

Moving the Boundaries: Peer Learning between Nursing and Physiotherapy Students

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ABSTRACT

Aim: The objective of this study was to explore nursing and physiotherapy students' views on peer learning as an innovative learning strategy.

Background: Departments of nursing and physiotherapy at Oslo University College, Norway, initiated a cooperative project based on interdisciplinary and cross-level learning in patient transfer activities. Patient transfer is based on natural human body movement patterns, ergonomics, and communication skills. The project involved partnering second-year physiotherapy students as tutors with first-year nursing students as tutees in a peer learning relationship.

Methods: In order to evaluate the project 990 students from both groups completed a questionnaire with closed- and open-ended questions.

Results: Even though the nursing students had a significantly higher score for theoretical knowledge and practical skills, both groups of students seemed to agree that learning patient transfer with and from each other were considered advantageous.

Conclusions: The findings indicate that students valued the use value of this innovative method for interdisciplinary and cross-level learning.

KEY WORDS: interdisciplinary learning, peer tutoring, patient transfer, nursing students, physiotherapy students

Introduction

Health educators are challenged to enable students to develop sustainable knowledge, attitudes, and skills in the fields of patient handling, care, treatment, and rehabilitation. Furthermore, there is a need for health promotion and preventative work, and educational institutions have an obligation to educate competent and reflective students to meet future professional requirements (1,2,3). Regarding new challenges, The Quality Reform of Higher Education in Norway (4) requires that students collaborate and take more responsibility for their own learning. One such challenge is to learn patient transfer which is an essential practical skill in nursing and physiotherapy curricula, where patients are assisted in moving, or they are moved horizontally, instead of being lifted vertically (3). The topic is also relevant to prevent musculoskeletal injury and pain amongst healthcare workers, a common reason for sick leave, as reported in UK, Netherlands, and Norway (5,6,7,8).

The development of clinical skills such as patient transfer is an area suitable for peer tutoring and peer learning. In order to take advantage of skills-training strategies that could be beneficial for both physiotherapy and nursing students, the Departments of Nursing and Physiotherapy at Oslo University College, Norway, initiated a cooperative project based on interdisciplinary and cross-level learning in patient transfer activities. The primary learning strategy referred to in this project is peer tutoring, where second-year physiotherapy students tutor first-year nursing students in the skills laboratory on how to assist patients in moving, by an optimal use of the patients' own resources. Objectives for the project were to create a safe learning environment that stimulated interdisciplinary collaboration, and a collective responsibility for learning, and reflecting on learning.

In order to evaluate this project from the viewpoint of both groups of students, a cross sectional survey was conducted in 2004 and 2005 involving two different cohorts of students. Drawing on data from the questionnaires, the aim of this article is to address the following research question: What are the views of nursing and physiotherapy students concerning a peer learning programme in patient transfer?

Background

In order to avoid harm and distress during patient transfer, collaboration between patient and helper is essential. Hence, patients are encouraged to be physically and mentally involved in order to achieve an optimal use of their own resources (9,10,11). Factors such as patients suffering from movement disabilities and being overweight, as well as obstacles like bedroom furniture, may limit the patients' mobility and increase the danger of muscle-skeletal injuries for both patient and staff involved in daily care (6). It is therefore important that healthcare

workers as well as patients fully understand the tasks of assisted body movement and transfer based on natural movement patterns, body awareness, communication skills as well as ergonomic skills, which are all implemented in the project in the skills laboratory (9).

The analytical approach to learning in this project is based on socio-cultural theories with peer learning and tutoring as pedagogical tools. The purpose of this approach is to gain knowledge, understanding and skills by mutual help and support in an informal and safe educational atmosphere (12,13). Knowledge increases when group members share and combine knowledge through response, questions, experimentation, and working together on a task (14). Furthermore, social interaction and dialogue play an important role, and the challenge is to develop an educational discourse in the learning group. Hence, learning becomes a social practice requiring group members to take active roles as learners (15,16,17), and peer learning could facilitate students' engagement in reflection and the exploration of ideas when the authority of the teacher does not create pressure (18). Nevertheless, the teacher plays an important role in the successful implementation of peer learning and tutoring both as the coordinator of learning activities and as mediator and producer of outcomes.

Peer tutoring is a way of organising the peer learning process and is characterised by specific role-taking among peers; the roles being tutors and tutees (19). Often dialogue and interaction with a more competent student played an important role in motivation and thus learning outcomes (15,20). Hogan and Tudge (20) cite Vygotsky and demonstrated that peer collaboration can facilitate better performance when one student is more advanced, and problem solving ability can improve when they collaborated. The authors underlined that interpersonal processes between students involved each participant, motivating and boosting competence to enable a mutual support system, within the relationship. As Falchikov (21) explained, peer tutoring will give the helper an opportunity to reflect on learning, suggesting that 'to teach is to learn twice'. According to Fantuzzo and Rohrebeck (22), peer tutoring among students of the same profession was an effective educational strategy for learners because the method promoted academic gains as well as social skills development. Further, Glass and Walter (23) discussed the importance of peer tutoring in nursing education in a qualitative research project with six nursing students and one nurse coordinator. The study concluded that shared caring, learning, and reciprocity are important in peer tutoring where support of one another is established through the engendering of peer-tutoring relationships. In an Australian study, Goldsmith, Stewart & Ferguson (24) described the partnering of first and third-year nursing students for clinical skills practice sessions, highlighting the peer tutoring strategy involving partnering as beneficial to both groups of students with regard to the development of competences

in clinical skills. A cross-level study from child welfare education in Norway (25) concluded that when third-year students act as peer tutors for first-year students, tutors' learning potential in different areas critical to their future professional work increases in parallel with the tutees. Another Norwegian study focused on how 3rd year nursing students carried out their role as supervisors for 1st year students in the skills laboratory. The results indicated that apart from enhancing practical skill learning in 1st year students, the assignment also provided an arena for developing competence in supervision in third year students (26).

There seems, however, to be a lack of studies focusing on the development of skills in patient transfer particularly as an interdisciplinary and cross-level learning strategy.

Peer tutoring in the clinical skills laboratory

At Oslo University College (OUC) a project based on interdisciplinary and cross-level learning was initiated by a staff member at the Faculty of Health Sciences, Department of Physiotherapy, in cooperation with two faculties of nursing, one at OUC, and the second at another college in Oslo. Although the study programs offered patient transfer in their curriculum, the physiotherapy program devotes more time to this topic than the nursing program (Figure 1). The tasks to be practiced were natural body movements and daily activities in transfer as follows: moving up, moving sideways, rolling over, sitting up, and getting in and out of bed; sitting down and rising from a chair, moving from a chair to a wheelchair; and getting up from the floor to a chair and to the bed. All activities require patient transfer skills, body awareness, ergonomic and communication skills (9). To qualify for their role as tutors and tutees, the project involved thorough planning for their respective roles on the part of the students. Both groups of students were regarded as learners, irrespective of their roles. The intention was that the tutoring role should promote self-esteem and leadership as part of the physiotherapy instructor syllabus simultaneously as the tutees should take an active part in reciprocal learning processes.

In the clinical skills laboratory, the students worked in groups without teacher mediation. Prior to skill training, academic staff prepared the framework and organisation of the project as well as giving lectures and demonstrations on the topic, while the practical skill training in the clinical skills laboratory was organised and carried out by the students. However, one teacher was present for support as needed. The clinical skills laboratory provided fully made up hospital beds and patient transfer devices. The physiotherapy students acted as tutors for two different groups of nursing students on two different days.

Both interdisciplinary and cross-level groups collaborated on pro-

blem solving and reflected on own learning. As tutees, the nursing students had an opportunity to receive immediate feedback on their performance. At the end of each tutorial the physiotherapy student was given time to ask the nursing students for feedback on their role as tutor. Hence, as tutors the physiotherapy students had an opportunity to readjust their role in preparation for the second tutorial.

Method

Design

In order to evaluate the project, a cross-sectional survey design was developed on the basis of earlier evaluations. Section one of the instrument provided demographic data concerning study program, gender, and age. Section 2 included six close-ended questions with response alternatives on a Likert type scale with four alternatives: 1=strongly agree, 2=partly agree, 3=partly disagree, and 4=strongly disagree (26). The six questions were:

- Tutoring was a reciprocal learning process between physiotherapy students and nursing students
- The group took collective learning responsibility
- There was an increase in theoretical knowledge in patient transfer
- There was an increase in practical skills abilities
- Tutoring enhanced reflection on learning
- More peer learning is requested in the study programme
- Section 3 consisted of eight open-ended questions within the frame of section two. In order to get more in-depth understanding of learning experiences, the students were asked to elaborate on their perception of the collaboration from the viewpoint of each group.

Participants

Convenience sampling was used to recruit students from four classes of physiotherapy students and 14 classes of nursing students from two different nursing faculties.

Data collection

The questionnaires were answered by the nursing students immediately after each tutorial. Questionnaires for physiotherapy students were answered after completing the second launch tutorial. All questionnaires were to be answered individually. The questionnaires were collected by nursing staff in the clinical skills laboratory immediately after each tutorial. The physiotherapy students handed in their own questionnaires at the physiotherapy department after the second tutorial.

Figure 1.

Third-semester physiotherapy students

Week one: primarily staff responsibility	Lecture, demo, skill training with staff (5 hrs)	Skill training with staff (3 hrs)	Skill training without staff (3-4 hrs)	Demonstration and skill training with external expert on patient transfer (4 hrs)
Week two: primarily student responsibility	Prepare a tutor programme for the nursing students	Prepare skills and educational strategy for the nursing students	Each student tutors a group of three tutees in the skills laboratory (3 hrs)	Each student tutors a second group of three tutees (3 hrs)
First-semester nursing students				
Week one: primarily staff responsibility	Lecture and demonstration of patient transfer with external expert (3 hrs)			
Week two: primarily students responsibility	Peer learning at skills laboratory: Nursing students tutored by physiotherapy student (3hrs)			

Reliability and validity

The questionnaires were developed from earlier evaluations of the project (1999-2002) and a pilot study in 2003. The physiotherapy students and the nursing students answered questionnaires that were adjusted to their roles as tutors vs. tutees. There were no reports of difficulties in answering the questions. The response rate for nursing students was 85% and for physiotherapy students 70%, this discrepancy may be related to the different methods of collecting the questionnaires. Although there was a challenge connected to the analysis of the eight open ended questions, the qualitative data has contributed to a more nuanced and valid understanding of the students' views of the peer learning programme in patient transfer.

Analysis

Data in section one and two were analysed using SPSS-PC (version 16.0). P-values of less than 0.05 were considered indicators of statistical significance. Mean, standard deviations, and 95% confidence intervals were calculated. The Pearson's rank correlation coefficient was used to investigate the relationship between pairs of variables. Statistical tests were performed to determine whether the differences were significant. A chi-square test was used to check for difference in responses from physiotherapy students and nursing students.

The aim of the qualitative questions in section three was to complement the survey with detailed and more nuanced descriptions of views on the peer learning program in patient transfer. The analysis of the open-ended questions was conducted according to the following steps:

1. All answers to questions were summarized and categorized in line with the main themes: learning experiences and collaboration.
2. A hermeneutic approach (27) was used where the aim was a reflective interpretation of the themes in focus. Following Kvale (28), the

analysis involved increasing levels of abstraction. This analytical process implied a transition from description of the themes to a more comprehensive understanding (28).

Ethical considerations

Ethical considerations implied that necessary approvals from the two faculties and from The Norwegian Data Inspectorate were obtained. All students received oral and written information about the survey; however, there was no need for signing a letter of consent. They were informed that information would be handled anonymously, confidentiality would be assured, and that participation was voluntary with the right to withdraw from the project at any time.

Results

Sample characteristics

The respondents were physiotherapy students (n=106) and nursing students (n= 884). The respondents represented both male and female students, from different bachelor programs and academic years. There were significantly more females than males among the nursing students compared with the physiotherapy students. The mean age for physiotherapy students was 23.3 years with a minimum age of 19 and a maximum age of 52. The mean age for the nursing students was 23.8 years with a minimum age of 18 and a maximum age of 51. The summaries from the two nursing schools will be presented together as there was no significant difference between the two groups.

Perceptions of the peer learning experience

Table 1 shows the distribution of the answers to the six close-ended

Table 1. Comparison between nursing and physiotherapy students regarding peer learning (Pearson's r)

Item	Students	Response category				p-value
		Strongly agree n (%)	Partly agree n (%)	Partly disagree n (%)	Strongly disagree n (%)	
Tutoring was reciprocal learning between physiotherapy and nursing student	Nursing students	597 (68)	229 (26.1)	49 (5.6)	3 (0.3)	22.6 <.000
	Physiotherapy students	53 (50.0)	38 (35.8)	12 (11.3)	3 (2.8)	
The group took responsibility for learning together	Nursing students	794 (89.8)	87 (9.8)	3 (0.3)	0 (0.0)	29.2 <.000
	Physiotherapy students	63 (59.4)	38 (35.8)	5 (4.7)	0 (0.0)	
I increased my theoretical knowledge in patient transfer activities	Nursing students	666 (75.4)	197 (22.3)	17 (1.9)	3 (0.3)	29.2 <.000
	Physiotherapy students	60 (56.6)	35 (33.0)	9 (8.5)	2 (1.9)	
I increased my practical skills in patient transfer activities	Nursing students	765 (86.3)	111 (12.5)	8 (0.9)	0 (0.0)	17.1 .001
	Physiotherapy students	79 (74.5)	22 (20.5)	5 (4.7)	0 (0.0)	
Tutoring enhanced my reflection on my own learning	Nursing students	578 (65.7)	271 (30.8)	25 (2.8)	5 (0.6)	14.6 .006
	Physiotherapy students	53 (50.0)	45 (42.5)	8 (7.5)	0 (0.0)	
I would like more peer learning in my study programme	Nursing students	651 (73.9)	203 (23.0)	22 (2.5)	5 (0.6)	83.6 <.000
	Physiotherapy students	36 (34.0)	54 (50.9)	11 (10.4)	4 (4.7)	

questions. The comparison between nursing and physiotherapy students shows *p*-values below 0.05 for all questions. The nursing students reported significantly more positive results.

Regarding the association between age and answers to the six common questions, the divergent scoring on the question 'Tutoring involved reciprocal learning between physiotherapy student and nursing student' was significant as the older students more frequently agreed on the value of reciprocal learning ($r=0.10$, $p=0.002$). As to gender, there was a significant difference between men and women for only one of the questions. Female students more frequently agreed to the question 'The group took responsibility together for learning' than did the male students ($r=0.17$, $p<0.000$).

In-depth views on learning as tutors

The open-ended questions explored students' views on learning and collaboration from the perspective of their roles as tutors and tutees. The tutoring role seemed to reinforce the physiotherapy students' recognition of their knowledge and skills; as described by several students: 'I did not realize until I helped the others that I actually knew this much about patient transfer'. The attentiveness of the tutees tended to support this experience: 'I discovered I knew more than them, this made me feel comfortable when helping them find good ways of conducting patient transfer, they paid attention and were eager to learn'. Even if several of the physiotherapy students also expressed that they were nervous and insecure during the first session, they seemed to be comforted by the fact that they were more knowledgeable than the tutees: 'Tutoring was not that scary considering that we would tutor 1st semester students; they did not know so much'. Or: 'I have competences in body movement, exercise instruction, physical therapy, and ergonomics – the nursing students have no training in either, so I had a lot to offer'.

Physiotherapy students were, however, also challenged by the tutees. One example was when nursing students referred to their experiences with patients in the hospital wards. This stimulated the physiotherapy students to create different scenarios for the tutees to work on, resulting in an agreement on 'many different ways of patient transfer in practice'.

In-depth views on learning as tutees

From the viewpoint of the tutees learning together with a more competent physiotherapy student, the following comment was made: 'The physiotherapy students seemed well prepared, well organized, and they knew exactly what to teach, so learning different ways of patient transfer was actually rather easy'. The answers also reflected the conclusion that peer learning was more enjoyable than learning from a teacher: 'It is much better to learn from a fellow student compared to having a teacher around'. Quite a few of the answers also reflected enthusiasm: 'Wow, this was fun, I did not know learning could be so engaging. This day has just been great.' Being challenged in an informal atmosphere was considered as a fruitful way of learning: 'We were challenged to find different solutions on how to conduct patient transfer, this was very good, we could try out ideas, discuss, make some mistakes without getting into trouble, and we were three in each group which was just fine'. The value of having the opportunity to explore their own ways of performing was appreciated: 'the tutor gave us the opportunity to try out different methods before she did any tutoring, and she actually waited until we got stuck before she showed us some sensible solutions. I have learned several smart tricks about doing transfer with patients who are a lot heavier than I am'. Some nursing students seemed to be conscious about their own work experience, and felt they could contribute to the learning situation: 'We realised we had experience and skills when we had to solve problems together'.

Discussion

The findings indicate that learning patient transfer with and from each other in the clinical skills laboratory was considered advantageous for both nursing students and physiotherapy students. Even though the nursing students scored higher on the learning and skill session for all

reported questions (Table 1), both groups of students report a collective responsibility for the learning process. Not surprisingly, the nursing students report a slightly higher score for increased practical skills and theoretical knowledge in patient transfer. Lower scores from the physiotherapy students may indicate their role as tutors and being the more knowledgeable of the two groups on this particular subject. Nevertheless, the high scores in reflection and reciprocal activities from both student groups underline the benefits of such collaboration for social enhancement and the development of competences in clinical skills (24, 22).

This interdisciplinary assessment supports that social interaction and dialogue as mentioned by Dysthe (15), may be beneficial to students' problem-solving abilities when they share knowledge and work together. Nursing students seem to regard their tutors as well-informed and skilled in patient transfer, and high scores on perceived learning outcomes from nursing students seem to support such statements. Furthermore, the tutees were challenged to find ways and try out solutions, indicating 'trial and error' as part of a problem-solving approach to learn how to conduct patient transfer. Olivera and Straus (14) emphasize that experimentation, response and questions may increase knowledge when group members work together on a task. The tutee may be less reticent about asking a peer tutor 'stupid questions' than they would of a teacher (21). The qualitative data reveal engagement and enjoyment from the viewpoint of some of the nursing students, which indicate a learning environment that was non-threatening and supportive. Topping et al (12) and Henning et al (13) agree that learning is often beneficial when students learn in an informal and safe environment and are given opportunities to reflect on own learning. The background role of the teacher authority may have, as suggested by Boud et al (18), contributed to create a relaxed atmosphere that afforded possibilities to engage in reflection and exploration.

As reported in the open-ended questionnaire, the tutoring role gave the physiotherapy students a chance to acknowledge and verify their knowledge and skills, supporting their self-esteem and security as future professionals within this particular topic. This is reinforced by the high scores on learning outcomes reported by the physiotherapy students, which may indicate that the tutoring role, as expressed by Falchikov (21), gives the opportunity of 'learning twice'. Being the more advanced student, the tutor's role in giving feedback boosts confidence and helps a peer to achieve common understanding (20). Fougner et al (25) reports similar results from a cross-level study in child welfare education. Peer-tutoring seems to increase the third-year students' learning potential. In line with Glass and Walter (23) our findings support the notion that shared learning and reciprocity are important in peer tutoring. The reciprocal hallmark of the tutor- and tutee relation was made particularly visible when physiotherapy students reported that they were challenged by contributions from the nursing students when being told about patient transfer experiences in hospitals. This seems to foster a negotiable attitude to skills acquisition, simultaneously acknowledging contributions from the tutees. In this way the students are enabled to motivate and help each other by allowing for individual experiences in the learning situation. Sharing experiences is also a way to contextualize and bring up for discussion the transfer of patients (9,10,11).

Similar to findings in Christiansen et al study (26), the tutors considered themselves as more knowledgeable than the tutees. A critical question is, however, whether peer tutoring ensures a raised professional standard in patient transfer. This question underlines the importance of basic qualification in patient transfer among the physiotherapy students, as well as in supervision, in order to develop their capacity to be assessors of learning. In other words, the teacher's role in peer learning assignments is to organize for such preparations, as well as showing a distanced yet supportive and attentive attitude during the performance.

There seems to be a lack of studies focusing on interdisciplinary cross-level learning strategy as presented in our project, which suggests that the transference value to other clinical skills teaching situations in higher education needs to be further explored.

Even if there seemed to be a positive attitude among the students

towards peer tutoring as a learning strategy, the physiotherapy students scored lower on the request for more peer learning in the study program. Although the data does not explore reasons for this, it should be taken into account in future planning of peer tutoring assignments.

Conclusion

The evaluation of this particular peer learning and tutoring assignment in the clinical skills laboratory indicates an innovative way of interdisciplinary and cross-level learning. Even if the nursing students had a significantly higher score on increased theoretical knowledge and practical skills, both student groups appear to agree that learning patient transfer with and from each other is advantageous. The qualitative data gave some nuances on ways in which peer collaboration may contribute to learning. The physiotherapy students seem to have an attentive, flexible way of carrying out their roles as tutors, meeting the requirements of the situation at hand. Encouraging the tutees to find solutions on how to conduct transfer seem to nourish reflection and problem-solving which is beneficial to learning. Contributions from the nursing students seem to have stimulated ways on how to conduct the tasks. Our data does not cover what actually goes on during the skill training sessions, which calls for further observational studies. In order to widen the perspective on interdisciplinary and cross-level peer learning assignments, it would be of great interest to explore the effect on future collaboration between nurses and physiotherapists in the workplace.

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