THE APPLICATION OF PHYSICAL THERAPY IN INTENSIVE CARE UNITS; A PRACTICE SURVEY

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ABSTRACT

BACKGROUND

Acute neuromuscular weakness in critically sick patients has been associated to an increase in ICU readmissions, a greater risk of institutionalization, worse long-term physical performance, and a lower health-related quality of life.

OBJECTIVE

Patients who survive ICU stay often suffer by exhaustion, weakness, and reduced functional status. The purpose of this survey was to figure out if physical therapy for inpatient was suitable for individuals recovering from serious illness.

METHODS

This was cross-sectional research that asked about physical therapist staffing and availability for intensive care unit patients, as well as physical therapy use in 6 patients situations requiring intensive care unit admission and mechanical ventilation. The survey was carried out online, and the results were analyzed using SPSS 20.0.

RESULTS

The survey received 273 responses from physical therapists. Before beginning PT for ICU patients, most hospitals (98 percent) require a physician consultation. Only 3% of institutions have established criteria for initiating physical therapy in the ICU. When compared to academic hospitals, clinical hospitals did not provide weekend PT (p=0.03). Depending on the clinical situation, the frequency of regular PT engagement varies (highest 89 percent after CVA, lowest 46 percent myocardial infarction, p 0.001).

CONCLUSION

According to the study's findings, patients hospitalised to intensive care units (ICUs) for rehabilitation from serious illness get physical therapy on a regular basis. However, the frequency and kind of PT may vary greatly depending on the institution and clinical conditions.

KEYWORDS

Physical Therapy; Rehabilitation, Intensive care units, in patient physiotherapy

INTRODUCTION

Acute neuromuscular weakness in critically sick patients has been associated to an increase in ICU readmissions, a greater risk of institutionalisation, worse long-term physical performance, and a lower health-related quality of life. Immune system dysfunction, inadequate nutrition, and pharmaceutical medicines such as blocking of neuromuscular medications and corticosteroids all contribute to the development of this neuromuscular weakness.(1)

In the critical care unit, patients are often recommended to stay in bed at first. Inactivity and immobility, on the other hand, may have several negative effects on the body, such as pressure ulcers, atelectasis, and an increased risk of aspiration and pneumonia.(2) When individuals are healthy, remaining in bed might cause them to lose up to 3% to 4% of their physical strength each day. After a week of complete bed rest, their postural muscle strength may be 10% lower. (3) Individuals who do not move have a bigger influence on the elderly and those suffering from chronic illnesses such as congestive heart failure and chronic obstructive pulmonary disease(4). Aside from the negative effects of being unable to move, ICU patients are more likely to develop neuromuscular disorders that are not their own. Numerous studies have shown that more than half of patients who need mechanical ventilation for more than seven days develop critical illness polyneuropathy or myopathy. (5) Neuromuscular weakness in patients recovering from a major illness may have a significant impact on their physical capacity and health-related quality of life after they are discharged from the intensive care unit. The most common limitations are those associated with daily physical function, such as the inability to lift and carry groceries, climb stairs, bend, kneel, or walk short distances.(6)

Physical therapy is one of the therapies being researched in critically ill patients. Bailey and his colleagues discovered that persons with severe respiratory failure who required mechanical ventilation for more than four days may benefit from PT in their trial. A six-week exercise programme improved the Barthel Index of Activities of Daily Living scores in small Taiwanese

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research.(5) Another research found that when electrical stimulation and active limb movement are utilised combined, moving from bed to chair takes less time. The most frequent nursing interventions that patients did not do while in the hospital were abduction, positioning, and passive range of motion.(7) According to the European Respiratory and Intensive Care Medicine task forces, only level C evidence suggests that physical therapy for those who are critically ill may help them recover fast (uncontrolled or nonrandomized studies).(8)

Physical therapy's role in critical illness rehabilitation has gotten little attention. There has been no research in Pakistan on the use of PT for critical illness recovery. To learn about contemporary physical therapy techniques for critically sick patients, as well as hospital staffing trends.(9)

MATERIALS AND METHODS

These were then examined for clarity and realism by 273 critical care physicians and physical therapists. Their suggestions resulted in modest procedural adjustments. The survey was completely anonymous. Nobody got compensated for their time, and everyone gave it freely. They received IRB clearance.

The survey took around 15 minutes to complete and questioned about the demographics of the main hospital as well as PT staffing. A mechanically ventilated ICU patient condition was also investigated. Physical therapists were asked whether physical therapy was advised for each patient and how often.

"Frequent" PT engagement was defined as 75% or above. Patients were asked to assess their chance of getting six forms of PT: chest physiotherapy, passive range-of-motion exercises, contracture and wound placement, and therapeutic activities (defined as aerobic or resistive movement initiated by the patient with assistance from the physical therapist). The most successful physical treatment strategy was shown by the last question for each patient scenario. SPSS 20.0 was used to analyse the data in this research.

Type of Acute Respiratory Failure	**Routine Use of Acute Care Physical Therapy**	**Physical Therapy Performed**	
		1–5 days/week	6–7days/week
Neurological			
Cerebral Vascular Accident	89% (86–92%)	63	24
C6 fracture with quadriplegia	59% (52–63%)	58	22
Trauma	47% (36–54%)		
MVA with liver laceration		47	21
Medical	72% (64–76%)		
COPD exacerbation	61% (58–63%)	54	26
Sepsis and pneumonia	62% (59–66%)	58	18
Myocardial infarction/heart failure	46% (36–54%)	63	27

DISCUSSION

This nationwide research revealed that physical therapy benefits critical-care patients in a number of ways. PT was sometimes administered to ICU patients recovering from major conditions. Most hospitals needed a primary care physician to commence PT consultations, and fewer than 10% of hospitals had written guidelines for PT for ICU patients.(10) The institution and the scenario in which patients were being treated impacted the probability and frequency of obtaining PT. To help wounded patients, physical therapists regularly employed functional mobility retraining and exercises(11). However, the kind of PT that was most likely to be employed was dictated by the patient's health. In the United States, physical therapists seldom used chest physiotherapy to treat critically sick patients. This is not the situation in Europe or Australia. Physical therapists have widely differing views on the best sort of PT to use in clinical scenarios.(12)

functional mobility and therapeutic exercises are the two main types of physical therapy that clients get. Therapeutic exercise is designed to help patients restore strength, flexibility, and stamina. They may be trained to raise modest weights or push against a resistance during therapeutic exercise. The goal of functional retraining is to help people restore their balance, coordination, and independence. (13) Anyone who can walk may start learning how to walk more slowly with the help of a rolling walker and/or a professional. When a patient is

unable to be disconnected from a ventilator, a portable ventilator may help them breathe while exercising.(14) Therapeutic exercise and functional mobility retraining are both routinely employed in physical therapy sessions for critically sick ICU patients who need to recuperate. Future research would be needed to discover the best mix of therapeutic activities and functional mobility retraining for people who have recovered from a critical illness and are ready to get back on their feet.(15)

We are dealing with a lot of challenges in our study. Half of those who answered to the survey did so. Respondents to the research may have offered an inaccurate picture of what people do in real life throughout the nation. Our research, on the other hand, just asked PTs how they felt about hypothetical patient situations, rather than how they were engaged in real-world surgeries that could be viewed in person. (16) Medical record audits conducted in the future or in the past may be worth looking into in the future. This research did not include consultations with other kinds of health care team, such as respiratory therapists, nurse critical care doctors, and occupational therapists. Physical therapists do not undertake passive ROM and positioning, or chest physiotherapy. These medical specialists can help with these and other problems.(17) Our results do not suggest that these patients are not provided with posture, passive range of motion exercises, or chest physiotherapy. They merely signify that these individuals do not regularly undergo this kind of physical treatment. Additional research with more health care personnel would be needed in the future to better understand how these medications are provided to critically sick patients.

We had all our patients on machines for two weeks. This research did not look at how physical therapists helped critically sick patients in the intensive care unit in the beginning. Individuals who had been mechanically intubated in clinical research were able to breathe more easily and independently thanks to early physical treatment.(18) Similarly, in our survey, we did not include post-hospital physical therapy use. Two studies looked at the benefits of physical therapy for persons in the critical care unit. One research looked back at patients who had spent a long time in the hospital. Furthermore, while in the ICU, none of these patients got physical therapy. After five 30-minute sessions of physical therapy each week, their upper and lower limb motor strength and independence increased considerably. Jones and his colleagues investigated PT training in 126 patients on mechanical ventilation in the critical care unit. They were given a six-week supply of rehabilitation goods after they were discharged from the hospital. There were 93 pages of text in the package, with no pictures or instructional resources. At 8 weeks and 6 months, the intervention group took much longer than the control group to enhance their SF-36 physical function scores, although both groups showed significant gains.(19) The Task Forces of the European Respiratory Society and the European Society of Intensive Care Medicine reviewed these studies and found that chronic or long-term physiotherapy for seriously ill patients had only level D evidence (expert opinion).

Physiotherapy is routinely given to patients suffering from major ailments. Because critical sickness causes individuals to be unable to walk and weakens their muscles, further study should be done to see whether physical therapy might help persons who have undergone a critical illness.(20)

CONCLUSION

According to the study's findings, patients hospitalised to intensive care units (ICUs) for rehabilitation from serious illness get physical therapy on a regular basis. However, the frequency and kind of PT may vary greatly depending on the institution and clinical conditions.

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