



**Research Article**

**ROLE OF CARDIOPULMONARY PHYSIOTHERAPY IN EDUCATION AND SOCIETY AMONG  
PHYSIOTHERAPY STUDENTS: A SURVEY**

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**ABSTRACT**

**Aim:** To find out the impact role of cardiopulmonary physiotherapy in education and society among physiotherapy students of Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India.

**Background:** According to department of health cardiac rehabilitation aims to restore an individual with heart disease to their optimal level of physical, psychological, social and vocational well-being. Physiotherapy is a profession concerned with helping to restore wellness to people by providing them good quality of life. Positioning describes the use of body position as a specific treatment technique. Dean E stated that positioning is used with the aim to improve of ventilation/perfusion ( $V/Q$ ) matching, lung volumes and mucociliary clearance, to reduce the work of breathing (WOB) and the work of heart.

**Methodology:** A total of 176 subjects were recruited conveniently as per the inclusive and exclusive criteria. The subjects then passed through a questionnaire only after given voluntary written consent. Their opinion on "Role Of cardiopulmonary Physiotherapy in Education and Society among Physiotherapy Students" was measured by using questionnaire.

**Results:** It was observed that 837 are strongly agree with the average % of 47.55%, 855 are agree with the average % of 48.57%, 57 are disagree with the average % of 3.23%, and 11 are strongly disagree with the average % of 0.62%. The results was taken out of 1760 of total opinion.

**Conclusion:** This study concluded that major numbers of physiotherapy students are aware and agreed about the need of cardiopulmonary physiotherapy in education and society. Although for carrier point of view cardiopulmonary physiotherapy program provides practicing physiotherapists with an opportunity to study for a specialized post graduate qualification which will significantly contribute towards carrier development.

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**INTRODUCTION**

Physiotherapy is a profession concerned with helping to restore wellness to people following injury, pain or disability. Physiotherapy is defined by the world confederation for physical therapy (WCPT) as "providing services to individuals and populations to develop maintain and restore maximum movement and functional ability throughout the lifespan".<sup>1</sup>

According to ATS Pulmonary Rehabilitation (PR) is a "comprehensive intervention based on a thorough patient assessment followed by patient- tailored therapies that include, but are not limited to, exercise training, education, and behaviour change, designed to improve the physical and psychological condition of people with chronic respiratory

disease and to promote long term adherence to health – enhancing behaviors."<sup>2</sup>

Anne K Swisher et al. found that in 1975, the House of Delegates of the American Physical Therapy Association approved the concept of specialization and created the task force on clinical specialization. The task force was charged with identifying and defining physical therapy specialty practice areas and with developing the structure for and functions of a board-certified process. The document developed by the task force, essentials for certification of advanced clinical competence in physical therapy, was adopted by the House of Delegates in 1978. Cardiopulmonary physical therapy was the first recognized clinical specialty with in physical therapy in 1978. Since that time, clinical practice in cardiovascular and pulmonary physical therapy has changed dramatically.<sup>3</sup>

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The definition used by the United States public health service and by the cardiac rehabilitation /secondary prevention performance measures writing committee is as follows- "Cardiac Rehabilitation (CR) services are comprehensive, long term programmes involving medical evaluation, prescribed exercise, cardiac risk factors modifications, education and counselling. These programmes are designed to limit the physiologic and psychological effects of cardiac illness, reduce the risk of sudden death or re-infarction, control cardiac symptoms, stabilize or reverse the atherosclerotic process, and enhance the psychosocial and vocational status of selected patients."<sup>4</sup>

According to department of health cardiac rehabilitation aims to restore an individual with heart disease to their optimal level of physical, psychological, social and vocational well-being.<sup>5</sup> National clinical guidelines for cardiac rehabilitation stated that cardiac rehabilitation should be multidisciplinary and "menu driven". That is, the patient should be offered treatments based on an assessment of his/her individual needs rather than being asked to attend a predetermined programme in which all patients take part in all elements.<sup>6</sup>

Ciesla. N *et al* stated that the goals of respiratory physiotherapy management are to promote secretions clearance, optimize oxygenation, improve lung volume and prevent respiratory complications in both the intubated and spontaneously breathing Intensive care unit (ICU) patients.<sup>7</sup> Study showed that the efficacy of chest physiotherapy, defined variously as combinations of positioning, manual hyperinflation (MH), ventilator hyperinflation (VH) and percussion, vibrations, on short term patients physiological outcomes found extensively.<sup>8-12</sup>

Positioning describes the use of body position as a specific treatment technique.<sup>13</sup> Dean E stated that positioning is used with the aim to improve of ventilation/perfusion (V/Q) matching, lung volumes and mucociliary clearance, to reduce the work of breathing (WOB) and the work of heart.<sup>14</sup> The general aims of any physiotherapy program in critical areas is to apply advanced, cost-effective therapeutic modalities to decrease the patient's dependency on the ventilator, to improve residual function, to prevent the need for new hospitalizations and to improve the patient's quality of life.<sup>13</sup>

## MATERIALS AND METHODS

### Study Design

Type of study – Questionnaire based exploratory study

Duration of study – 1 year

Location – Physiotherapy Department of Teerthanker Mahaveer University (TMU).

### Sample Design

Sample size – 176

Sample population – Physiotherapy Students

Sampling – convenient sampling

### Materials Used

Self-administered quantitative questionnaire is used. Every questionnaire carried 10 (Ten) questions with 4 options each. Options are Strongly Agree (SA), Agree (A), Strongly Disagree (SD), and Disagree (D).

### Inclusion Criteria

1. Age -19-24 years.
2. Both males and females students.
3. Undergraduate students of physiotherapy department of TMU.

### Exclusion Criteria

1. Students below 19 years.
2. Students who do not belong to department of physiotherapy.

### Procedure

One hundred seventy six students selected conveniently as per the inclusive and exclusive criteria. The subjects then passed through a questionnaire only after given voluntary written consent. Their opinion on "Role Of cardiopulmonary Physiotherapy in Education and Society among Physiotherapy Students" was measured by using questionnaire.

## RESULT

Total of 176 students across Department of Physiotherapy, Teerthanker Mahaveer University, Moradabad, has participated in the present study. All the samples were taken from the department of physiotherapy of TMU campus by random sampling method. In this study both male and female students of different ages participated. The questionnaire was filled by all the subjects without missing anyone and each and every question was explained to the participants by the researcher. The data was taken then analyzed to find the role of cardiopulmonary physiotherapy in education and society among physiotherapy students.

It was observed that 837 are strongly agree with the average % of 47.55%, 855 are agree with the average % of 48.57%, 57 are disagree with the average % of 3.23%, and 11 are strongly disagree with the average % of 0.62%. The results was taken out of 1760 of total opinion.

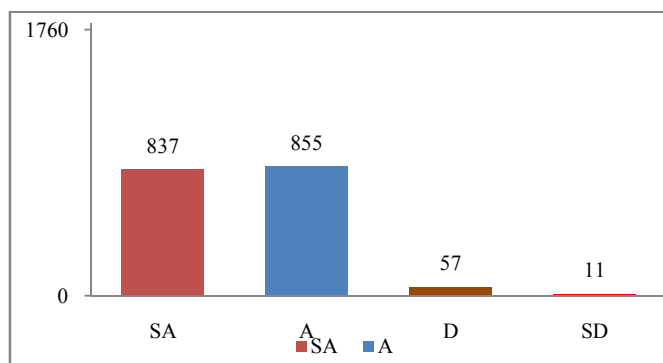
Results from first year showed that 191 are strongly agree with the average of 38.2%, 278 are agree with the average of 55.6%, 19 are disagree with the average of 3.8%, and 6 are strongly disagree with the average of 1.2%.

Results from second year showed that 210 are strongly agree with the average % of 43.75%, 250 are agree with the average % of 52.08%, 25 are disagree with the average % of 5.2%, and 4 are strongly disagree with the average % of 0.83%.

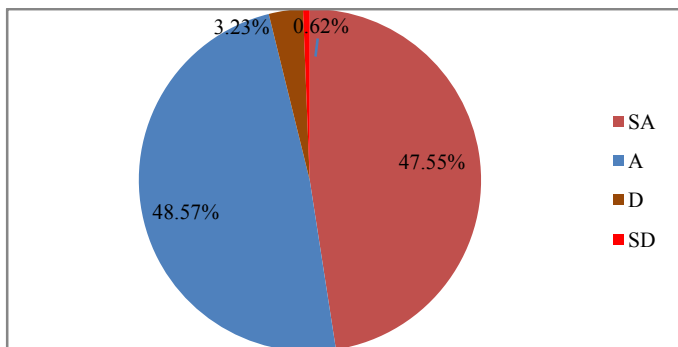
Results from third year showed that 212 are strongly agree with the average % of 57.29%, 160 are agree with the average % of 43.24%, 7 are disagree with the average % of 1.89%, 1 are strongly disagree with the average % of 0.27%.

Results from final year showed that 224 are strongly agree with the average % of 58.94%, 167 are agree with the average % of 43.94%, 6 are disagree with the average % of 1.57%, and with the average % of 0% are strongly disagree.

**Gross Analysis of the Questions**



**Gross Percentage Analysis of the Questions**



**DISCUSSION**

Devanshi D *et al* found that awareness of physiotherapy among health care professional was 90% and 78% of general population knew about physiotherapy which was strongly supported the present survey and it helps to understand existing awareness of cardiopulmonary physiotherapy among physiotherapy students and its referral indicated that 47.55% are strongly agree and 48.57% are agree. Our results were consistent with a study done by Apurva Shimpi where a cross sectional survey to study awareness and perspective among referring doctors in colleges of Mumbai and Pune which found that a significant number of doctors (69.9%) were acquainted with the physiotherapist working with them. They also found that a majority of doctors from their study (95.5%) referred people for physiotherapy.<sup>14</sup>

“Role of physiotherapists in multidisciplinary healthcare” study by Grace Vincent found that interdepartmental lectures on physiotherapy and clinical rounds if conducted can increase the recognition of the field which is correlate present study results where physiotherapy students also agreed that cardiopulmonary physiotherapy for future aspect is well acceptable for self-professional development.<sup>15</sup>

Present study results supported by the study of Yashaswi A *et al* where it was observed that awareness was greater among students compared to general public. In developed countries, direct access to physiotherapists is practiced, where patient directly approaches physiotherapist for health care professional.<sup>16</sup>

It is reported that higher levels of literacy are associated with better understanding and knowledge about medical conditions and health care among general public.<sup>17</sup>

Present study results are also consistent and supportive with comprehensive review of a 21st century health care profession, knowledge about scope of physiotherapy profession, and the

educational level of subject is found to be a significant predictor.<sup>18</sup>

Jack James *et al* stated that role of physiotherapy in cardiopulmonary conditions, health promotion, wellness and preventive aspects of Physiotherapy profession remains unrecognized and least publicized.<sup>19</sup>

According to the present study outcomes, physiotherapy has evolved from general to specialty service in recent years. Physiotherapists are involved in critical evaluation and decision making in disorders and execute evidence based clinical practice.<sup>20</sup>

Turankar *et al.* stated that heart rate and systolic blood pressures were improved with breathing techniques. As well as Sharma *et al.* also stated that diastolic blood pressure were also improved by breathing techniques which shows positive response with present study for cardiac rehabilitation.<sup>21</sup>

For Pulmonary Rehabilitation Holland *et al.* taught that breathing techniques for improvement in overall quality of life and exercise tolerance which is well acceptable for pulmonary rehabilitation and support the results of present study.<sup>22</sup>

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Medical professionals play an important role in referral of patients of physiotherapy besides direct contact. Hence awareness of role of physiotherapy in various disease and dysfunctions in of paramount importance. Though there is adequate awareness about physiotherapy in musculoskeletal, sports and neurological dysfunctions, it is limited to field of cardiovascular and pulmonary dysfunction i.e. Cardiac and pulmonary rehabilitation, physiotherapy post-plastic surgery in women health for following pregnancy in gynaecological and obstetric disorders and oncology. Lack of acknowledgement by them will indeed affect the patients who are unknown to the potential of the field in improving their quality of life. Albeit our study results showed that cardiopulmonary physiotherapy plays a major role for cardiopulmonary conditions.<sup>24</sup>

Turk.adawi KI.et.al reviewed that patient with cardiovascular disease participation in cardiac rehabilitation is associated with reduced rate of all .cause mortality and cardiac mortality by 13%-26% and 20%-36%, respectively where the results of the present study are consistent and well agreed by the physiotherapy students.<sup>25</sup>

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