



Level of Knowledge in Physical Therapy of Tunisian Physical Education Teachers

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Physical Therapy is a profession that helps to restore movement and function following an injury or illness. This study sought to identify the physical therapy knowledge of physical education teachers in Tunisia. This study is a cross-sectional study conducted on several physical education teachers in Tunisia. Participants were given the questionnaire through google forms, and they were all advised to fill it up. A predetermined selection criterion was used to select the participants. Out of 250 volunteers chosen for the study, only 152 questionnaires were selected for the final analysis. A self-administered questionnaire was developed, which includes two parts. Part I collects the demographical data, and part II contains the Knowledge of Physical Therapy. The consent form is attached with the questionnaire, and those who gave consent to use the data were included in the analysis. Collected data were analyzed using SPSS 20.0. With the alpha set for significance at <0.05. Overall, it was identified that 84% of the physical education teachers have good knowledge about Physical Therapy services. This study concluded that a more significant proportion of the physical education teachers have a good understanding of physical therapy services provided to the sports personnel in Tunisia. They have good knowledge of physical therapy techniques and services provided, and they also have good knowledge of their role in on-field and off-field management.

Keywords: *Physical therapist; physical education teachers; knowledge; physical therapy services; Tunisia.*

1. INTRODUCTION

Physical therapy is one of the healthcare professionals who evaluate, treat, and prevent disabilities. Physical therapy helps to restore movement and function following the injury or illness [1]. Physical therapist plays a significant role in prevention, restoration, and rehabilitation of injuries occurred during sports [2]. Musculoskeletal injuries are inevitable in sports participants, and it is common for both recreational players and competitive athletes. Physical therapist plays a significant role in rehabilitating injured players to bring back to their normal fitness levels following injury [3]. Depending on the type of injury, the physical therapist structures a rehabilitation program that includes stretching, strengthening, mobilization, and preventive techniques [1].

Sports injuries occur while participating in sports, which may be due to overuse or direct impact or may be due to the application of the greater force that the body can't withstand [4]. Sports injuries are harmful to an athlete's health and can result in permanent impairment or even the end of their athletic career. Injuries also put a strain on the healthcare system, as sports injury treatments are expensive and time-consuming [5]. Neglecting these injuries may be devastating and lead to a progressive increase of the damage [6]. Proper physical therapy helps in the rehabilitation and restoration of sports injuries [7].

Physical therapy services in sports on the field or off-field are not well known in Tunisia. The physical therapist has a significant role in preventing injuries in athletes and professional sports players. Coaches and Physical education teachers underutilize the role of the physical therapist and their services. Lack of professional expertise in the acute injury or the management of sports injuries and poor rehabilitation and improper training may lead to a deficit of the player's performances [8].

Sports-related injuries are a frequent reason that people cease participating in sport or recreational activities [9]. The study conducted by Sachin Allahabadi [10], has concluded that the most common sports injuries were sprains in the muscles, ligament strains, rupture of the ligaments, and fracture of the bones [10]. There are about 55% of individuals suffering from

various forms of sports injuries. The study also showed that shoulders and ankles were common injuries [11].

The main concern is a lack of knowledge about the physical therapist's role in sports rehabilitation. This study has raised the question of identifying the role of physical therapist on physical education teachers involved in sporting and athletic events [12]. There are very much limited studies which studies the awareness in coaches and physical education teachers. A similar study done by Chiwaridzo [13], showed that about 66% of sports coaches have profound knowledge of physical therapy [13]. Studies have explored the awareness of the medical personnel and high school students on physical therapy knowledge [14,15,16].

Improving the awareness about the physical therapy services is of the utmost importance for better handling of the sports injuries, prevention of injuries, rehabilitation of injuries, and make the players return to the play. This study is aimed to identify the knowledge of physical therapy among the physical education teachers in Tunisia.

2. METHODOLOGY

The study is conducted as a cross-sectional study. The study collects data from the physical education teachers in Tunisia. Participants in the study were recruited from various locations in Tunisia, so this study uses cluster sampling. Selection criteria were created before selecting the participants, and those who fell into the criteria were taken for the investigation by the blinded researcher. The selection criteria include all physical education teachers, both genders, the age group from 25-70 years, sports coaching or physical education teachers, willingness to participate in the study, and who understands English.

250 (Two hundred fifty) volunteers were recruited for the study. A self-created questionnaire was distributed to the participants through google forms. The questionnaire was a self-administered which is adapted from Chiwaridzo [13]. Which consists of part I, which collects the participants' demographic data. Part II contains the knowledge about physical therapy, their role in sports injuries, and so on... An ample amount of time was provided to the participants to send the

questions back to the authors. This questionnaire was created by a panel of senior physical therapist, sports coaches, and statisticians. This questionnaire was reviewed by two senior physical therapists who work in sports physical therapy and working with the sports team. Upon approval from them, the questionnaire was used for the study.

3. PROCEDURE

Once permission is obtained from the schools and sports centres, the study questionnaire was emailed to the physical education teachers. A questionnaire has information that details the validation of the study to participants. A clear oral explanation was also given to those who didn't understand the questions: the schools and the sports centres where the data collected for the study was kept secret. Once the questionnaires were received, a small thank you note was sent to every participant of this study. A total of 250 questionnaires were dispatched, and 179 were received back. One hundred fifty-six questionnaires received were filled up, so others

were ruled out due to incomplete submission, missing information, not mentioning appropriate data, and double-entry over the questions. Of 156 participants, four were not given consent, so this study uses 152 questionnaires and analysed. Descriptive statistics were used to analyse the data.

4. RESULTS

The results were calculated using descriptive statistics with SPSS 20.0. Table 1 shows the demographic analysis, table 2 shows the specialist in sports, and Table 3 shows the knowledge about the physical therapist by the coaches and physical education teachers.

Table 2 shows the participants specialization in the sports events, the majority of this study participants are team sports, it was noted about 65% are training team sports and 35% training individual events. It was also noted that their participants have high knowledge on the physical therapy services in both the team events and the individual events.

Table 1. Demographical analysis

S. N	Demographic Analysis	No of participants	Frequency
1	Gender		
	Male	79	52%
	Female	73	48%
	Age classification		
	20—25	1	1%
	26—30	15	10%
	31—35	39	26%
2	36—40	37	24%
	41—45	25	16%
	46—50	20	13%
	> 50	15	10%
	Educational		
3	Diploma	3	2%
	Bachelor	114	75%
	Master	26	17%
	Doctorate	9	6%
	Sports Training Certificate		
4	Yes	67	44%
	No	85	66%
	Number of years in Coaching		
	1—5 yrs	47	31%
	6—10 yrs	31	20%
5	11—15 yrs	44	29%
	16—20 yrs	18	12%
	21—25 yrs	5	3%
	> 25 yrs	7	5%

Table 2. Specialist in sports

S. N	Sports Specialist	No of participants	Frequency
1	Athletics	28	18%
2	Badminton	14	9%
3	Basket ball	18	12%
4	Football	30	20%
5	Hand ball	20	13%
6	Ping pong	3	2%
7	Running	6	4%
8	Swimming	19	13%
9	Volley ball	14	9%

Table 3. Knowledge on physical therapy

S. N	Physical Therapy Knowledge	No of participants	Frequency
	Physical Therapy is about		
1	Identification and Management of acute injury.	1	1%
	Maximizing health.	6	4%
	Optimizing movement efficiency.	12	8%
	Treatment & Rehabilitation of Injury	133	87%
	Does Physical Therapy have therapeutic benefits?		
2	Yes	149	98%
	No	3	2%
	Having personally benefited from Physical Therapy		
3	Yes	108	71%
	No	44	29%
	Where does Physical therapist Work		
4	Government Hospital	34	22%
	Private Hospitals	58	38%
	Sports Centers	60	40%
	Physical therapist Gender		
5	Male/ Female	28	18%
	Both	124	82%
	Which of the following factors make a person more likely to be attended to by physical therapist?		
6	Back Pain	15	10%
	Broken Bones	26	17%
	Joint Pain	16	11%
	Ligament Injury	52	34%
	Muscle Pain	43	28%
	Sports physical therapist attends to the following areas.		
7	First Aid treatment	79	52%
	Injury Prevention	8	5%
	Injury Treatment	63	42%
	Surgery	2	1%
	The equipment used by the physical therapist includes the following.		
8	Bandages	16	10%
	Electrical Machines	16	10%
	Exercises	48	32%
	ICE	48	32%
	Training Beds	12	8%
	Walking Aids	12	8%
	Does warming up before the game and training reduce the risk of injury?		
9	Yes	151	99%
	No	1	1%

	Does Cool down before the game and training reduce the risk of injury?		
10	Yes	145	95%
	No	7	5%
	Does Strapping done before or after the game reduce the risk of injury?		
11	Yes	137	90%
	No	15	10%
	Does returning too early to play after the injury lead to re-injury?		
12	Yes	144	95%
	No	8	5%
	Does playing with injury lead to disability?		
13	Yes	127	84%
	No	25	16%
	Can the physical therapist conduct training sessions with the team?		
14	Yes	132	87%
	No	20	13%
	Physical Therapy treatment includes		
15	Education	7	5%
	Exercises	97	64%
	Massage	48	31%
	Physical therapist provide services		
	During the game matches only	3	2%
16	During the training & game matches	143	94%
	During training matches only	6	4%

Table 4. Level of knowledge

Level of Knowledge	Frequency	Male	Female	P
Inadequate	128 (84%)	65(82%)	63 (86%)	0.043
Adequate	24 (16%)	14 (18%)	10 (14%)	

Table 3 shows the knowledge about physical therapy in the study participants. It was identified that 87% have a piece of good knowledge on Physical Therapy and its uses. 52% have selected physical therapy services are essential in first aid, and 42% answered as injury management. Most of the participants answered the types of equipment used by the physical therapist. 32% has supported exercises and ICE, whereas 10 % support bandages & electrotherapy. A question was raised on warming up and cool down and its importance; most participants helped warm-up and cool down (99% & 95%). Question on the reinjury and disability was answered that 95% supports early participation cause reinjury and 84% supports long term injury cause disability. Many participants know the Physical Therapy treatments well; about 64% select exercises as a treatment measure, and 31% select massage. Regarding physical therapy services, 94% support that physical therapist are essential during and after the match.

Table 4 shows that about 84% of physical education teachers are unfamiliar with Physical Therapy services.

5. DISCUSSION

This study sought to identify the level of knowledge on physical therapy and its role in sports professionals among the physical education teachers in Tunisia. Evaluating the knowledge about physical therapy on physical education teachers have produced a positive impact. However, the studies are minimal.

This study highlights the importance of the role of physical therapy in sports and athletics. Since there are not many previous studies on assessing the knowledge, this study identifies various inputs. This study has exhibited that 98% of the physical educators have an adequate understanding of physical therapy. This is so important for the physical education teachers to advise to employ the physical therapist as a full-time or part-time based on the resources available. However, few investigations have assessed Physical Therapy awareness among the physical education teachers, although studies on others support this study [15,17,18].

This study is encouraging that about 98% of the participants have good knowledge of therapeutic approaches by the physical therapist. They are also having an awareness of their role in the treatment and rehabilitation of sports injuries. These findings have suggested that the physical educators are aware of the Physical Therapy services [19]. Although coaches and teachers have adequate conceptual knowledge about the importance of physical therapists, the service they receive is insufficient. This study shows that only 1% of the coaches have sports therapists, whereas 99% don't have. However, the reduction of the recruitment of the physical therapist may be due to financial constraints, administrative grounds, and less sponsorship. There is a need for the sports therapist who can teach to prevent, restore, and rehabilitate the injured sportsmen [20].

This study also exposed that the participants are well aware of the conditions used to treat by the physical therapist. A study done by Gbadamosi [21], 2015 has identified that managers of the soccer team have good knowledge of Physical Therapy in preventing and treating soccer-related injuries [21]. The coaches and physical educators have to insist the management appoint physical therapist in their teams and the schools to prevent, treat, and rehabilitate the sports personnel.

Less number of physical therapy professionals in the country makes them more expensive. Moreover, the physical therapist prefers to work more on the professional teams than the amateur clubs, which aids difficulty in using service [22]. So, it is always vital for the physical education teachers to know Physical Therapy services well [23]. Based on the study findings, it was inferred which there was good knowledge on the role of physical therapy in physical education teachers. The role of physical therapist is significant in preventing as well as treating injuries. In addition, they also play an essential role in the rehabilitation of the damage.

The limitations of this study are that a limited number of studies aids difficulty in comparing the results with the previous ones. This study didn't do any analysis on the influence of educational levels or the other few factors. Participants are voluntarily accepted, and many have not given concern, and the questionnaires are not returned. This study collects only the basic information about Physical Therapy services. Previous knowledge about physical therapy services is not known. An open-ended

questionnaire and Yes or no type are used in this study, and other study questionnaires need to be created to get more qualitative analysis. Future study needs to compare the sports coaches with athletes to identify their views on this topic. A larger sample size is also required.

6. CONCLUSION

This study concluded that a more significant proportion of the physical education teachers have good knowledge of physical therapy services provided to the sports personnel in Tunisia. They have a good understanding of the Physical Therapy methods and have good knowledge of various therapy services.

CONSENT AND ETHICAL APPROVAL

The institutional ethical committee approved this study. As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s), and those who gave consent to use the data were included in the analysis.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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