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Awareness About the Necessity of Vestibular Rehabilitation Education Among Physical Therapists Working in Saudi Arabia

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ABSTRACT

Background: A physical therapist plays an integral role in vestibular rehabilitation, which is a form of therapy that addresses problems related to the inner ear and brain structures that control balance and coordination.

Objective: This study aimed to report the awareness about the necessity of vestibular rehabilitation education and the satisfaction with the current vestibular rehabilitation situation among physical therapists working in Saudi Arabia.

Methods: A self-administered online questionnaire consisted of two sections: one contained demographic information, and the other had questions related to the knowledge and education of physical therapists regarding vestibular rehabilitation in the country, as well as the experience and satisfaction of physical therapists.

Results: A total of 235 participants participated in the online survey conducted between September and December of 2022. This study found that most participants (85.96%) learned about vestibular rehabilitation from courses, workshops, and lectures. A little more than half of the participants (56.60%) reported never seeing vestibular referral cases, whereas less than half (46.15%) rarely examined and treated patients with vestibular disorders. The majority of the participants (65.53%) reported that a lack of knowledge, lack of referrals, and lack of equipment prevented them from performing vestibular examinations. Furthermore, the majority of participants (59.57%) are not satisfied with the current vestibular rehabilitation situation.

Conclusion: The current study reported that there is a lack of knowledge, referrals, and equipment that prevent Saudi Arabian physical therapists from performing vestibular examinations which results in dissatisfaction with the current vestibular rehabilitation situation.

Keywords: *Vestibular Rehabilitation, Education, Physical Therapists, Saudi Arabia*

INTRODUCTION

Vestibular disorders are common and often include challenging complaints such as dizziness and postural instability. Approximately 20% to 30% of the general population is affected by dizziness and vertigo (1), and the prevalence of dizziness in Saudi Arabia is about 43% (2). Almost 49.9% of elderly Saudis had experienced one or more falls during a 12-month period (3). Similarly, around 35% of U.S. adults age 40 years and older had evidence of balance dysfunction (4). Dizziness, vertigo, and disequilibrium are symptoms that can result from peripheral or central vestibular disorders (5). Peripheral vestibular disorders such as benign paroxysmal positional vertigo, chronic labyrinthitis or vestibular neuronitis, and related balance impairments constitute the main diagnostic category in Saudi Arabia, North America, Europe, and Japan, with differences in percentage (6-8).

Management of vestibular dysfunctions includes medications, surgery, and vestibular rehabilitation (VR), which is a specialized form of physical therapy that assists patients with balance disorders and other challenges related to their vestibular system. The use of VR therapy can significantly improve the quality of life for people suffering from vestibular disorders, including vertigo, dizziness, and motion sickness (9). VR is considered a safe and effective treatment for the peripheralvestibular disease (1). In addition, it is a valid treatment for dizziness and imbalance due to incomplete compensation after peripheral vestibular or central nervous system injuries or complications which result from the medical or surgical treatment (10). Patients with vestibular dysfunctions that cannot be treated with medications or surgery could be candidates for VR (10, 11). VR is not only useful for vestibular disorders, but it may also be useful in reducing fall risk even for dizzy patients without documented vestibular deficits (12). Whitney et al. concluded that individuals with peripheral and central vestibular dysfunction can benefit from physical therapy (13).

According to clinical practice guidelines provided by The American Physical Therapy Association, “clinicians should offer vestibular rehabilitation to patients with unilateral and bilateral vestibular hypofunction” (14). Since VR should be offered for patients with unilateral and bilateral vestibular hypofunction and is scientifically based, as well as being a clinically valid treatment for patients with vestibular disorders, it therefore becomes a necessity everywhere. According to a study conducted in Korea in 2020, the findings indicated that 75.6% of physical therapists did not receive VR education, and 68.2% of them responded to the necessity of VR education (9). Although VR has been shown to be effective, many people are unaware of its importance and benefits. Thus, it is important to educate the public, especially health care providers about the necessity of VR, its benefits, and how to access it. This is because this lack of awareness can result in delayed diagnosis and treatment, which potentially leads to a longer recovery period and a lower chance of full recovery. Furthermore, health care providers should also be trained to recognize vestibular disorders and refer their patients to qualified vestibular therapists. Additionally, increased awareness about VR can reduce the risks associated with balance disorders and encourage more people to seek treatment. To this extent, VR education can improve the lives of millions of people suffering from vestibular disorders and help them regain their balance, independence, while simultaneously improving their quality of life. Unfortunately, the current status of practicing VR among physical therapists in Saudi Arabia is not clear. Therefore, in our study, we aimed to identify the awareness and current status of physical therapists regarding VR and to discuss the necessity of VR education in Saudi Arabia.

METHODS

Study design, setting, and participants

This cross-sectional study was conducted using a snowballing sampling technique to invite the participants for the study, with the intention of reaching out to as many physical therapists as possible. Physical therapists working as clinicians and practicing in Saudi Arabia with licensure to practice physical therapy from Saudi Commission for Health Specialties were invited to participate in this study. The participants were invited through personal communication and social media channels to fill out an online questionnaire. Physical therapists with at least a bachelor's degree in physical therapy, working in private or government hospitals or clinics, and known to have clinical experience were included in the study. The study excluded physical therapy

students, interns, physical therapy technicians, and non-practicing physical therapists. The purpose and plan of this study were presented on the first page of the online questionnaire. All physical therapists participating in the study provided informed consent by clicking on the 'accept' button found on the online questionnaire. The Local Research Ethics Committee (LREC) at the University of Tabuk approved the study before the data collection (UT-220-76-2022), which was conducted from September 2022 to December 2022. It met the requirements for ethical approval standards based on the rules and regulations of the National Committee on Bioethics (NCBE). The survey was sent to a total of 500 physical therapists with the inclusion criteria of which 235 responded, resulting in a response rate of 47%.

Questionnaire

The questionnaire was developed by a team of experts in vestibular management consisting of a primary investigator and two senior physical therapists before being piloted among 15 physical therapists prior to distribution. The questionnaire consisted of two sections including demographic information and section two comprised questions related to the vestibular education of Saudi physical therapists. This also consisted of questions regarding the participants' experience and satisfaction.

Validity, reliability, and analysis

To ensure the internal validity of the survey, we conducted a pilot study among a randomly selected group of 15 participants. We solicited feedback from these participants and based on their responses, no significant modifications were made to the survey questions. In order to assess the internal consistency of the survey, we calculated Cronbach's alpha, which measures the degree of shared variance or covariance among the items comprising an instrument relative to the total amount of variance. Cronbach's alpha for our survey was calculated to be 0.84, indicating a high level of reliability. Based on the categorical variables included in the study, we employed a chi-square test to generate descriptive statistics for the study participants. All analyses were performed using SAS statistical software version 9.4 (SAS Institute Inc. Cary, NC).

RESULTS

A total of 235 individuals participated in the current study with nearly half of them (48.09%) aged between 22 and 25 years old, with the males accounting for 60% of the participants. The majority of the participants (77.02%) held a bachelor's degree in physical therapy, while (83.83%) did not hold a vestibular certificate qualification. Nearly half of the participants reported working at governmental hospitals (48.09%) and approximately one-third of them (38.72%) spent less than a year in clinical practice. Similarly, nearly half of the participants reported not practicing VR (55.74%) and almost one-third of them were engaged in practice for less than a year (29.79%). A large proportion of the participants worked as general physical therapists (62.98%), while a few of them were specialized as shown in Table 1.

The mean score for vestibular awareness was 8.8, closer to the highest possible score (10) which indicates the high level of awareness among participants as shown in Table 2. Slightly more than half of the participants reported not having the proper equipment for performing vestibular examinations and treatment at their workplace (51.49%). The majority of the participants reported learning about VR through courses, workshops, and lectures (85.96%). It was also discovered that slightly less than half of the participants (46.15%) reported rarely examining and treating individuals with vestibular disorders, while slightly more than half of them conveyed that they had never received vestibular referral cases (56.60%). A large proportion of the participants reported that the reasons preventing performing vestibular examinations were a combination of a lack of knowledge, referrals, as well as equipment (65.53%). More than half of the participants are not satisfied with the current situation of vestibular rehabilitation, 59.57% of them reported that they are disagree and strongly disagree based on their responses to the question regarding this as shown in Table 2.

TABLE 1: Characteristics of the participants

Variables	**N (%)[1]**
Age	
22-25	113 (48.9)
26-30	66 (28.09)
31-35	30 (12.77)
36-40	11 (4.68)
Older than 40	15 (6.38)
Gender	
Male	141 (60)
Female	94 (40)
Clinical field	
Cardiopulmonary/Geriatric/oncology	7 (2.98)
General PT	148 (62.98)
Musculoskeletal	52 (22.13)
Neurology	12 (5.11)
Pediatric	16 (6.8)
What is your work setting?	
Both government hospital and private	3 (1.28)
Governmental hospital	113 (48.09)
Private hospital/physical therapy clinic	100 (42.55)
University hospital	19 (8.09)
Do you currently hold any certificate(s)/qualification(s) in vestibular rehabilitation?	
Yes	38 (16.17)
No	197 (83.83)
1 sample size and percentage N(%)	

TABLE 2: Questions regarding vestibular education and satisfaction from physical therapists working in Saudi Arabia

Questions	**N (%)[1]**
Does your practice setting include equipment for examining and treating vestibular disorders?	
Yes	58 (24.68)
No	121 (51.49)
Maybe	42 (17.87)
I don’t know	14 (5.96)
How did you learn about vestibular rehabilitation?	
As part of a course in the university/workshop/lecture/self	16 (6.81)
Courses/lectures/workshop	202 (85.96)
None	17 (7.23)
How long have you been in clinical practice?	
1-2 years	55 (23.40)
3-4 years	29 (12.34)
5-6 years	11 (4.68)
Less than 1 year	91 (38.72)
More than 6 years	49 (20.85)
How long have you been practicing vestibular rehabilitation?	
Never	131 (55.74)
1-2 years	13 (5,53)

3-4 years	8 (3.40)
5-6 years	2 (0.85)
Less than 1 year	70 (29.79)
More than 6 years	11 (4.68)
How often do you assess and treat patients with vestibular disorder?	
Always	5 (4.81)
Never	25 (24.04)
Often	9 (8.65)
Rarely	48 (46.15)
Sometimes	17 (16.35)
How often do you receive referrals from physicians for vestibular?	
Always	4 (1.70)
Never	133 (56.60)
Often	9 (3.83)
Rarely	68 (28.94)
Sometimes	21 (8.94)
I believe physical therapists should learn about vestibular rehabilitation.	
Courses/lectures/workshop	29 (12.12)
during postgraduate studies	26 (11.06)
during undergraduate studies	181 (77.02)
To which degree did you study vestibular rehabilitation?	
Bachelor's Degree	123 (52.34)
Master's Degree	11 (4.68)
Doctor Physical Therapy (DPT)	7 (2.97)
What is your highest earned academic degree?	
Bachelor's Degree	181 (77.02)
Master's Degree	29 (12.34)
Doctoral Degree	15 (6.38)
Doctor of Physical Therapy (DPT)	10 (4.26)
Which of the following prevent physical therapists from practicing vestibular rehabilitation?	
Lacking equipment	10 (4.26)
Lacking knowledge	26 (11.06)
Lacking referrals	44 (18.72)
Lacking knowledge/Lacking referrals/Lacking equipment	154 (65.53)
Don't know	1 (0.43)
I am satisfied with the current situation of vestibular rehabilitation in Saudi Arabia.	
Strongly agree	2 (0.85)
Agree	11 (4.68)
Neutral	82 (34.89)
Disagree	77 (32.76)
Strongly disagree	63 (26.81)

Awareness score	
Mean, median, and (standard deviation)	8.8, 9, (1.5)
1 sample size and percentage N(%)	
Likert scale score range from 1 to 10	
Strongly Disagree=1, Disagree=2, Neutral=3, Agree=4, and Strongly Agree=5	

DISCUSSION

The current study emphasizes the significance of educating and raising awareness about VR in Saudi Arabia, which is essential for patients with vestibular disorders. This study also emphasizes the value of educating medical professionals and patients about the advantages of VR therapy and its potential to enhance the quality of life.

According to previous research that suggested vestibular exercise improved vertigo and dizziness symptoms, postural control, and quality of life, it is clear that VR is an effective intervention for patients with postural dysfunction (15). Furthermore, there is substantial evidence that patients with peripheral vestibular dysfunction not only benefit from using VR, but they also feel safe doing so (16). In a recent systematic review, VR therapy was considered to be a widely recognized treatment option for patients suffering from vestibular dysfunction (17).

The study at hand reported that the majority showed discontentment with the current situation of VR in Saudi Arabia. According to a recent study conducted by Alshemary et al., medical professionals in Saudi Arabia have made commendable contributions to scientific research, but research on medical education, specifically related to vestibular disorders, is still lacking (18). This highlights the need for further research and investment in promoting vestibular education.

Our study cited that 85.96% learned about VR through workshops and lectures, while only 16% learned VR as part of a university course. Similar results were reported in an international survey of VR, wherein physical therapists were recruited from 19 countries. The majority (69%) learned about VR during education courses, 26% learned at work, and 80% reported no training in VR at the entry-level (11). Another study found that 53% of the respondents received no VR education during their professional degree program (10). This focuses on the necessary need for physical therapists to learn about VR during their undergraduate studies.

A significant number of barriers to VR in Saudi Arabia were reported in a recent study. Almost 51.5% of physical therapists reported a lack of the necessary equipment to examine and treat vestibular disorders. Similarly, Meldrum D et al. cited a lack of accessibility to equipment as a barrier (19). Among the respondents in our study, a large proportion (55.74%) said they rarely practiced VR, and 46.15% scarcely assessed and treated patients with vestibular disorders. Moreover, a study conducted among medical doctors revealed that only 4.1% of physical therapists were engaged in the assessment, and only 13% were involved in the treatment of common vestibular conditions (20). According to these data, we can infer that a large proportion of physical therapists failed to practice VR as a result of these barriers of a lack of equipment and professional knowledge.

Our study disclosed interesting results about physician referrals for vestibular disorders, in which only 28.94% of physical therapists rarely received referrals while 56.60% never received any referral at all. Likewise, evidence showed a low rate of referrals to physical therapists by medical doctors. Of 193 medical doctors, only 27 referred patients to physical therapists for VR. This study further proclaimed that only 2.7% of doctors acknowledged the role of physical therapists in the treatment of common vestibular conditions (20). A possible explanation for this might be the lack of awareness and knowledge among medical doctors regarding the role and expertise of physical therapists in VR.

This study had limitations and an example of such is the sampling strategy used for data collection, which was a non-probability sampling method. As a result, the findings of the study may not be generalizable to the entire population and may only be representative of the specific sample that was included in the study. Similarly, the questionnaire did not include questions to assess the physical therapists' knowledge of VR.

CONCLUSION

The current study reported that there is a lack of knowledge, referrals, and equipment that prevent Saudi Arabian physical therapists from performing vestibular examinations which results in dissatisfaction with the current VR situation.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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Informed Consent Statement

All participants in the study provided informed consent by clicking on the accept button on the online questionnaire.

Author Contributions

AA Albalwi and AA Alharbi proposed the study, developed the questionnaire, collected the data, and wrote the manuscript. MR contributed to the statistical analysis and manuscript writing. NA, FA, RA, AS Alatawi contributed to the study proposal, collected the data, and reviewed the manuscript. All authors agreed to be accountable for the presented work.

Data Availability Statement

The datasets used and analyzed during the current study are available from the corresponding author upon reasonable request.

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