

# Stress Sources of Physical Therapy Students' and Behaviors of Coping in Clinical Practice: A Palestinian Perspective

INQUIRY: The Journal of Health Care  
Organization, Provision, and Financing  
Volume 57: 1–6  
© The Author(s) 2020  
Article reuse guidelines:  
sagepub.com/journals-permissions  
DOI: 10.1177/0046958020944642  
journals.sagepub.com/home/inq



Ahmad Ayed, PhD<sup>1</sup> and Mosab Amoudi, PhD<sup>1</sup>

## Abstract

Physical therapy students will be exposed to stressors across clinical practice. The aggregate stress conveys to the new behavioral responses occur through the clinical training. The study aimed to examine the stress sources faced by physical therapy students and behaviors of coping used in their clinical practice. A cross-section study with a sample of 83 physical therapy students. Data were collected through Perceived Stress Scale and Coping Behavioral Inventory Scale. The mean of perceived stress by the respondents was 66.3 (standard deviation [SD] = 17.01) and the coping behaviors mean was 35.15 (SD = 9.67). The most common type of factor stressors perceived was looking for care of patients ( $M = 16.6 \pm 4.4$ ) and the most common coping behavior was problem solving ( $M = 13.8 \pm 6.6$ ). The study confirmed that the perceived stress and coping behaviors of physical therapy students were moderate in clinical practice. Stress from the care of patients is the greatest stressful, and problem solving was the greatest coping.

## Keywords

adaptation, clinical experience, perceived stress, cross-sectional study, physical therapy students, problem solving

### What do we already know about this topic?

Physical therapy students contribute to clinical care to enhance their professional problem solving, skills performance, successful communication, and therapeutic relationship, and lifelong self-learning abilities.

### How does your research contribute to the field?

Stress sources were found to impede the clinical practice; finding them and overcoming them through coping behaviors could improve the quality of training and practice

### What are your research's implications toward theory, practice, or policy?

No studies were found to measure stress sources and coping behaviors among physical therapy students in Palestine.

## Introduction

Several types of stressors such as academic issues challenge medical and health students.<sup>1</sup> These stresses are active progression because the causes of stress differ based on the phase of curriculum.<sup>2</sup> Recently, the revolution of medical education professions as well as physical therapy (PT) specialty expanded. Actually, the speed and bulk of new information make students more vulnerable to high levels of perceived stress.<sup>3,4</sup> Physical therapy students contribute in clinical care to enhance their professional problem solving, skills performance, successful communication and therapeutic relationship, and lifelong self-learning abilities.<sup>5,6</sup> Consequently, these students will be exposed to stressors across clinical practice.<sup>7</sup> The aggregate stress conveys to the new behavioral responses that occur through the clinical training.<sup>7-9</sup>

Furthermore, PT students in clinical practice work under the supervision of a physical therapist (i.e. not their teachers). Such training conditions that influence clinical practice may have an effect on PT students. All these necessitate several theoretical and practical teaching and, as a result, may steer students to believe that they are behaving under unlimited pressure.<sup>3</sup>

<sup>1</sup>Arab American University, Jenin, Palestine

Received 25 March 2020; revised 9 June 2020; revised manuscript accepted 15 June 2020

### Corresponding Author:

Ahmad Ayed, Arab American University, Jenin, Palestine.  
Email: ahmad.juma@aaup.edu



Constant stress may affect academic performance negatively,<sup>10,11</sup> lack of empathy while working with patients, and turnover.<sup>12</sup> It may also result in adverse medical conditions as increased stimulation of  $\alpha$ -amylase, exhaustion, and adrenocorticotrophic hormone level following a clinical training.<sup>5</sup> Psychological morbidity may result from an increased stress level in PT students.<sup>13</sup> The highest stress sources are associated with high educational demands.<sup>14</sup>

Stress responses to PT students may be managed during dealing with the problems that have acquired from clinical practice. Coping behaviors described being cognitive skills otherwise relational forces to address gaps in the inner and outer environments. People attempt to solve their challenges by controlling feelings such as crying, smiling, and soothing.<sup>15</sup>

Considering the many stressors along with students of health care, it is important to understand the strategies of coping that is used in an attempt to report their stress levels. Common strategies of coping, reported by literature, consist of planning and prioritization, problem solving and emotional support, effective coping, self-distraction or leisure behaviors, and avoidance.<sup>9,16</sup>

Failure to cope with stress may result in students avoiding or withdrawing further education, suicidal thinking, or involving students in practices such as drinking, smoking, aggressive behavior toward others, breaking the properties of institutions, or participating in violent actions by failing to comply with the laws and rights of others.<sup>17</sup> However, stress information among students in PT is inadequate. Therefore, the study aimed to examine the stress sources faced by PT students and behaviors of coping used in their clinical practice.

## Research Questions

This study intended to reply the next questions:

1. What are the types of stress perceived by Palestinian Bachelor of PT students in the clinical training?
2. What coping behaviors do Palestinian Bachelor of PT students commonly use in adaptation to conditions that are triggering them in experiencing stress?
3. What is the relationship between stress of PT students and their coping behaviors?

## Methods

### *Design and Sample*

A cross-section study was performed at Arab American University Palestine in spring, 2019. The sample of 83 students from all-years students in the PT Department, except for the first year because they were not subjected to clinical practice in the first year.

The PT program comprises of 4 years curriculum and 200 hours of mandatory internship to obtain best practical

experience of this period. The capacity of the department is 50 students per year.

### *Instruments*

Data were gathered by questionnaire; first part was the demographic characteristics, incorporating gender, age, academic year, and area of training. The second part was Perceived Stress Scale (PSS) which was developed by Sheu et al<sup>18</sup> to assess levels of stress and types of stressors among students. The scale was developed for nursing students, and we adapted it for use in PT students because they experience exactly the same stress in the clinical field. This comprises of 29 items with Likert-type 5-point scale, arranged into six aspects, including stress of patient care (8 items), stress of teachers and staff (6 items), stress of assignments and workload (5 items), stress of peer and daily life (4 items), stress of lack of professional knowledge and skills (3 items), and stress of clinical environment (3 items). The overall score rated 0 to 116, with a lessen score reflecting a better level of stress.

The third part was the Coping Behavioral Inventory Scale (CBI) which was developed by Sheu et al<sup>19</sup> and used to detect student's coping strategies. The CBI involves 19 items with 5-point Likert scale categorized into: avoidance action with 6 items; problem-solving action with 6 items; optimistic coping action with 4 items; and transference action with 3 items. Higher score of each factor means that a certain form of coping action is more commonly used and more successful.

The questionnaire was sent to five experts to determine the validity of the questionnaire. The experts have not made any comments. A pilot study with 10 participants was performed to determine reliability of the questionnaire. Cronbach alpha was 0.88 for PSS and 0.82 for CBI. The pilot participants have been excluded from the actual study.

### *Ethical Consideration*

Ethical approval was obtained from the department of PT, Arab American University Palestine before starting data collection. Consent forms and the questionnaires delivered anonymously to students in their classes with their participation were voluntary and confidentiality was preserved. Also, students were assured that their response will be confidential. Consent included information about purpose of study, brief description of what the student will be asking to do, clarification that no risks or harms in participation, explaining how the participant information will be kept confidential, and how much time they will spend by participating in the study. Furthermore, students were told that they could withdraw from the study at any time.

## Results

Data were analyzed using the SPSS-23 software. The study was attended by 83 students of PT. The mean age was 21.6

**Table 1.** Demographic Characteristics of the Participants (N = 83).

Variable	N (%)
Age	
<20	3 (3.6)
20-24	73 (88.0)
≥25	7 (8.4)
Gender	
Male	30 (36.1)
Female	53 (63.9)
Academic year	
Second year	9 (10.8)
Third year	46 (55.4)
Fourth year	28 (33.7)

(SD = 1.4) year. Most students were 73 (88.0%) between the ages of 20 and 24 years. Of all respondents, 53 (63.9%) were female, 46 (55.4%) were in the third year, as shown in (Table 1).

### *Types of Stress Perceived by Students of PT in the Clinical Practice*

The mean of perceived stress by the respondents was 66.3 (SD = 17.01). Of the respondents, 38 (45.8%) had level of stress greater than the average. The greatest type of perceived stress was taking care of patients ( $M = 16.6 \pm 4.4$ ), followed with perceived stress from assignment work ( $M = 13.1 \pm 2.8$ ), and perceived stress related to teachers and staff ( $M = 13.0602 \pm 5.09507$ ). However, the least type of perceived stress related to inadequate knowledge and skills performance ( $M = 7.1 \pm 2.8$ ).

The main stress event that affect the students experience was worrying of grades ( $M = 3.0964 \pm .63658$ ), followed with experience pressure related to nature and quality of practice ( $M = 2.8 \pm 0.9$ ), and then feel of the requirements of practice more than one's physical and emotional endurance ( $M = 2.6 \pm 0.9$ ). However, the least stress event students' experience related to communication with patients ( $M = 1.7 \pm 0.8$ ), as shown in Table 2.

### *Coping Behaviors Adopted by PT Students in the Clinical Practice*

The coping behaviors mean was 35.15 (SD = 9.67). The greatest prevalent coping method managed by participants was problem solving ( $M = 13.8 \pm 6.6$ ), accompanied by motivation ( $M = 8.9 \pm 3.4$ ) and avoidance ( $M = 6.23 \pm 5.2$ ). Transference was least frequently used ( $M = 6.22 \pm 2.8$ ) (Table 3). The greatest coping behaviors were assigned to fate; making plans, listing priorities, stressful events solving; keeping an optimistic and constructive attitude in dealing with daily life activities, and keeping time for sleep and maintaining good quality health in the challenge of stress.

### *Relationship Between Stressors With Coping Behaviors*

The findings showed that coping strategy of avoidance is positively associated with stress related to patient care, assignments and workload, lack of knowledge and skills, peers and daily life, the environment, and teachers and health staff. Of problem solving as a coping strategy, the finding was negatively correlated with stress related to patient care, lack of knowledge and skills, peers and daily life, and teachers and health staff.

Feeling optimistic as a coping strategy was shown to be adversely associated with stress related to patient care, lack of knowledge and skills, the environment, peers and daily life, and teachers and health staff. Transference further revealed a significant negative association with stress related to assignments and workload, lack of knowledge and skills, the environment, peers and daily life, and teachers and health staff (see Table 4).

### **Discussion**

Stress levels among PT students have been shown to be moderate during clinical practice. Six stress-related ranking factors (PSS) graded all students as having a stress level below 3.0, which is relatively moderate, except to worry about bad grades was high. Therefore, even if students' experience in clinical training involved in various sources of stress, PT students could feel that they were challenged because they were self-confident in their coping ability. Such results were supported by Rehman Memon et al<sup>20</sup> and Sabih et al,<sup>3</sup> who found moderate stress level among PT students.

The findings of this study displayed that PT students were unfamiliar with clinical environment, which consist of patient care, several assignments, in addition to conditions of clinical practice, such as lack of professional skills and knowledge. In view of our results, the teaching methods and workload of the assessment should be revised. For instance, the assignments may be structured to evaluate the knowledge, attitudes, and skills of the students for theoretical and practical courses. The PT educators before assigning the students to direct care with real patients might make stress-reduction training, or training by high fidelity simulation which gave them a chance to interact with patients without harm in a controlled, safe environment.

Levett-Jones et al<sup>21</sup> indicated that clinical setting is not appropriate or desirable to students at all times and the results tend to address this. Physical therapy students are frequently driven into an unfamiliar environment, with no staff knowledge or routine. Officials may perhaps have elevated expectancies of their performance, even if they are "only a student" at point of their training.

The clinical trainer may also believe to perform at a specific degree. It suggests that instructors must provide a

**Table 2.** Stressors Perceived by Physical Therapy Students at the Period of Clinical Training (N = 83).

Stress factor	Factor ranking	Item ranking	M	SD
Perceived stress scale			66.30	17.01
I. Stress from taking care of patients	1		16.6	4.4
1. Lack of experience and ability in providing care and in making judgments		28	1.8	.8
2. Do not know how to help patients with physio-psycho-social problems		20	2.2	.7
3. Unable to reach one's expectations		10	2.4	0.8
4. Unable to provide appropriate responses to doctors', teachers', and patients' questions		19	2.2	.9
5. Worry about not being trusted or accepted by patients or patients' family		22	2.1	.8
6. Unable to provide patients with good care		24	2.0	.8
7. Do not know how to communicate with patients		29	1.7	.8
8. Experience difficulties in changing from the role of a student to that of profession		18	2.2	.8
II. Stress from assignments and workload	2		13.1	2.8
1. Worry about bad grades		1	3.1	.6
2. Experience pressure from the nature and quality of clinical practice		2	2.8	.9
3. Feel that one's performance does not meet teachers' expectations		25	2.0	.9
4. Feel that the requirements of clinical practice exceed one's physical and emotional endurance		3	2.6	.9
5. Feel that dull and inflexible clinical practice affects one's family and social life		4	2.6	.9
III. Stress from lack of professional knowledge and skills	6		7.1	2.8
1. Unfamiliar with medical history and terms		16	2.3	1.1
2. Unfamiliar with professional physiotherapy skills		12	2.3	1.0
3. Unfamiliar with patients' diagnoses and treatments		7	2.4	1.0
IV. Stress from the environment	5		7.3	2.6
1. Feel stressed in the hospital environment where clinical practice takes place		9	2.4	1.1
2. Unfamiliar with the ward facilities		11	2.3	1.1
3. Feel stressed from the rapid change in patient's condition		5	2.5	.9
V. Stress from peers and daily life	4		9.2	2.9
1. Experience competition from peers in school and clinical practice		8	2.4	1.0
2. Feel pressure from teachers who evaluate students' performance by comparison		6	2.5	1.1
3. Feel that clinical practice affects one's involvement in extracurricular activities		14	2.3	1.0
4. Cannot get along with other peers in the group		27	2.0	1.0
VI. Stress from teachers and nursing staff	3		13.1	5.1
1. Experience discrepancy between theory and practice		17	2.3	.8
2. Do not know how to discuss patients' illness with teachers or medical and physical therapy personnel		23	2.0	1.0
3. Feel stressed that teacher's instruction is different from one's expectations		21	2.2	1.0
4. Medical personnel lack empathy and are not willing to help		15	2.3	1.2
5. Feel that teachers do not give fair evaluation on students		13	2.3	1.1
6. Lack of care and guidance from teachers		26	2.0	1.0

thorough explanation of the goals and content of clinical care, whereas students can have reasonable standards of clinical training to avoid any potential stress and help students work efficiently with their staff.<sup>22,23</sup>

The findings also indicated that students faced stress in their academic education. Fear of low grades was rated as the first highly stressful event that students worry and anxious about how to evaluate and how grades will get from practice. This finding is close to Shaban et al's<sup>24</sup> results. Over the cultural inspire, Palestinian students keep an eye

on grades and marks because they perceive that their success is based on academic achievement. While assessments are important parts of the clinical education environment, they ought to be carried out in constructive and non-fear-provoking method. Students should be free to believe that someone is waiting for a chance to check them. They should know that they have the resources they need to assist and direct them via challenging tasks at any moment they require. Instructors would have to provide immediate and constant feedback on their practice. In particular,

**Table 3.** Coping Behavior Students' Utilized (N = 83).

Stress factor	Factor ranking	Item ranking	M	SD
Coping behavior inventory			35.15	9.67
I. Avoidance	3		6.23	5.2
1. To avoid difficulties during clinical practice		2	1.28	1.24
2. To avoid teachers		3	1.16	1.28
3. To quarrel with others and lose temper		6	.50	.94
4. To expect miracles so one does not have to face difficulties		4	.96	1.23
5. To expect others to solve the problem		5	.90	.98
6. To attribute to fate		1	1.40	1.23
II. Problem solving	1		13.8	6.6
1. To adopt different strategies to solve problems		5	2.30	1.09
2. To set up objectives to solve problems		2	2.41	1.39
3. To make plans, list priorities, and solve stressful events		1	2.48	1.28
4. To find the meaning of stressful incidents		6	2.06	1.30
5. To employ past experience to solve problems		3	2.36	1.33
6. To have confidence in performing as well as senior schoolmates		4	2.34	1.38
III. Stay optimistic	2		8.9	3.4
1. To keep an optimistic and positive attitude in dealing with everything in life		1	2.81	1.2
2. To see things objectively		3	2.35	1.25
3. To have confidence in overcoming difficulties		2	2.57	1.47
4. To cry, to feel moody, sad, and helpless		4	1.19	1.02
IV. Transference	4		6.22	2.8
1. To feast and take a long sleep		3	1.66	1.48
2. To save time for sleep and maintain good health to face stress		1	2.37	1.12
3. To relax via TV, movies, a shower, or physical exercises		2	2.18	1.32

**Table 4.** The Pearson Correlation Between Stressors and Coping Behavior (N = 83).

Stress factor	Avoidance	Problem solving	Stay optimistic	Transference
Stress from taking care of patients	.331*	-.376*	-.430*	-.166
Stress from assignments and workload.	.600*	-.169	-.072	-.275*
Stress from lack of professional knowledge and skills	.654*	-.384*	-.425*	-.583*
Stress from the environment.	.692*	-.193	-.338*	-.395*
Stress from peers and daily life	.649*	-.281*	-.405*	-.508*
Stress from teachers and nursing staff	.768*	-.344*	-.344*	-.469*

\*Correlation is significant at the .0 level (2-tailed).

instructors must provide a thorough explanation of the criteria used in the clinical evaluation so that students could have an appropriate understanding of the expectations of clinical training to prevent possible stress. Surprisingly, findings are that undergraduates have used a mixed coping strategy that combines problem solving and avoidance. This result is close to Shaban et al's<sup>24</sup> study. Avoidance behavior has seen a positive impact on the stress that is important to patient care and also peers and day-to-day life and stress related to clinical settings and teachers. The results indicated that undergraduates are aware of

potentially viable ways of coping; however, there is no assurance that they will be appropriately involved. Further research is required to examine whether students can be improved by an integrated way to cope with stress relief.

### Strengths and Limitations

This study was the first study to assess stress and coping strategies among PT students in Palestine. Despite the sample of this study was relatively small and recruited only from the Arab American University Palestine, the study



sample might be considered representative because the students of this university composed of students from all areas of Palestine.

## Conclusion

The study confirmed that the perceived stress and coping behaviors of PT students were moderate in practice. Stress from care of patients is the greatest stress, and lack of knowledge and skills was the least. Interestingly, the greatest coping behavior managed by participants was problem solving, while transference was least used.

## Authors' Note

All authors critically reviewed the manuscript and have approved the final version submitted for publication.

## Acknowledgments

The authors would like to acknowledge the Arab American University, Palestine, and participants for supporting their work. Physical therapy students are acknowledged for their cooperation during sample data collection.

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

## ORCID iD

Ahmad Ayed  <https://orcid.org/0000-0003-2164-8183>

## References

- Saxena Y, Shrivastava A, Singh P. Medical education gender correlation of stress levels and sources of stress among first year students in a medical college. *Indian J Physiol Pharmacol*. 2014;58(2):147-151.
- Garg K, Agarwal M, Dalal PK. Stress among medical students: a cross-sectional study from a North Indian Medical University. *Indian J Psychiatry*. 2017;59(4):502-504.
- Sabih F, Siddiqui FR, Baber MN. Assessment of stress among physiotherapy students at Riphah Centre of Rehabilitation Sciences. *J Pak Med Assoc*. 2013;63(3):346-349.
- Shah T, Patel MD, Shah H. A study to evaluate depression, anxiety and stress among undergraduate physiotherapy students-an institution based pilot study. *Int J Curr Res Rev*. 2016;8:20-24.
- Yoshida Y, Asaumi Y, Nakano S. A basic study on the stress of physical therapy students faced with clinical training. *J Jpn Phys Ther Assoc*. 2014;41:94-95.
- Lo K, Curtis H, Keating JL, Bearman M. Physiotherapy clinical educators' perceptions of student fitness to practise. *BMC Med Educ*. 2017;17(1):16.
- Thomson D, Boyle D, Legg C, Owen M, Newman M, Cole MJ. Clinical placements: the perspectives of UK physiotherapy students on how prepared they were by their university for their first clinical placements: an example of one HEI. *Int J Practice Based Learn Health Soc Care*. 2014;2(1):69-79.
- Mahajan AS. Stress in medical education: a global issue or much ado about nothing specific. *Southeast Asian J Med Educ*. 2010;4(2):9-13.
- Singh C, Sharma S, Sharma RK. Level of stress and coping strategies used by nursing interns. *Nurs Midwifery Res J*. 2011;7(4):152-160.
- Lin SH, Huang YC. Life stress and academic burnout. *Active Learn High Educ*. 2014;15(1):77-90.
- Tomaschewski-Barlem JG, Lunardi VL, Ramos AM, Silveira RS, Barlem EL, Ernandes CM. Signs and symptoms of the burnout syndrome among undergraduate nursing students. *Texto Contexto Enferm*. 2013;22(3):754-762.
- Seaward BL. *Managing Stress*. Burlington, MA: Jones & Bartlett Learning; 2017.
- Walsh JM, Feeney C, Hussey J, Donnellan C. Sources of stress and psychological morbidity among undergraduate physiotherapy students. *Physiotherapy*. 2010;96(3):206-212.
- Jacob T, Gummeson C, Remedios L, El-Ansary D, Nordmark E, Webb G. Sources of stress among physiotherapy students: a cross-cultural perspective. *J Phys Ther Educ*. 2012;26(3):57-65.
- Røvik JO. The role of personality in stress, burnout and help-seeking. A ten-year longitudinal study among Norwegian medical students and early career physicians. <https://www.duo.uio.no/bitstream/handle/10852/28588/Roevik-publ.pdf?sequence=1&isAllowed=y>. Accessed July 9, 2020.
- Pereira MA, Barbosa MA. Teaching strategies for coping with stress: the perceptions of medical students. *BMC Med Educ*. 2013;13(1):50.
- Radeef AS, Faisal GG, Ali SM, Ismail MK. Source of stressors and emotional disturbances among undergraduate science students in Malaysia. *Int J Med Res Health Sci*. 2014;3(2):401-410.
- Sheu S, Lin HS, Hwang SL, Yu PJ, Hu W, Lou M. The development and testing of Perceived Stress Scale of clinical practice. *Nurs Res (Republic of China)*. 1997;5(4):341-351.
- Sheu S, Lin HS, Hwang SL. Perceived stress and physio-psycho-social status of nursing students during their initial period of clinical practice: the effect of coping behaviors. *Int J Nurs Stud*. 2002;39(2):165-175.
- Rehman Memon A, Khanzada SR, Khan K, et al. Perceived stress among physical therapy students of Isra University. *Int J Physiother*. 2016;3(1):35-38.
- Levett-Jones T, Pitt V, Courtney-Pratt H, Harbrow G, Rossiter R. What are the primary concerns of nursing students as they prepare for and contemplate their first clinical placement experience? *Nurse Educ Pract*. 2015;15(4):304-309.
- Jamshidi N, Molazem Z, Sharif F, Torabizadeh C, Najafi Kalyani M. The challenges of nursing students in the clinical learning environment: a qualitative study. *Sci World J*. 2016;2016:1846178.
- Joolae S, Jafarian Amiri SR, Farahani MA, Varaei S. Iranian nursing students' preparedness for clinical training: a qualitative study. *Nurse Educ Today*. 2015;35(10):e13-e17.
- Shaban IA, Khater WA, Akhu-Zaheya LM. Undergraduate nursing students' stress sources and coping behaviours during their initial period of clinical training: A Jordanian perspective. *Nurse Educ Pract*. 2012;12(4):204-209.