



Original Research

Knowledge of physical therapy students regarding acute care physical therapy

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Abstract

Introduction: Acute care is a branch of secondary health care which involves short term but seriously active treatment for a serious injury or episode of disease. Application and utilization of physical therapy services in the care of acutely and critically ill patients has been recognized with defined evidence to be effective and beneficial for such patients. It ensures early and better achievement of goals and better level of independence and function. **Objective:** The objective of the study was to determine the knowledge of physical therapy students of Karachi regarding acute care physical therapy. **Material and methods:** This was a cross-sectional study using convenient non-probability sampling technique performed in different physical therapy colleges and institutes of Karachi. A validated and modified questionnaire was distributed in 100 physical therapy students of fourth and final year. Data was analyzed by SPSS version 20 to calculate descriptive statistics. **Results:** The results indicated that most of the students (70%) had good knowledge regarding basic concepts and aspects of acute care physical therapy services according to their own perception. But the knowledge of some specific concepts and techniques was found poor for example 69% students did not know what Heimlich maneuver is. Similarly, 44% students did not know about the term pulse oximetry. **Conclusion:** Overall knowledge of physical therapy students regarding acute care was found to be good. Students considered themselves confident to work in acute care settings. But knowledge of a few advanced techniques was found to be poor.



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Introduction: According to Alavi M. et al (1999), knowledge is defined as a justified personal belief that increases a person's ability to take effective action. Action here involves physical skills and competencies, intellectual/ cognitive activities or both. [1] Acute care is defined as health system components or care delivery platforms involved in treating sudden, usually unexpected, urgent or emergent episodes of injury or illness which can lead to death or disability if not treated promptly and rapidly. The most important factor regarding all these curative actions being practiced in acute care setups is timing of the intervention as well as true diagnosis. If all these interventions are applied not on proper time or proper technique, they become useless. [2] Acute care includes the most time sensitive, individually oriented diagnostic and curative actions. The primary purpose of all these actions, interventions and practices is saving life, saving optimum function of physiological mechanisms and improvement of health of the victim or the diseased person. [3]

Role of physical therapy in acute care: Physical therapy is indicated for the patients or victims admitted in all forms of acute care settings due to conditions like acute severe illness, surgery, trauma or accident for short term care services. Physical therapists' role is established in making possible the early mobilization of a critically ill patient especially in ICU and Cardiac conditions. [4] There is supportive evidence that decisively speaks of the benefits of use and application of early physical therapy rehabilitation services for the patients admitted in any form of acute care setups, for example an acute care unit (ICU). Physical therapists help patients restore function earlier, prevent a large amount of disability for the patients with severe forms of disease or injury as well as reducing loss of mobility in critically ill patients in acute care settings. [5] Acute illness usually gives plenty of serious complications including weakness, neuropsychiatric problems, lower quality of life, dependency and decreased functional mobility. [7] Subsequent immobilization further adds to these complications. [8] There is plenty of evidence that physical therapy intervention after acute injury gives benefit and improves functional outcomes. [9] It is also of value for acute care hospitals to implement physical therapy services especially regarding the changing reimbursement systems. [10]

Objective of the study: To determine the knowledge of physical therapy students of Karachi regarding acute care physical therapy.

Material and methods: A cross-sectional study using convenient non-probability sampling technique performed in different physical therapy colleges and institutes of Karachi. A validated and modified questionnaire [11] was distributed in 100 physical therapy students of fourth and final year. The questionnaire was explained to the participants before filled the questionnaire. Study excluded students who have not studied acute care physical therapy subject/course. Data was analyzed by SPSS version 20 to calculate descriptive statistics frequency and percentage was calculated.

Results: The response rate of this study was 100%. Table 1 showed that 69% of the participants were females and 31% were males. 93% of the students were from Doctor of Physical Therapy (DPT) program while remaining 7% were from Bachelors of Physical Therapy (BPT) program.

According to the results, 54% of participants were from final year and 46% were from fourth year. 83% of the respondents replied yes when asked to have visited any type of acute care center while 17% replied no to this question. Of the 83% who had visited acute care center, 34% had visited emergency department, 37% had visited intensive care unit (ICU), 4% visited coronary care unit (CCU), 6% visited burn center while 2% said to have visited some other sort of acute care center. 57% of the participants had worked in some form of acute care center while 43% had never got work exposure to any acute care setting. When asked about duration of work among those who had worked in any kind of acute care setting, 71.9% had worked for 1-3months, 17.5% had worked for 3-6months and only 10.5% replied to have worked for more than 6months.

Figure 1 showed that the 60% of the students agreed to the statement asking that they are trained enough to provide physical therapy services at acute care center, 12% replied strongly agree, 18% disagreed to the statement while 10% strongly disagreed to this statement. 62% of the participants agreed to understand mechanical ventilation, 6% strongly agreed, 22% disagreed while 10% strongly disagreed. Regarding pulse oximetry, 50% of the participants agreed to understand this term, 6% chose strongly agree, 37% disagreed while 7% strongly disagreed to it. 48% of the participants agreed to the statement that they knew how to check saturation of oxygen through pulse oximeter, 11% strongly agreed, 32% disagreed and 9% strongly disagreed. When asked about the clinical significance of hypovolemia, 55% of the students agreed that they knew it, 19% strongly agreed, 20% disagreed and 6% strongly disagreed. 52% of students agreed and 19% strongly agreed that they knew physical therapy interventions can be effective and life saving for patients of hypovolemia while 20% disagreed and 9% strongly disagreed to this statement. 74% of the respondents knew about wound care and debridement while 26% did not know about it. 83% of participants said that they knew fundamental and standard protocols and guidelines to work in acute care center whereas 17% denied knowing about these guidelines. When asked about Heimlich maneuver, only 31% percent answered that they knew about it and 69% of the participants said that they did not know about it entirely. 70% of the students said that they knew how to perform postural drainage while 30% did not know that. 74% of the participants knew different interventions which could help to monitor and improve general body circulation for the patient who is bed ridden while 26% did not know any interventions in this regard. 80% of participants knew about cardiopulmonary resuscitation (CPR) while 20% did not know. When asked about ambu bag, 72% said they knew it while 28% did not know. 79% of the participants responded in yes when asked whether they know how to increase and maintain bulk and strength of muscles for a patient in acute illness while 21% said no on this question. 76% of the sample knew about maintaining a patent airway in an acute care patient while 24% did not. 86% replied they knew the standard guidelines and recommendations for safe patient handling and 14% said they did not.

Figure 2 showed that 70 percent of the students answered true selecting agree or strongly agree whereas 30 percent of the sample size gave wrong response by taking disagree

and strongly disagree as their decision about the true statements.

Discussion: According to this study, most of the students were having good knowledge regarding the use of physical therapy in the acute care settings as 70 percent of the participants selected agree and strongly agree option for all statements which is absolutely a correct response indicating that they think themselves they have a good knowledge for this scope of practice and thought themselves as prepared to work in such settings effectively and efficiently which was not analyzed that whether they can do so in fact or not. On the other hand, a cross sectional study devised by Sharoon et al in 2010 in United States also found out the same results for the physical therapists who were working in acute care centers to validate and check the behavior, skills and knowledge of the therapists related to the specific protocols and parameters of practice in acute care settings. The study results expressed that physical therapists had sufficient and distinct knowledge, behaviors and skills specifically required for the practice in such critical settings [12]. In that study, the respondents were all the experienced therapists who were working currently in acute care settings since at least 5 years while in the present study, the participants were all totally inexperienced students who had not worked independently in any such setting except just 57 percent of them who had got a working exposure in such settings for a short duration. Similar results obtained in another study performed by Brian et al in 2013 on acute care physical therapists to describe practice, perception and knowledge of safe patient handling procedures, equipment and practices. The study results revealed that physical therapists were found using the guidelines for safe patient handling and were confident to use the specific equipment for this purpose and also shown their agreement to the fact that there is a massive support from evidence that safe patient handling practices and equipment should duly be practiced [13]. But again, the same here that the participants of that specific study were also experienced who were working and practicing physical therapists as compared to the present study which was conducted only on the inexperienced students of different physical therapy programs. The aforementioned study also included an evaluation of change in practice of these guidelines and equipment after a safe patient handling (SPH) training program and noticed a significant improvement in the practice and use of such equipment and practices as well but no training or teaching program was arranged in this study. This study only checked the students' knowledge according to their own perception as it was at the specific time of questionnaire distribution. In a study conducted by G. B. Smith et al in 2002 on trainee doctors to determine knowledge of different aspects related to acute care, it was manifested in results showing that there were significant deficiencies in their knowledge of different issues, problems and diseases encountered in acute care circumstances. The study included senior and junior house officers who were working in hospitals and investigated about different basic aspects of acute care health services. Different aspects e.g., airway obstruction, pulse oximetry, urine output etc. were asked for with the help of a questionnaire and it was noted that knowledge of these aspects was inadequate in these trainee doctors [14]. The knowledge of these trainees regarding different

aspects of consent was also not satisfactory. In the present study, the knowledge of the students was found adequate and significantly correct for the acute care practices. However a few questions in both the studies were similar for example those related to pulse oximetry but the response was comparatively better for some questions in the mentioned study i.e. 36 percent of the trainee doctors responded wrongly in the above mentioned study to the questions related to pulse oximetry compared to 43 percent of the physical therapy students in the present study selecting dis agree or strongly disagree to the statement related to pulse oximetry which shows that they have less knowledge.

Similarly, knowledge regarding Heimlich maneuver was also observed to be very poor in this study, 69 percent of the students choosing that they entirely don't know what it is but this question was not included in the study referenced above. On the other hand, many other questions were answered more correctly in this study as compared to the previous one. For example, 80 percent of students in this study said that they knew about cardiopulmonary resuscitation (CPR).

In a cross sectional study done in 2012 by Karen K. Y. Koo et al to identify knowledge of physical therapists and physicians regarding ICU acquired muscular weakness as well as training level for mobilizing the patients who were on ventilator, it was observed that most of the participants (69%) underestimated the occurrence of weakness induced by stay of patient in intensive care unit while 60 percent respondents considered themselves to have inadequate knowledge and skills required to mobilize patients who were on ventilator support [15].

Conclusion: According to the interpretation of cumulative results, most of the students had good knowledge of acute care physical therapy practice and physical therapy interventions applied while working in acute clinical environments. The overall results show a good amount of basic knowledge in the students of physical therapy, but deficiencies were observed when some questions regarding some techniques and interventions were asked. Basic knowledge of the students was found to be good according to their own perception and they are capable and confident to work in such circumstances. But some advanced level questions did not get an acceptable response from the students which they were expected to know.

Recommendation: It is recommended that such study should be performed at a greater level with some greater sample size to have a better idea of students' knowledge regarding acute clinical setting practices. It should also be performed including other cities of Pakistan to generalize the results. It is also recommended to check the practical skills and knowledge of physical therapy students regarding physical therapy practice in such acute and critical care centers by making them practically perform different interventions and observing them or by simulation method to justify their knowledge or by asking some case scenario type problems.

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Table 1. Demographic characteristics and basic information of subjects

Variables	Category	All responses Number (%)
Total		100
Gender	Female	69%
	Male	31%
Program	BSPT	7%
	DPT	93%
Academic Year	Final year	54%
	Fourth year	46%
Have you ever visited any acute care center e.g. emergency department ICU/Trauma Center etc	Emergency department	34%
	ICU	37%
	CCU	4%
	Burn center	6%
	Others	2%
Have you ever worked in any type of acute care setting e.g. emergency department, ICU etc. as trainee or interneer?	Yes	57%
	No	43%
If yes, please specify duration of your work.	1.3 months	41%
	3.6 months	10%
	More than 6 months	6%

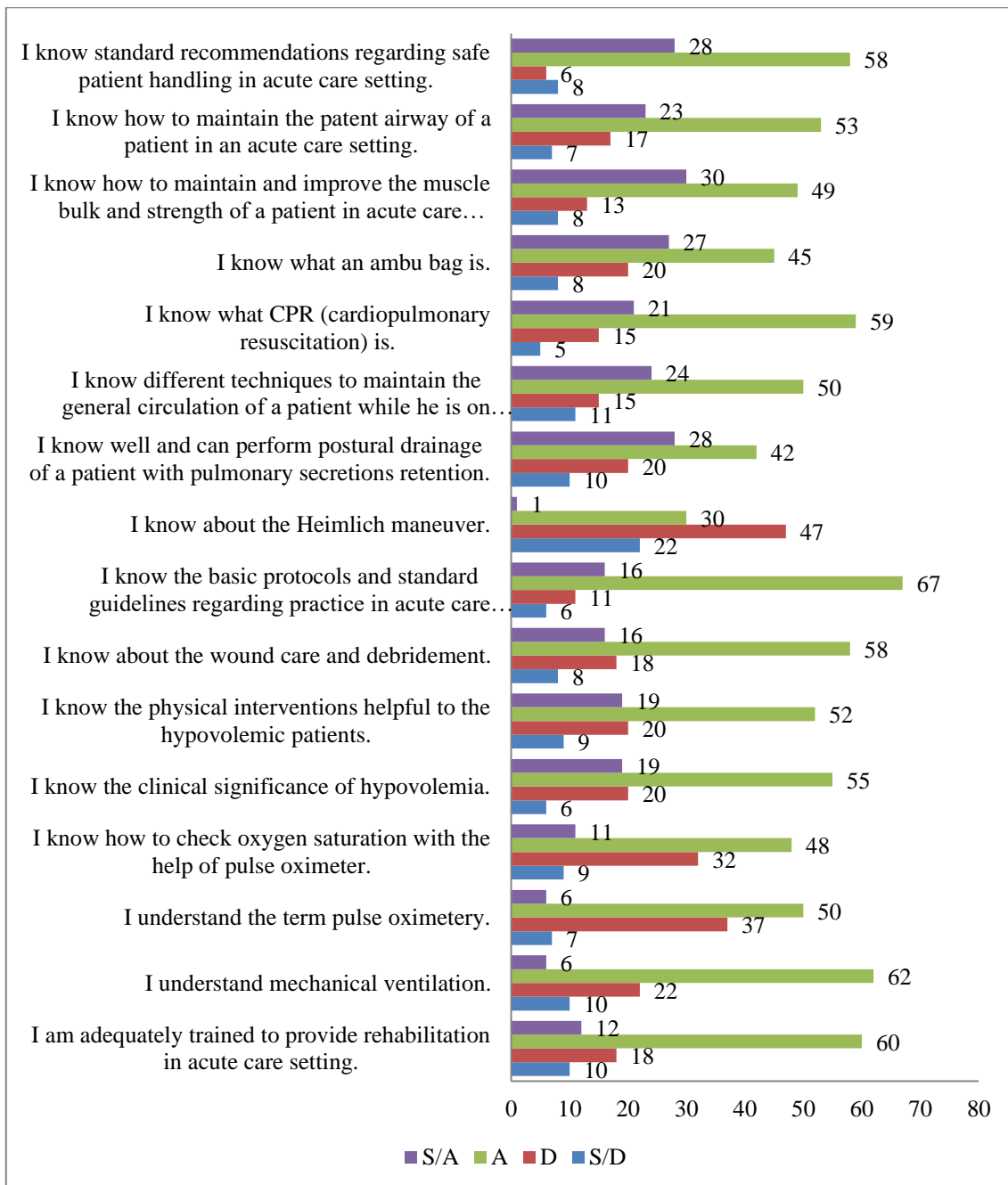


Fig. 1. Knowledge regarding acute care physical therapy

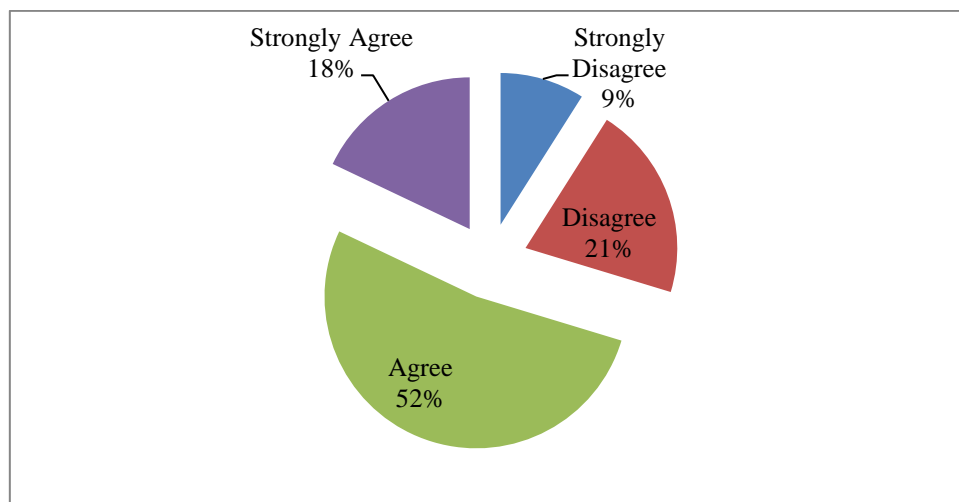


Fig. 2. Total response about knowledge regarding acute care physical therapy