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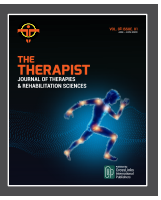

Original Article

Vital Signs Monitoring in Outpatients Physical Therapy in Various Cities of Pakistan

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ABSTRACT

Every time a new patient or client visits, their vital signs should be taken, according to the American Physical Therapy Association (APTA). Taking vital indicators such as blood pressure, heart rate, breathing rate, and body temperature is part of a physical therapist's professional decision-making process. **Objective:** To determine the frequency of vital signs monitoring in outpatients physical therapy practice. **Methods:** A descriptive cross-sectional study was conducted in physical therapy departments of different clinical settings. Data were collected through 12 items survey questionnaire from physical therapist, which was then analyzed by SPSS version 2022.The frequency of monitoring of vital signs by physical therapist was measured by using frequency tables. Association was seen with the help of chi-square test. **Results:** In this survey study, 12 items and 300 respondents were included to find out the frequency of physical therapist who monitor vital signs in their daily practice. The results suggested that 56.7% respondents monitor vital signs, 27.3% respondents monitor vitals only when there is an indicted or diagnosed cardiovascular condition and 16.0% respondent do not monitor vital signs. There is a significant relation that vital signs are neglected due to time constraints in daily practice with p-value less than 0.05. **Conclusions:** This study demonstrated that vital signs are being monitored by most of the physical therapist. Further studies need to conducted and better stratify risk factors for different conditions to better determine when exercise and activity may be at risk.

INTRODUCTION

The first series of clinical examinations consists of evaluating the patient's vital signs. Vital signs indicate to the physician how much a patient has departed from the norm, which is why they are used to rank patients in urgent/prompt care or emergency departments [1]. Healthcare practitioners must understand how to appropriately interpret these sets of measures and be aware of the numerous physiological and pathological processes that influence them [2]. The degree of abnormalities in a patient's vital signs can also serve as a reliable predictor of the patient's long-term health, frequency of ER visits, risk of readmission to the hospital, and utilization of medical resources [3]. Physical therapists must make the decision to take vital signs as part of their multifaceted clinical decision-making process [4]. It can consider factors such as the personal traits of the physical therapists, the type of choice, and the circumstances surrounding the decision [5]. Vital signs should be included in a comprehensive risk assessment rather than being limited to their use as a screening tool for clinical deterioration [6]. Vital signs are a useful tool for evaluating a patient's overall cardiopulmonary function [7]. Evaluating whether a patient's condition permits physical activity or whether their cardiopulmonary condition

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necessitates a change in their course of treatment, which may involve referring them to a different medical specialist [8]. Vital indicators such as temperature, respiratory rate (RR), blood pressure (BP), and pulse rate (PR) are often assessed in physical therapy settings and can be specifically applied when needed [9]. As one of the minimal competences for physical therapists, the American Physical Therapy Association (APTA) states that taking a patient's or client's vital signs should be done each time they visit [10]. Nevertheless, current studies reveal that routine evaluation is not a common practice in physical therapy, with less than half of therapists conducting vital sign checks for the majority of patient sessions [5]. Physical therapists are licensed medical professionals who work in a range of settings, including outpatient rehabilitation facilities, hospitals, schools, nursing homes, and support organizations, according to the American Physical Therapy Association's "Guide to Practice" [11, 12]. In addition to helping patients move more smoothly, they also listen to their complaints and try to lessen their suffering (American Physical Therapy Association (APTA), 2015 [13]. Physical therapists have additional autonomy because patients may not need a referral to start physical therapy [8]. The most fundamental, reasonably priced, and probably most important information obtained about a patient in a clinical context is their vital signs [13]. Additionally, they are a crucial component of various "track and trigger systems" and early warning scores, which are already common practices in many nations for the identification of clinical deterioration [14, 15].

In accordance with the guidelines outlined by the American Physical Therapy Association (APTA) in 2014, it is strongly recommended that vital signs be screened prior to initiating physical therapy. Given the significance of these guidelines, it is imperative for physical therapists to diligently monitor vital signs, particularly in outpatient physical therapy departments. The purpose of this study was to find out whether physical therapists really monitor vital signs or vital signs are not given due significance by them.

METHODS

Descriptive cross sectional study was conducted after obtaining the approval from Institutional Review Board of Women Institute of Rehabilitation Sciences, Abbottabad (reference no.1834 , date of issuance 13-02-23). Raosoft software was used to calculate sample size. Population was assumed to be 20 thousand with 95% of confidence interval. Study setting was Women Institute of Rehabilitation Science, Abbottabad. Convenience Sampling Technique used as sampling technique with sample size of 377 in total. Study duration was 6 months, in inclusion criteria clinical Physiotherapist both male and female were included in the study. On contrary, Physiotherapist working online academic side, unemployed and home care physiotherapists were excluded. The institutional review board approved the research proposal that was presented during the data gathering process. Data were gathered from specific physiotherapists who met the study's eligibility requirements. Prior to gathering data, each physiotherapist was informed about the project and given their consent. Each participant received a self-administered questionnaire, which they completed on their own. The information was gathered via Google Forms and from the following sources: Combined Military Hospital, Jinnah International Hospital Abbottabad, DHQ Abbottabad, DHQ Haripur, Basil Clinic Haripur, Chaudhary Medical Center Haripur, Frontier Medical Institute Abbottabad, Elaj Private Limited, Ibn-Sina Hospital, Saddique Physiotherapy Center, Allama Iqbal Hospital, IDC, Abbottabad, Pak Irish Rehabilitation Center, Aqsa physiotherapy center Haripur, Helping Hand Institute of Rehabilitation Sciences Mansehra, Alghazi folij center Haripur, and Ibn-Sina Hospital. Data were analyzed through SPSS version 2022. The collected data were coded manually organized and categorized into percentages and then frequency tables were made. The descriptive statistical approaches were used to find out the frequency variables. Chi square was used to find out the association.

RESULTS

Total 300 physiotherapist were included in this study out of which 159(53.0%) were females and 141(47.0%) were males, which shows the majority of participants were females shown in table 1.

Table 1: Gender distribution

Gender	Frequency (%)
Female	159 (53.0)
Male	141 (47.0)
Total	300 (100.0)

Table 2 shows that 219 (73.0%) the physiotherapist in our survey were DPT graduates, and 81 (27.0%) were MSPT* masters in physical therapy, indicating that the majority of physiotherapists were DPT graduates.

Table 2: Qualification of physical therapist

Qualification	Frequency (%)
Graduation (DPT)	219 (73.0)
Masters (MS)	81 (27.0)
Total	300 (100.0)

Table 3 tells about the most appropriate definition of vital signs according to physical therapists. Out of 300 PTs, 50(16.7%) PTs were of the view that it is “signs and

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symptoms of a disease", 13(4.3%) PTs are of the view that it is "a part of human composition" and 237(79.0%) PTs were of the view that it is "an indication of basic body function."

Table 3: Most appropriate definition of vital signs

Vital Signs	Frequency (%)
Signs and symptoms of disease	50 (16.7)
A part of human composition	13 (4.3)
An indication of basic body function	237 (79.0)
Total	300 (100.0)

Table 4 shows that 170 (56.7%) PTs take vital signs in their daily practice. 48 (16.0%) do not take vital signs and 82 (27.3%) monitor vital signs sometimes.

Table 4: Frequency of taking vital signs

Variables	Frequency (%)
Yes	170 (56.7)
No	48 (16.0)
Sometime	82 (27.3)
Total	300 (100.0)

Table 5 shows that most frequently measured vital signs, 84 (28.0%)blood pressure being the most monitored vital sign, followed by temperature 19 (6.3%), pulse 15 (5.0%) and respiratory rate 8 (2.7%). Whereas most of the PTs stated that they measure all the below mentioned vital signs equally.

Table 5: Measurement of vital signs in practice

Variables	Frequency (%)
Physiotherapist who don't take vital signs	45 (15.0)
Temperature	19 (6.3)
Pulse	15 (5.0)
Respiratory rate	8 (2.7)
Blood pressure	84 (28.0)1
All of the above	29 (43.0)
Total	300 (100.0)

Table 6 shows that 59 (19.7%) PTs thought that it is time consuming to perform vital signs ,95 (31.7%) thought that it is not time consuming to perform vital signs and 101 (33.7%) thought that sometimes it is time consuming to perform vital signs.

Table 6: Performing vital signs is time consuming

Variables	Frequency (%)
Physiotherapist who don't take vital signs	45 (15.0)
Yes	59 (19.7)
No	95 (31.7)
Sometimes	101 (33.7)
Total	300 (100.0)

Table 7 shows that 171 (57.0%) can relate vital signs to presenting disease 20 (6.7%) cannot relate, 64 (21.3%) can sometimes relate vital signs to presenting disease.

Table 7: Physiotherapists able to relate vital signs to presenting disease

Variables	Frequency (%)
Physiotherapist who don't take vital signs	45 (15.0)
Yes	171 (57.0)
No	20 (6.7)
Sometimes	64 (21.3)
Total	300 (100.0)

Table 8 shows that 34 (11.3%) thought that vital signs monitoring is neglected due to time constraints, 45 (15.0%) thought that vital signs are not neglected due time constraints, 176 (58.7) thought that vital signs monitoring is neglected sometimes due to the time constrains.

Table 8: Vital signs monitoring is neglected due to time constraint

Variables	Frequency (%)
Physiotherapist who don't take vital signs	45 (15.0)
Yes	34 (11.3)
No	45 (15.0)
Sometimes	176 (58.7)
Total	300 (100.0)

A significant relation was observed using Chi-Square Test that vital signs are neglected due to time constraints in daily practice with p value less than 0.05.

DISCUSSION

It is concluded from the study's results that not all patient scenarios include taking vital signs. Vital signs give information about a patient's health and what their expected course of treatment should be. Patients who have direct access do not need a referral to see a physical therapist. This autonomy calls for more data to inform the clinical judgment of physical therapists when it comes to vital sign assessment. Because of the high rate of undetected cardiovascular disorders and the effect exercise has on the cardiovascular system, physical therapists need to be aware of the significant risks associated with obtaining vital signs in order to make safe and optimal practice decisions. According to a 2011 research study by Graham and Clark, a physical therapist's job is to first monitor the patient's vital signs in order to establish a baseline report that can be used to measure and compare readings before and after exercise [16]. To ascertain whether the patient is reacting adequately and is suitable for exercise, baseline measurements should be taken. Therefore, the purpose of this study was to ascertain how frequently physical therapists in their separate hospital settings monitor vital signs during outpatient practices. Allen and Mulderick also conducted a survey in US assessing factors that influence vital signs assessment, sixty one physical therapist completed the survey. The result showed that 41% of respondent assessed

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a pulse, 36% obtained blood pressure, 64% obtained respiratory rate. While in this study 300 physical therapist completed the 12 item survey. The result showed that 5.0% of respondent assessed a pulse, 28% obtained blood pressure, 2.7% obtained respiratory rate and 6.3% obtained body temperature [17]. Vital signs can provide information that elucidates the immediate condition of patient in clinic. A pilot study by Peters examined the frequency of vital signs assessment by outpatient physical therapist in Florida. The majority of respondents indicated measuring vital signs 0-20% of the time during initial evaluation and regularly scheduled visits in the prior 6 months, only 24.4% of respondents reported that routine assessment of the heart rate and blood pressure during initial evaluation. The number of respondents that performed routine assessment during regular visits was even at least 13.4% for heart rate and 6.7% for blood pressure assessment [18]. While in this study out of 300 participants 56.7% respondents assessing vital signs, 16.0% respondent never obtained vital signs and 27.3 obtained sometimes or when it is indicated. A study conducted by Smith et al., suggested that Vital signs were documented on only 29 occasions over 134 therapy sessions. No correlation was found between comorbidities and VS assessment [19]. Whereas this study suggests that 56.7% respondents are assessing vital signs and shows significant relation that vital signs are neglected due to time constraints in daily practice with p value less than 0.05. Another study conducted by Millar et al., suggested that of the 74 patient sessions, 15 were initial visits, 54 were follow-up, and 5 were discharge sessions. Although 26% (n=19) of the patients had hypertension as a comorbidity, initial HR and BP were only taken in 2 sessions, and only once taken after exercise while this study suggests blood pressure being the most monitored vital sign and accounts for a total of 28.0% [20]. In this survey study questionnaire and 300 respondents were included to find out the frequency of physical therapist who are assessing vital signs are not, whether they are taking only one or two vitals or they thought that it is time consuming to assess vital signs in outpatient physical therapy practice. The 56.7% respondents are assessing vital signs, 27.3% respondents are assessing vital only when indicted or diagnosed cardiovascular condition and 16.0% respondent are refused to assess vital signs. 43.0% obtained all the vital signs, 6.3% obtained temperature, 5.0% Obtained pulse, 2.7% obtained respiratory rate and 28.0% obtained blood pressure only. When we asked respondents how frequently you monitor vital signs in your OPD 52.0% respondents asses only 1 time , 21.0% are assessing 2 time before and after session, 12.0% are assessing 3 times before ,during and after session. 26.0% respondents obtained respiratory rate for 15 seconds, 32.7% respondents obtained for 30 seconds and 26.3% respondents obtained for 1 minute. 27.0% usually obtained pulse rate for 15 seconds , 34.3% obtained pulse rate for 30 seconds and 23.7% obtained pulse rate for 1 minute. At the end of the survey items we asked the respondents that is it neglected due to time constraints then 11.3% respondents said that it is always time constraints due to which vitals are neglected, 15.0% obtained that it is not time constraints and58.7% obtained that sometimes it is time constraints due to which monitoring vital signs is neglected in outpatient physical therapy practice. The implication of this study highlight the need for early reorganization as well as continues monitoring and paid attention to vital signs monitoring in outpatient physical therapy practice.

CONCLUSIONS

Based on the findings of this study, it is determined that vital signs monitoring is present in large portion of physical therapist practice, but it is also suggested that vital signs are not performed by some physical therapist in their daily practice. The high frequency of monitoring vital signs warrants frequent monitoring of vital sings by physical therapist. One of the limitation of this study is that it was difficult to meet all the Physical therapist needed for our study findings .In order to do so, a larger facilities needs to be selected. Furthermore, the study was limited to close ended answers, physical therapist detailed impressions were unable to record study. A more precise estimate of the prevalence of vital sign monitoring in outpatient physical therapy practice would come from additional experimental and controlled research. Future studies are also required to investigate if routinely monitoring vital signs leads to a reduction in adverse medical events and the identification or diagnosis of disease patterns. Our results may be useful to researchers as they offer a foundational understanding of physical therapy practice.

Authors Contribution

Conceptualization: IJ
Methodology: MK, BK, QA
Formal analysis: WA
Writing-review and editing: FB, AJ, AA

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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