aware of the VISION: 2020 program

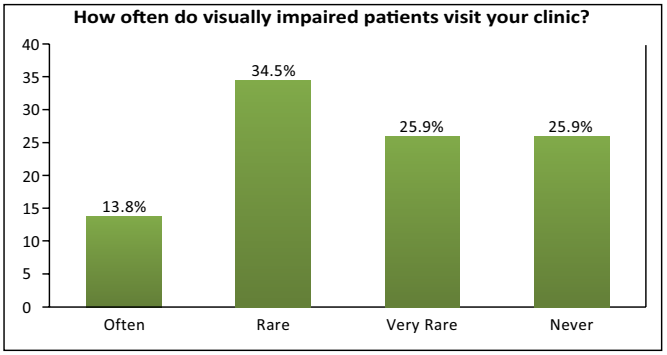

Fig. (1): The percentage distribution of responses to the question, "How often do visually impaired patients visit your clinic?".

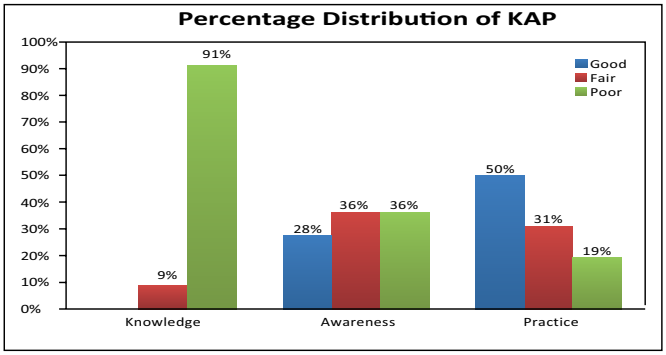

Fig. (2): The graph shows the percentage distribution of health professionals' knowledge, awareness, and practice.

given by the WHO (World Health Organization) and did not know that the priority concern in the VISION: 2020 program was the low vision. Most of the participants (69%, n=40) had heard about vision rehabilitation. However, only 43.1% (n=25) of these participants were aware of their part in Vision Rehabilitation.

In addition, the mean awareness score was 3.03±1.6 (out of 5), suggesting an overall awareness score rate of 60.6% (3.03/5×100), indicating that awareness of vision rehabilitation is moderate among allied health professionals.

Practice Regarding Vision Rehabilitation

Practices regarding Vision Rehabilitation were fair among allied health professionals. The mean practice score was 3.03±1.696 (out of 4), suggesting an overall practice score of 75.7% (3.03/4×100).

Fig. (1) reveals the responses given by allied health professionals about the frequency of visually impaired patients visiting rehabilitation clinics. 25.9% (n=8) of therapists responded "Often", 34.5% (n=20) responded "Rare", 25.9% (n=15) responded "Very rare", and 25.9% (n=15) responded "Never".

Forty-two (72.4%) therapists responded that they refer visually impaired patients for vision rehabilitation to other professionals. 70.7% (n=41) of professionals stated they do not occasionally read international scientific articles on vision rehabilitation. When asked about the practice, they will follow if they get a patient with visual impairment. 44.8% (n=26) of therapists responded that they refer them to other hospitals or rehab centres. 46.6% (n=27) of allied health professionals responded that they provide vision rehabilitation, and 8.6% responded that they recommend the best possible spectacle correction. When asked about the reason for not pursuing additional training in vision rehabilitation, most of the participants (27.6%) said they do not know of any program that meets their expectations.

Total KAP Score of Allied Health Professionals

Knowledge and awareness total scores were divided into three categories: good, fair, and poor. The correct answer received a score of 1, while the wrong answer received 0. Good knowledge was defined as a score of > 8, fair knowledge as a score of 6-8, and poor knowledge as a score less than 6. Of 58 therapists, 91.4 % (n=53) had inadequate knowledge of vision rehabilitation, 8.6% (n=5) had adequate knowledge, and none had excellent knowledge of vision rehabilitation.

Only 27.6% (n=16) of 58 allied health professionals had a good awareness of Vision Rehabilitation, 36.2% (n=21) had fair awareness, and 36.2% (n=21) had poor awareness (**Fig. 2**).

When it came to vision rehabilitation, fifty percent of therapists (n=29) were in the excellent practice range, 31 percent (n=18) were in the fair practice level, and 19 percent (n=11) were in the poor practice area.

Correlation between Knowledge, Awareness, and Practice of Vision Rehabilitation

The correlation coefficient was calculated to describe the relationship between knowledge, awareness, and practice of professionals related to vision rehabilitation. Table **2** shows a positive and significant correlation between knowledge awareness, knowledge practice, and awareness practice. The correlation coefficients were (0.539, 0.382, and 0.382, respectively; $P < 0.01$). The

Table 2: Correlation between knowledge, awareness, and practice.

Variable	Correlation	Awareness	Knowledge	Practice
Awareness	Pearson Correlation	1	0.539*	0.382*
	Sig. (2-tailed)	-	0	0.003
Knowledge	Pearson Correlation	0.539*	1	0.382*
	Sig. (2-tailed)	0	-	0.003
Practice	Pearson Correlation	0.382*	0.382*	1
	Sig. (2-tailed)	0.003	0.003	-

**Correlation is significant at the 0.01 level (2-tailed)*

Table 3: Relationship between knowledge and practice predicted by simple linear regression test.

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.582	0.081	-	7.145	0
	Knowledge	0.772	0.25	0.382	3.089	0.003

Table 4: Relationship between awareness and practice predicted by simple linear regression test.

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.569	0.085	-	6.709	0
	Awareness	0.378	0.122	0.382	3.093	0.003

correlation between knowledge-awareness is moderate, while knowledge-practice and awareness-practice show a fair correlation.

Regression Analysis of Knowledge and Awareness with Practice of Vision Rehabilitation

According to the findings mentioned in Tables **3** and **4**, awareness was significantly associated with practice score at (β: 0.378, p = 0.003), and knowledge was also significantly associated with practice score at (β: 0.378, p = 0.003). The respondents who had knowledge and awareness of vision rehabilitation were more likely to have good practices regarding vision rehabilitation.

DISCUSSION

This study aims to assess the awareness, knowledge, and practice of low vision rehabilitation among healthcare professionals in Karachi. Vision rehabilitation, crucial for blind and visually impaired patients requires feasibility and rationality. Evaluating healthcare professionals' knowledge and practices can promote interest and awareness in vision rehabilitation. The study included allied health professionals such as physiotherapists, occupational therapists, and speech-language therapists.

Second, the findings of our study revealed that most therapists (84.5%) were aware of the definition of vision rehabilitation by the World Health Organization. However most of them were not significantly aware of the various aspects of vision rehabilitation, such as awareness of Vision Program 2020 (53.4%) given by World Health Organizations, priority concern for vision (31%), and the role of therapists in low vision rehabilitation (43.1%). Lack of awareness of available vision rehabilitation services was a barrier among rehabilitation professionals in our study which correlates with the literature [24]. Studies reported by Wang *et al.* (2017) also reported similar findings, *i.e.* lack of awareness and understanding of the purpose, approaches, and effectiveness of vision rehabilitation among health professionals; the absence of inter-professional strategies for clinical findings; and models of care in vision rehabilitation [25]. Similarly, another author observed that approaches among vision rehabilitation providers are not internationally standardized, and a lack of consensus on terminology and service needs for vision rehabilitation is causing difficulty in this field [26].

We found that the study participants had poor knowledge of vision rehabilitation. Similarly, the study on the hurdles to using low-vision services found analogous results [23]. However, the degree of expertise among eye care practitioners was excellent [25]. Although our research found that professionals had a low level of knowledge, the results varied depending on the location, years of experience, and basic understanding. He reported main barriers such as lack of motivation for providing low vision care, lack of practice, and lack of reference standard pathways. However, according to our research, most professionals (50%) have good vision rehabilitation practice, and 31% have fair practice.

A study reported that the barrier and issue in the practice of vision rehabilitation is the low number of referrals of visually impaired patients to rehabilitation professionals [27]. They estimated that only 11.2% of eligible patients were referred to vision rehabilitation. Our study showed positive and significant correlations between knowledge-awareness, knowledge-practice, and awareness-practice (Pearson correlation coefficients were 0.539, 0.382, and 0.382, respectively, $P < 0.01$). It reaffirms that better knowledge and attitudes are associated with better practices. Similar associations between these variables were documented in previous KAP studies. Therefore, health authorities should give equal importance to raising awareness and knowledge

of vision rehabilitation while intensifying their efforts to improve health services.

The current study revealed that the knowledge and understanding of vision rehabilitation among rehabilitation professionals in Pakistan is limited.

CONCLUSION

The results of our study showed that allied health professionals were following the best practices but their knowledge and awareness of vision rehabilitation were limited. Furthermore, knowledge and awareness scores are significant predictors of practice scores in this study. That reaffirms that increased levels of knowledge and awareness are associated with proactive practices. This survey also indicated gaps in certain parts of knowledge that need to be emphasized in future awareness and instructional programs.

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CONSENT FOR PUBLICATION

Written informed consent was taken from the participants.

CONFLICT OF INTEREST

We have no known conflict of interest to disclose.

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AUTHORS' CONTRIBUTION

Concept and design: FI, AF
Drafting and Writing: MA, FI
Data collection and interpretation: SR, AF
Final approval: AF, MA, FI

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