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Exploring Knowledge, Attitude, And Perception Of Ent Specialists Towards The Role of Physiotherapy In Vestibular Rehabilitation

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Abstract

OBJECTIVE: There is compelling scientific evidence about the role of physiotherapists in vestibular rehabilitation. However, patients with vestibular disorders including dizziness, vertigo, BPPV and balance disturbances, are seldom referred to physiotherapists in Pakistan. This study aimed to assess the knowledge, attitude, and perception of ENT specialists in Hazara Division regarding the role of physiotherapy in vestibular rehabilitation, and to examine the barriers and possible strategies for enhancing interprofessional collaboration between ENT specialists and physiotherapists.

METHOD: This cross-sectional study was conducted among ENT specialists practicing in the Hazara Division. A total of 59 participants were recruited using a non-probability convenience sampling technique. Data were collected using a self-structured questionnaire developed by the researchers after an extensive review of relevant literature. The questionnaire was reviewed and approved by the institutional research committee to ensure content validity. It consisted of sections assessing knowledge, attitude, and perception regarding the role of physiotherapy in vestibular rehabilitation, as well as perceived barriers and strategies for improving interprofessional collaboration. The questionnaire was distributed to eligible participants in different hospitals and clinics, and responses were collected for analysis.

RESULTS: A total of 59 ENT specialists participated in the study. Among ENT specialists, vestibular rehabilitation knowledge was predominantly average, with 94.9% (n = 56) demonstrating average knowledge and only 5.1% (n = 3) showing poor knowledge. Attitudes toward physiotherapy were largely positive, with 88.1% (n = 52) showing a positive attitude, 8.5% (n = 5) moderate, and 3.4% (n = 2) negative. Perception was also favorable, as 84.7% (n = 50) had good perception, 11.9% (n = 7) moderate, and 3.4% (n = 2) poor perception. The most commonly reported barriers included limited availability of trained physiotherapists (66.1%, n = 39), patient-related factors such as lack of motivation (66.1%, n = 39), and institutional constraints (59.3%, n = 35).The most supported strategies were the development of institutional guidelines promoting collaborative care (89.8%, n = 53), followed by interprofessional case discussions (83%, n = 49), shared referral pathways (83%, n = 49), and joint training initiatives (81.3%, n = 48).

CONCLUSION: ENT specialists showed average knowledge, positive attitudes, and supportive perceptions toward physiotherapy in vestibular rehabilitation and interprofessional collaboration. However, referral barriers, like limited trained physiotherapists, patient-related factors, and institutional constraints were identified. Strengthening structured collaboration and specialized training may improve integration and patient outcome.

Introduction

A complex part of the brain and inner ear, the vestibular system is essential for preserving balance, orienting oneself spatially, and coordinating head and eye movements. Debilitating symptoms like vertigo, dizziness, imbalance, nausea, and visual disturbances can arise from malfunction of this system, which can have a major impact on a person's quality of life, psychological well-being, and functional independence[1]. Globally, vestibular disorders are a significant public health concern. According to epidemiological research, roughly 35% of persons over 40 will develop vestibular dysfunction at some point in their lives[2].

Vestibular problems are more common as people age and are linked to increased falls, decreased mobility, lower engagement in daily activities, social isolation, anxiety, and depression[3]. Central vestibular diseases, Meniere's disease, bilateral vestibular hypofunction, labyrinthitis, vestibular neuritis, and Benign Paroxysmal Positional Vertigo (BPPV) are common vestibular pathologies[4]. The conventional medical treatment of these disorders frequently consists of dietary changes, pharmaceutical therapies, and occasionally surgery. However, medical treatment often doesn't treat the underlying functional limitations linked to vestibular dysfunction and only partially resolves symptoms.[5]

Physical therapy is essential for helping people with balance and movement impairments regain functional mobility and enhance their quality of life.[6] Physical therapy treats deficiencies in strength, coordination, and postural control through focused, research-based interventions[7]. Specifically, vestibular rehabilitation is a specialty area of physical therapy that aims to help individuals with vestibular dysfunction become more functionally independent and safely participate in everyday activities by lowering dizziness, increasing balance, and improving gaze stability.[8, 9]

For the treatment of a variety of vestibular problems, vestibular rehabilitation therapy—which is mainly provided by qualified physiotherapists—has become a very successful, evidence-based technique.[10]. This therapy strategy makes use of specially created training regimens intended to support vestibulo-ocular reflex adaptation, habituation to motion stimuli, central nervous system compensation, and enhancement of balance and gait function[8, 11]. Studies consistently show that vestibular therapy improves functional performance, lowers the risk of falls, and improves overall quality of life for people with vestibular impairment.[12]

According to the World Health Organization, providing comprehensive, patient-centered care and improving health outcomes require interprofessional teamwork. Effective communication between physiotherapists and Ear, Nose, and Throat (ENT) experts is especially important when vestibular disorders are involved. Through clinical examination, vestibular function testing, and imaging studies, ENT experts are skilled in detecting vestibular disorders. Physiotherapy referrals for vestibular rehabilitation can greatly improve patient outcomes and speed recovery after a proper diagnosis[13].

However, physicians' knowledge, comprehension, and acceptance of physiotherapy's function and potential are critical to the success of interprofessional collaboration. Prior studies conducted across a range of healthcare settings have demonstrated that doctors' ignorance, misunderstandings, and disapproval of physiotherapy can be major obstacles to efficient referral practices and team-based care delivery[14]. Physicians' opinions are influenced by a variety of factors, such as their exposure to rehabilitation sciences in school, their clinical experiences using physiotherapy services, their professional relationships with physiotherapists, and the institutions of the healthcare system as it currently exists.

In Pakistan, and more especially in the Hazara region, which includes the districts of Haripur, Mansehra, Abbottabad, and Battagram, not much study has been done to assess the attitudes, knowledge, and perspectives of ENT experts on the use of physiotherapy in vestibular rehabilitation. Geographical obstacles, a lack of specialist rehabilitation treatments, a lack of healthcare infrastructure in hilly locations, and disparities in healthcare awareness among communities are some of the particular healthcare issues that the Hazara region faces. Understanding ENT professionals' perspectives on vestibular physiotherapy in this specific field is essential for identifying knowledge gaps, dispelling misconceptions, identifying barriers to interprofessional collaboration, and developing targeted educational programs. Strategies to strengthen collaboration frameworks between physiotherapists and ENT specialists can ultimately lead to improved patient outcomes and simpler access to evidence-based vestibular rehabilitation treatments throughout the Hazara region.

METHOD

The study was conducted in government and private hospitals and clinics across Hazara Division. A cross-sectional descriptive study design was employed to assess ENT specialists' knowledge, attitudes, and perceptions regarding vestibular rehabilitation, as well as potential barriers and strategies for improving interprofessional collaboration with physiotherapists. A non-probability convenience sampling technique was used to recruit participants based on availability, resulting in a total sample of ENT specialists who met the inclusion criteria. The study was completed over a period of approximately five months.

Eligible participants included registered ENT specialists actively engaged in clinical practice and academic work, with a minimum of one year of professional experience, and employed in or regularly seeing patients at public, private, or teaching hospitals/clinics within Hazara Division. ENT specialists practicing outside Hazara Division, as well as trainees, residents, interns, and non-independent medical officers, were excluded.

Prior to data collection, ethical approval was obtained from the Research Ethical Committee (REC) of relevant institutions in Hazara Division. Data were collected using a self-structured questionnaire designed to capture demographic details, knowledge of vestibular rehabilitation, attitudes toward physiotherapy, perceptions of interprofessional collaboration, referral barriers, and strategies to enhance coordination. Prior to participation, all ENT specialists were provided with an informed consent form explaining the purpose of the study, voluntary participation, confidentiality, and the right to withdraw at any time. Only those who provided voluntary informed consent

were included in the study. Completed questionnaires were collected, organized, and prepared for analysis to ensure accurate and reliable data.
Data were entered and analyzed using IBM SPSS (Statistical Package for the Social Sciences). Descriptive statistics were calculated as frequencies and percentages for categorical variables The Shapiro-Wilk test was used to determine the data's normality, and the results showed a non-parametric distribution. As a result, non-parametric statistical tests were used to look at how the research variables varied.

RESULTS

DEMOGRAPHIC

The participants' demographic details were compiled using descriptive statistics. The following categorical factors were displayed as frequencies and percentages: age group, gender, years of professional experience, and working context. 59 ENT experts in all took part in the study. In terms of age distribution, participants ranged in age from 25 to 35 years old (44.1%), followed by those aged 36 to 45 (32.2%), 46 to 55 (13.6%), and 56 to 65 (10.2%). Men made up 78% of the participants, while women made up 22%. In terms of clinical experience, 39% of participants had less than five years, 22% had five to ten years, 16.9% had eleven to fifteen years, and 22% had more than fifteen years. 37.3% of the participants worked in government hospitals, 32.2% in private institutions, and 30.5% practiced in both.

Table 1: Demographic Characteristics of Study Participants

Variables	Category	Frequency	Percentage
Age	25-35	26	44.1%
	36-45	19	32.2%
	46-55	8	13.6%
	56-65	6	10.2%
Gender	male	46	78%
	female	13	22%
Experience	<5years	23	39%
	5-10years	13	22%
	11-15years	10	16.9%
	>15years	13	22%
Workplace	govt hospital	22	37.3%
	private hospital	19	32.2%
	both	18	30.5%

KNOWLEDGE ATTITUDE AND PERCEPTION OF ENT SPECIALISTS

Most ENT specialists demonstrated awareness of vestibular rehabilitation (VR), with 96.6% reporting knowledge of its role and only 3.4% unaware. Regarding peripheral vestibular disorders, 91.5% knew that physiotherapists are trained to provide VR, while 8.5% did not. Additionally, 88.1% agreed that VR improves dizziness, balance, and quality of life, whereas 11.9% disagreed. Familiarity with standard VR treatments was reported by 83.1%, while 16.9% were unfamiliar. Overall knowledge was categorized as average in 94.9% (n = 56) of participants and poor in 5.1% (n = 3), with a median score of 2 and an IQR of 0, indicating consistent knowledge levels. Perceptions toward VR and interprofessional collaboration were largely positive. 83.1% agreed physiotherapists can effectively manage vestibular disorders, and 91.5% supported both routine inclusion of VR in ENT care and collaboration with physiotherapists, with 8.5% disagreeing. 86.4% believed lack of collaboration negatively affects outcomes, and 94.9% supported additional seminars and CME programs. Regarding referrals, 81.4% favored referring patients with persistent symptoms to physiotherapists, 88.4% preferred collaborative management, and 74.6% believed physiotherapists can independently progress treatment, while 25.4% disagreed. Overall, attitudes toward physiotherapy were positive: 86.4% viewed physiotherapists as essential in vestibular care, 89.8% considered physiotherapy effective, 81.4% believed physiotherapists have appropriate skills, 83.1%–88.1% recognized their importance in management, and 91.5% agreed they play a crucial role in improving patients' quality of life.

Table 2: Knowledge Attitude and Perception of ENT Specialists Regarding VRT

Description	Yes		No	
	Frequency	Percentage	Frequency	Percentage
Do you know about vestibular rehabilitation	57	96.6	2	3.4
Do you know that physiotherapists are trained to provide vestibular rehabilitation for peripheral vestibular disorders (e.g., BPPV, unilateral vestibular hypo function)	54	91.5	5	8.5
Do you know vestibular rehabilitation performed by physiotherapists can improve dizziness ,balance and quality of life	52	88.1	7	11.9
Are you familiar with common vestibular rehabilitation techniques (gaze stabilization, balance exercises, habituation, canalith repositioning maneuvers if done by physio)	49	83.1	10	16.9
Do you believe physiotherapists are competent to treat vestibular disorders	49	83.1	10	16.9
Should vestibular rehabilitation be included as a routine part of ENT practice	54	91.5	5	8.5
Should ENT specialists and physiotherapists collaborate in vestibular patient care	54	91.5	5	8.5
Do you think lack of collaboration reduces treatment outcomes	56	94.9	8	13.6
Do you agree that more workshops and CME are needed for vestibular rehabilitation	48	81.4	3	5.1
Do you consider that referral to a physiotherapist is an essential part of management for patients with persistent dizziness/imbalance after initial ENT assessment?	52	88.4	11	18.6
Do you prefer managing vestibular patients in collaboration with physiotherapists rather than managing them alone?	44	74.6	7	18.6

Do you believe that physiotherapists can make independent clinical decisions about exercise progression and home program adjustment for vestibular patients	51	86.4	15	25.4
I believe physiotherapists play an important role in the management of vestibular disorders	51	86.4	8	13.6
Physiotherapy is an effective treatment option for patients with vestibular dysfunction	53	89.8	6	10.2
I think physiotherapists have adequate skills to manage patients with balance and dizziness problems	48	81.4	11	18.6
I consider physiotherapy as supportive treatment rather than a primary treatment for vestibular rehabilitation	49	83.1	10	16.9
In my perception, ENT specialists and physiotherapists should work collaboratively in vestibular rehabilitation	52	88.1	7	11.9
Physiotherapists are essential in improving patients' quality of life with vestibular disorders	54	91.5	5	8.5

Barriers To Referral And Strategies For Improving Inter Professional Collaboration For Vestibular Rehabilitation

Participants identified multiple barriers to referral for vestibular rehabilitation. A total of 66.1% agreed (39%) or strongly agreed (27.1%) that there are not enough physiotherapists with vestibular rehabilitation training, while 61.1% agreed (49.2%) or strongly agreed (11.9%) that there are insufficient qualified physiotherapists. Regarding access issues, 47.5% agreed (40.7%) or strongly agreed (6.8%) that lengthy wait times or limited access deter referrals, whereas 47.5% were neutral or disagreed. Additionally, 23.7% agreed (16.9%) or strongly agreed (6.8%) that they had limited confidence in the efficacy of physiotherapy for vestibular conditions, while 39% were neutral and 37.3% disagreed. Patient-related barriers were notable, with 66.1% agreeing (47.5%) or strongly agreeing (18.6%) that patients lack motivation to attend multiple sessions. Institutional or administrative constraints were identified by 59.3% (agree 50.8%, strongly agree 8.5%), while 35.7% were neutral or disagreed. There was strong support for improving interprofessional collaboration. Routine interprofessional case discussions were supported by 83% (agree 52.5%, strongly agree 30.5%), with 8.5% neutral and 8.5% disagreeing. Joint training workshops and CME sessions were supported by 81.3% (agree 54.2%, strongly agree 27.1%), while 10.2% were neutral and 8.5% disagreed. The creation of shared clinical protocols or referral pathways was endorsed by 83% (agree 59.3%, strongly agree 23.7%), with 8.5% neutral and 8.5% disagreeing. Furthermore, 89.8% agreed (59.3%) or strongly agreed (30.5%) that hospital management should establish guidelines promoting cooperative care and joint referrals, whereas 5.1% were neutral and 5.1% disagreed.

Table Barriers To Referral And Strategies For Improving Interprofessional Collaboration For Vestibular Rehabilitation

Question about Barriers	Answer	Frequency	Percentage
There are not enough physiotherapists trained in vestibular rehabilitation	strongly disagree	5	8.5%
	disagree	5	8.5%
	neutral	10	16.9%
	agree	23	39%
	strongly agree	16	27.1%
There are not enough physiotherapists trained in vestibular rehabilitation.	strongly disagree	6	10.2%
	disagree	5	8.5%
	neutral	12	20.3%
	agree	29	49.2%
	strongly agree	7	11.9%
Long waiting times or poor access to physiotherapists discourage referral.	strongly disagree	2	3.4%
	disagree	3	5.1%
	neutral	26	44.1%
	agree	24	40.7%
	strongly agree	4	6.8%
I have limited confidence in the effectiveness of physiotherapy for vestibular disorders.	strongly disagree	6	10.2%
	disagree	16	27.1%
	neutral	23	39%
	agree	10	16.9%
	strongly agree	4	6.8%
Patients are often not motivated to attend multiple physiotherapy sessions.	strongly disagree	3	5.1%
	disagree	4	6.8%
	neutral	13	22%
	agree	28	47.5%
	strongly agree	11	18.6%
Institutional or administrative barriers (policy, bureaucracy) prevent referral.	strongly disagree	4	6.8%
	disagree	5	8.5%
	neutral	15	25.4%
	agree	30	50.8%
	strongly agree	5	8.5%
Regular interprofessional case discussions between ENT specialists and	Strongly disagree	4	6.8%
	disagree	1	1.7%
	neutral	5	8.5%
	agree	31	52.5%

physiotherapists can enhance patient outcomes in vestibular rehabilitation.	strongly agree	18	30.5%
Joint training workshops and CME sessions on vestibular. disorders should include both ENT and physiotherapy professionals.	Strongly disagree	5	8.5%
	disagree	0	0
	neutral	6	10.2%
	agree	32	54.2%
	strongly agree	16	27.1%
Establishing shared clinical protocols or referral pathways will help improve coordination between ENT and physiotherapy departments	Strongly disagree	2	3.4%
	disagree	3	5.1%
	neutral	5	8.5%
	agree	35	59.3%
	strongly agree	14	23.7%
Hospital administration should develop policies that encourage joint referrals and collaborative patient management	Strongly disagree	2	3.4%
	disagree	1	1.7%
	neutral	3	5.1%
	agree	35	59.3%
	strongly agree	18	30.5%

Discussion

This study examined the knowledge, attitudes, and perceptions of ENT specialists regarding physiotherapy in vestibular rehabilitation (VRT) within the Hazara region of Pakistan. The findings demonstrate that the majority of participants possess average knowledge, alongside highly positive attitudes (88.1%) and perceptions (84.7%) toward physiotherapy involvement. Despite this encouraging trend, significant systemic and practical barriers continue to impede effective interprofessional collaboration.

The high level of knowledge observed (94.9%) reflects an increasing awareness of vestibular rehabilitation as an evidence-based intervention. These findings are consistent with contemporary literature emphasizing improved dissemination of clinical guidelines and rehabilitation knowledge[15, 16] . Compared to earlier studies reporting moderate knowledge gaps among ENT specialists[17] , the present findings suggest a progressive shift in medical education and professional exposure. However, the persistence of a small proportion with poor knowledge (5.1%) indicates that knowledge dissemination remains incomplete.

Attitudinal findings reveal strong support for multidisciplinary care, with 91.5% of respondents endorsing collaboration between ENT specialists and physiotherapists. This aligns with evidence demonstrating that interprofessional collaboration enhances patient outcomes and healthcare efficiency[18]. However, a critical observation is the discrepancy between positive attitudes and actual referral practices, a phenomenon also reported by Yardley et al.[19], where physicians acknowledged benefits but demonstrated low referral rates. This gap suggests that favorable attitudes alone are insufficient to drive behavioral change in clinical practice.

Perceptions regarding the effectiveness of physiotherapy were also notably positive, with 89.8% recognizing its therapeutic value. This perception is strongly supported by systematic reviews demonstrating significant improvements in dizziness, balance, and quality of life following VRT[15, 16]. The alignment between perception and evidence indicates that ENT specialists are increasingly guided by evidence-based understanding. Nevertheless, a subset of participants expressed uncertainty regarding physiotherapy effectiveness, highlighting the need for enhanced clinical exposure and feedback mechanisms.

Despite these strengths, several barriers were identified. Workforce limitations emerged as the most significant challenge, with 66.1% of respondents reporting a shortage of physiotherapists trained in vestibular rehabilitation. This finding is consistent with global evidence indicating insufficient specialized rehabilitation services in resource-limited settings[20]. Additionally, institutional and administrative barriers (59.3%) reflect systemic inefficiencies, including complex referral pathways and lack of supportive policies, as described in Cabana et al.'s framework on barriers to guideline adherence[21].

Patient-related factors, particularly lack of motivation (66.1%), also play a critical role in limiting referral practices. This suggests that clinical decision-making is influenced not only by professional knowledge but also by anticipated patient compliance. Evidence indicates that patient education and shared decision-making can significantly improve adherence to rehabilitation programs[22].

The study further highlights actionable strategies to enhance interprofessional collaboration. Strong support was observed for joint training workshops (81.3%), shared clinical protocols (83%), and institutional policies promoting collaboration (89.8%). These findings align with research demonstrating that interprofessional education significantly improves collaborative practice and patient outcomes [18, 23]. Implementation of structured referral pathways and standardized communication systems may reduce variability in practice and improve care coordination.

From a clinical perspective, the findings indicate readiness for integration of physiotherapy into routine ENT practice. The high percentage (81.4%) recognizing referral as essential for persistent symptoms provides a strong foundation for developing standardized care pathways. At a policy level, investment in workforce development, specialized training programs, and institutional reforms is necessary to address systemic barriers.

This study contributes to existing literature by providing region-specific insights from a developing healthcare context. However, limitations include its cross-sectional design, small sample size, and reliance on self-reported data, which may limit generalizability and introduce bias. Future research should incorporate longitudinal designs and objective measures of referral practices to better understand causal relationships.

CONCLUSION

In conclusion, while ENT specialists demonstrate average knowledge, positive attitudes, and favorable perceptions toward physiotherapy in vestibular rehabilitation, a significant gap remains between awareness and implementation. Addressing workforce shortages, institutional barriers, and patient-related challenges through targeted interventions and policy reforms is essential to optimize multidisciplinary care and improve patient outcomes.

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