

## Role of extracurricular activities in the development of leadership skills among the undergraduate Doctor of Physical Therapy students of Khyber Medical University and its affiliated institutes in Peshawar: A Cross-sectional study

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### Abstract

**Objective:** To explore the role of extracurricular activities in the development of leadership skills among undergraduate Doctor of Physical Therapy students.

**Method:** The cross-sectional study was conducted from March to October 2023 at the Khyber Medical University and its affiliated institutes in Peshawar, Pakistan, and comprised undergraduate Doctor of Physical Therapy students of either gender aged at least 18 years. Data was collected using a pilot-tested questionnaire. Data was analysed using SPSS22.

**Results:** Of the 340 students, 231(67.9%) were females and 109(32.1%) were males. The overall mean age was 21.55±1.75 years. The largest group was of students in the 7th semester 76(22.4%). Of the total, 131(38.5%) students were members of extracurricular societies, while 209(61.5%) were non-members. High-level leadership skills were found among the members compared to the non-members ( $p<0.001$ ). Type of society ( $p<0.001$ ) and gender ( $p=0.013$ ) has a substantial association with leadership skills.

**Conclusion:** The role of extracurricular activities in the development of leadership skills among undergraduate Doctor of Physical Therapy students was found to be significant.

**Key Words:** Co-curricular activities, Extracurricular activities, Leadership skills, Leadership emergence, Skill development, Student leadership.

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### Introduction

Leadership is one of the most crucial skills for students to possess in order to excel in their academic and professional endeavours.<sup>1</sup> It can be regarded as a proficient capability with various components rather than an immutable personality trait.<sup>2</sup> Leadership is a collaborative process that considers the leader's attributes, ardent supporters, circumstances, and how these variables connect to the leader.<sup>3</sup> A true leader transforms leadership into action that benefits others, inspiring individuals to strive together towards shared goals.<sup>4</sup> A leader ought to have the aptitude to use authority wisely as a means to guide others to accomplish organisational goals.<sup>5</sup> The development of leadership skills, vigour and efficient time management are all fostered by co-curricular activities (CCAs).<sup>6</sup>

CCAs are activities that complement the curriculum, are associated with the student's academic and professional goals, and are assessed.<sup>7</sup> These activities can be organised by establishing pertinent clubs or societies at educational institutions.<sup>8</sup> CCAs enable the students to achieve their goals, elevate their self-esteem, establish a sense of teamwork, develop decision-making skills, improve communication skills, and bolster their ability to negate barriers successfully.<sup>9</sup> Involvement in co-curricular activities promotes the personal and professional development of students by boosting their self-esteem and instilling leadership skills, ingenuity, and competence.<sup>10</sup> Additionally, these activities help students make optimal use of their time and resources in professional contexts.<sup>11</sup> Such activities can also aid the graduates in acquiring employability skills, which are the skills they may use to effectively perform their obligations at work and manage their professional progress.<sup>12</sup>

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In modern times, students are facing challenges in their professional careers due to a lack of skills, such as leadership, efficient communication, decision-making, critical thinking, and the ability to overcome hurdles. Furthermore, to our knowledge, no study has focused on the leadership skills of Doctor of Physical Therapy (DPT) students in Peshawar, Pakistan.

The current study was planned to fill the gap in literature by exploring the role of extracurricular activities in the development of leadership skills among undergraduate DPT students.

## Subjects and Methods

The analytical, cross-sectional study was conducted from March to October 2023 at the Institute of Physical Medicine and Rehabilitation (IPMR), Khyber Medical University (KMU), Peshawar, Pakistan, and its affiliated institutes, namely the Rehman College of Rehabilitation Sciences (RCRS), Northwest Institute of Health Sciences (NIHS), National College of Sciences (NCS), Institute of Health Sciences Peshawar (IHSP), School of Health Sciences Peshawar (SHSP) and the Premier Institute of Health and Management Sciences (PIHMS). The study was approved by the IPMR Ethics Committee, with reference number: KMU/IPMR/2023/863. Prior to the data collection, permission was obtained from the esteemed directors of the aforementioned institutes.

The sample size was calculated using Raosoft calculator<sup>13</sup> with confidence level 95%, margin of error 5%, response rate 50% and with population of 1,313 studying at KMU and its affiliated institutes. The sample size was inflated by >10% to account for possible attrition. To minimise the risk of bias, the sample was raised using simple random sampling technique. All the participants were screened for eligibility and provided with the information sheet, which included an explanation of the study's objectives. Additionally, those who were eligible and willing to participate in the study signed the consent forms and were thus provided with the questionnaires.

DPT students from all the semesters, regardless of gender, who were aged at least 18 years, were included in the study. Students not willing to participate or enrolled with institutes without any societies were excluded from the study.

Data was collected using a questionnaire adapted from a study conducted in Malaysia.<sup>1</sup> In order to determine the reliability of the adapted questionnaire, a pilot study was conducted on 30 students. Cronbach's alpha was found to be 0.922. These results were discarded from the main analysis.

Data was analysed using SPSS 22. Data was presented as mean  $\pm$  standard deviation or as frequencies and percentages, as appropriate. Chi-square test was used to determine the association between different study variables.  $P < 0.05$  was considered statistically significant.

## Results

Of the 340 students, 231 (67.9%) were females and 109 (32.1%) were males. The overall mean age was  $21.55 \pm 1.75$  years. The largest group was of students in the 7th semester 76 (22.4%). Of the total, 131 (38.5%) students were members of CCA societies, while 209 (61.5%) were non-members (Table 1). There were 156 (45.9%) students belonging to IPMR, 56 (16.5%) each to RCRS and NIHS, 32 (9.4%) to NUS, 19 (5.6%) to IHSP, 11 (3.2%) to SHSP, and 10 (2.9%) to PIHMS.

**Table-1:** Demographic characteristics

Characteristics	N=340 Total participants in cross-sectional study
Age	21.55 $\pm$ 1.75 years
Gender	
Male	109 (32.1%)
Female	231 (67.9%)
Academic year	
1st semester	74 (21.8%)
3rd semester	62 (18.2%)
5th semester	66 (19.4%)
7th semester	76 (22.4%)
9th semester	62 (18.22%)
Society member	
Yes	131 (38.5%)
No	209 (61.5%)

High-level leadership skills were found among the members of CCAs compared to the non-members ( $p < 0.001$ ). Type of VVA society ( $p < 0.001$ ) and gender ( $p = 0.013$ ) had a substantial association with leadership skills (Table 2). Among the members 78 (22.9%) showed high-level leadership skills compared to none among the non-members.

## Discussion

Leadership is pivotal for students' academic as well as professional success. The current study focussed on finding an association between CCAs and leadership skills among undergraduate DPT students. The primary focus was on evaluating the leadership skills of society's members and non-members. The study noted that CCAs had a positive impact on the students' leadership skills.

Interestingly, CCAs were more significant for the students engaged in societies involving tasks that promoted physical activity and social interaction than those that emphasised analytical and creative thinking. An American study revealed that engagement in sports is concurrently related to higher levels of psychosocial maturity and social competence.<sup>14</sup> Thus, society members who

**Table-2:** Leadership skill distribution by society membership, society type and gender

Variable	Label	Categories of Leadership Skills			Total	p-value		
		Low level	Moderatelevel	Higher level				
<b>Membership in Society</b>	Yes	1 0.3%	52 15.3%	78 22.9%	131 38.5%	<0.001		
	No	189 55.6%	20 5.9%	0 0.0%	209 61.5%			
	Total	190 55.9%	72 21.2%	78 22.9%	340 100.0%			
<b>Type of Society</b>		189 99.5%	20 27.8%	0 0.0%	209 61.5%	<0.001		
	Sports and adventure society	0 0.0%	11 15.3%	14 17.9%	25 7.4%			
	Islamic society	0 0.0%	111 5.3%	5 6.4%	16 4.7%			
	Literary society	0 0.0%	4 5.6%	7 9.0%	11 3.2%			
	Social society	0 0.0%	8 11.1%	18 23.1%	26 7.6%			
	Discipline society	1 0.5%	4 5.6%	9 11.5%	14 4.1%			
	Arts society	0 0.0%	8 11.1%	8 10.3%	16 4.7%			
	Others	0 0.0%	6 8.3%	17 21.8%	23 6.8%			
	Total	190 100.0%	72 100.0%	78 100.0%	340 100.0%			
	<b>Gender</b>	Male	49 14.4%	26 7.6%	34 10.0%		109 32.1%	.013
		Female	141 41.5%	46 13.5%	44 12.9%		231 67.9%	
Total		190 55.9%	72 21.2%	78 22.9%	340 100.0%			

preferred socialising through sports, volunteer work, and practical tasks were more likely to become leaders.

In the current study, there was a significant association between gender and leadership skills of the students, with more male students involved in athletics than female students. In a 2012 study, most of the male students preferred competitive sports, whereas female students were involved in creative activities, such as crafting, artistic endeavours and organising events.<sup>15</sup> Nevertheless, the current results were somewhat inconsistent with the previous findings<sup>15</sup>, as undergraduate female students preferred social society over indoor activities, and they were more likely to attain leadership roles at workplace in the future as higher proportion preferred to be socially active, shaping up their soft skills.

Leadership skills of students in different semesters of their

academic programme did not follow a linear pattern in the current study. Students with the lowest level of leadership skills were found in the 1st semester, while those with the highest level were found in the 3<sup>rd</sup> semester, and those with a decrease in CCA participation in the final semester again showed an overall decrease in leadership skills. The lack of interest among the first semester students might be due to their unfamiliarity with the campus environment, limited interaction with seniors, and the lack of appealing planned activities that would have sparked their interest. Besides, students in the 3<sup>rd</sup>, 5<sup>th</sup>, 7<sup>th</sup>, and 9<sup>th</sup> semester may have had certain tasks requiring them to participate in such activities or awareness with their respective institutes, resulting in greater interaction with the faculty and senior fellows who might have counselled them regarding the importance of societal involvement.<sup>16</sup>

A study conducted in 2015, reported that in comparison to 3<sup>rd</sup> and 5<sup>th</sup> semester students, those in the 9<sup>th</sup> semester tended to have low-level leadership skills as they were preoccupied with academic deadlines, such as writing thesis, undertaking clinical rotations, preparing course presentations, and their engagement as new internees.<sup>17</sup>

In the current study, questionnaires were evenly distributed among the 7 participating institutes in Peshawar based on the strength of students in each institute. However, descriptive analysis showed that there was no significant effect of the type of institute on the development of leadership skills. Various factors could contribute to situations like this since the criteria for recruiting students into a certain society might vary in different institutes. Similarly, the environment of an institute influences students' exposure to CCAs, meaning if they are not attracted to the planned activities and are overburdened with the curriculum pressure, they tend to refuse to participate and prioritise scoring top marks only.

The current study has limitations as the sample comprised students only from KMU and affiliated institutes in Peshawar due to time, access and financial constraints. Besides, the study questionnaire was the only data-collection when other qualitative methods could be employed for more comprehensive and accurate results regarding students' involvement in CCAs and their leadership skills. Finally, the sample was raised using simple random sampling technique because of which there was an unequal proportion of male and female participants.

## Conclusion

Students' participation in CCA societies, as well as the type of society and gender had a significant influence on the development of leadership skills. Students must be encouraged to actively participate in CCAs to optimise their social, emotional, physical and psychological wellbeing, ultimately nourishing their capabilities and making them competent professionals.

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### AUTHORS' CONTRIBUTIONS:

**MRK:** Detailed explanation of the findings of the current study while linking them to the pertinent research studies.

**PK:** Introduction to the subject matter, literature review and adding citations for all the references.

**MA:** Assistance with the methodology, explaining the study tool, study

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settings, data collection and analysis.

**TK:** Results, illustrated the study outcomes, association between the variables and discussion.

**MUR, SMSAQ:** Supervision, insightful suggestions, competent advice and constant motivation that led to the successful completion of the project.