International Journal of Health Sciences and Research
[Indexed, Peer-Reviewed Journal]
Volume 16; Issue: 3; March 2026
Website: www.ijhsr.org
Original Research Article *ISSN: 2249-9571*

Impact of Health Education on Knowledge and Attitude Regarding Self-Breast Examination among Physiotherapy Students

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DOI: https://doi.org/10.52403/ijhsr.20260326

ABSTRACT

Background: Breast cancer is the most common malignancy among women worldwide and remains a leading cause of cancer-related mortality. Early detection plays a crucial role in improving survival outcomes, especially in low-resource settings. Self-breast examination (SBE) is a simple, cost-effective method for early detection; however, inadequate knowledge and unfavourable attitudes toward SBE limit its regular practice among young women.
Objectives: To assess the impact of health education on knowledge and attitude regarding self-breast examination among physiotherapy students.
Materials and Methods: An interventional study was conducted among 160 physiotherapy students at a physiotherapy college attached to B.J. Medical College, Ahmedabad. Participants were recruited using a convenience sampling method. Baseline data on socio-demographic profile, knowledge, and attitude regarding self-breast examination were collected using a predesigned and structured questionnaire. Following baseline assessment, a structured health education intervention was delivered through lectures, PowerPoint presentations, and demonstrations on SBE. Post-intervention data were collected using the same questionnaire. Knowledge and attitude scores before and after the intervention were compared using paired Student's *t*-test, with $p < 0.05$ considered statistically significant.
Results: At baseline, the majority of students (61.8%) had poor knowledge regarding self-breast examination. Following the educational intervention, there was a marked improvement in knowledge levels, with a substantial increase in students demonstrating good knowledge (29.3%). Attitude toward SBE also showed improvement after the intervention. Mean knowledge scores increased from 2.18 ± 1.10 to 4.87 ± 1.33, and mean attitude scores increased from 3.41 ± 1.68 to 5.39 ± 1.46. The improvement in both knowledge and attitude scores was statistically highly significant ($p < 0.001$).
Conclusion: Health education interventions are effective in significantly improving knowledge and attitude regarding self-breast examination among physiotherapy students. Incorporating regular educational programs on SBE in health-professional training curricula may contribute to early detection and improved breast cancer outcomes.

Keywords: Self-breast examination; Breast cancer; Health education; Knowledge; Attitude; Physiotherapy students

INTRODUCTION

According to GLOBOCAN 2018, breast cancer accounts for 24.7% of all newly diagnosed cancer cases among females worldwide, making it the most common cancer in women [1]. Globally, breast cancer is also responsible for approximately 13.4% of cancer-related mortality among females [2]. Early detection remains the cornerstone for improving survival outcomes and reducing disease-related morbidity and mortality.

There are three major tools for the early detection of breast cancer: (1) self-breast examination (SBE), (2) fine needle aspiration cytology, and (3) mammography [3]. Self-breast examination involves systematic inspection and palpation of the breasts to identify any abnormal changes in breast tissue [4]. SBE is a simple, cost-effective, and non-invasive method that can be performed by women themselves without the need for specialized equipment or training.

Regular practice of SBE facilitates early identification of breast abnormalities, including developing neoplasms, at a stage when treatment modalities such as surgery and adjuvant therapies are more effective, thereby improving life expectancy [5]. Several studies have demonstrated that SBE has a positive impact on the early detection of breast neoplasms, particularly among younger women, in whom mammographic screening is less commonly practiced. However, inadequate knowledge and unfavourable attitudes toward SBE remain major barriers to its regular practice. Hence, health education interventions play a vital role in improving awareness, knowledge, and attitude regarding SBE among young women.

MATERIALS AND METHODS

An interventional study was conducted among physiotherapy students at the Physiotherapy College of B.J. Medical College, Ahmedabad. The college comprises students from first year to final year of the physiotherapy course. A convenience sampling method was used to recruit study participants.

All physiotherapy students present at the time of baseline data collection and willing to participate were included in the study. Students who were absent on the day of data collection or unwilling to participate were excluded. A total of 160 students were enrolled at baseline, while the remaining students were absent during data collection.

Prior permission was obtained from the Principal of the Physiotherapy College to conduct the study. Coordination meetings were held with class teachers of each academic year to schedule appropriate time and venue for baseline data collection and the planned educational intervention.

Data collection was carried out using a predesigned and structured questionnaire, administered both before and after the intervention. The questionnaire consisted of three sections: (1) socio-demographic profile, (2) knowledge regarding self-breast examination, and (3) attitude regarding self-breast examination. The validity of the questionnaire was ensured through pilot testing prior to the study.

Following baseline data collection, a structured teaching intervention was provided to students of all academic years using lectures, PowerPoint presentations, and live demonstrations on self-breast examination techniques. Post-intervention data were collected using the same questionnaire.

Statistical Analysis

All collected data were entered into Microsoft Excel 2019 and analysed using the same software. Each correct response in the knowledge and attitude sections was awarded 10 marks, while incorrect responses were given 0 marks. The maximum possible score was 60 for knowledge and 70 for attitude.

Mean knowledge and attitude scores before and after the intervention were calculated. A paired Student's *t*-test was applied to assess the statistical significance of changes in scores following the intervention. A *p*-value

<0.05 was considered statistically significant.

RESULTS

A total of 160 physiotherapy students participated in the study. Among them, 49 (30.6%) were first-year students, 59 (36.9%) were second-year students, and 52 (32.5%) were third-year students. The majority of participants, 114 (71.3%), belonged to the age group of less than 20 years, while 46 (28.7%) were aged between 20 and 30 years. At baseline, 61.8% of students had poor knowledge regarding self-breast examination, 36.87% had average knowledge, and only 1.25% demonstrated good knowledge. Following the educational intervention, there was a marked improvement in knowledge levels, with a substantial increase in the proportion of students in the good knowledge category (29.3%), while 8.12% remained in the poor knowledge category.

Before the intervention, most students exhibited average to good attitudes toward self-breast examination. After the intervention, a slight increase was observed in the proportion of students demonstrating a good attitude toward SBE (Figure 2).

Paired *t*-test analysis revealed that both knowledge and attitude scores showed statistically significant improvement following the intervention (p <0.001). The post-intervention knowledge scores demonstrated a significant increase compared to baseline values (Table 1).

Table 1: Comparison of Mean Knowledge and Attitude Scores Before and After Intervention

Variables	Before Intervention (Mean ± SD)	After Intervention (Mean ± SD)	*p*-value
Knowledge score	2.18 ± 1.10	4.87 ± 1.33	<0.001
Attitude score	3.41 ± 1.68	5.39 ± 1.46	<0.001

Paired t-test applied; p <0.001 considered highly significant.

DISCUSSION

Breast cancer remains a leading cause of cancer-related mortality among women worldwide, emphasizing the importance of preventive strategies such as self-breast examination. In the present study, baseline assessment revealed poor knowledge and suboptimal attitudes toward SBE among physiotherapy students, highlighting the existing gap in awareness even among health-related academic disciplines.

Similar findings have been reported in studies conducted in southwest Saudi Arabia and Bogotá, Colombia, where participants demonstrated inadequate knowledge regarding self-breast examination [6-7]. Following the educational intervention in the present study, there was a statistically significant improvement in both knowledge and attitude scores, underscoring the effectiveness of structured health education programs.

Masso-Calderón AM et al. also reported significant improvement in SBE knowledge and practice following educational interventions, with sustained improvements observed at one, three, and six-months post-intervention [6]. Similarly, studies by Abera H et al. [7] among midwifery students and Rabia H et al. demonstrated substantial improvements in correct response rates and SBE practices following training interventions.

These findings collectively reinforce the role of health education in improving knowledge and attitude toward self-breast examination and highlight the importance of incorporating such interventions into health-professional training curricula.

Declaration by Authors

Ethical Approval: Institutional permission was obtained prior to conduct of the study.

Acknowledgement: None

Source of Funding: Nil

Conflict of Interest: None declared

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How to cite this article: Ishita Adhyapak, Imran Burmawala. Impact of health education on knowledge and attitude regarding self-breast examination among physiotherapy students. *Int J Health Sci Res.* 2026; 16(3):216-219. DOI: *10.52403/ijhsr.20260326*

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