PRE-TEST AND POST-TEST EVALUATION OF STUDENTS' PERCEPTIONS OF A COLLABORATIVE CLINICAL EDUCATION MODEL ON THE LEARNING ENVIRONMENT

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Accepted for publication October 2005

Key words: clinical, practicum, undergraduate, collaboration, psycho-social

ABSTRACT

Objective:

This study investigated the impact of a collaborative clinical education model on students' perception of the psycho-social learning environment.

Design:

A pre-test and post-test quasi experimental design.

Setting:

A tertiary referral centre.

Subjects:

Second and third year undergraduate nursing students were asked to rate their perceptions of the psycho-social learning environment at the completion of the clinical practicum.

Tool:

The tool used to measure psycho-social perceptions of the clinical learning environment was the Clinical Learning Environment Inventory previously validated in Australian health care contexts.

Intervention:

A collaborative arrangement with the university and ward staff where eight students are placed on a ward and a ward staff member is paid by the university to be 'off-line' from a clinical workload to supervise the students. This is in contrast to the standard facilitation model where students are placed with registered nurses in different localities under the supervision of a 'roving' registered nurse paid by the university.

Results:

No significant differences were found in pre-test mean scores when comparing wards. Significant differences in post-test scores for the intervention group were identified in the sub scales of Student Involvement, Satisfaction, Personalisation and Task Orientation.

Conclusions:

The adoption of a collaborative clinical education model where students are integrated into the ward team and the team is responsible for student learning can positively enhance capacity for student learning during their clinical practicum.

INTRODUCTION

Integration of theory into practice is an important component of undergraduate education that is ideally maximized through effective clinical placements (Morgan 1991). There are however considerable complexities and considerations of placing students in tertiary organisations to progress learning and ensure the adequate preparation of the undergraduate. While the environment is recognised as a key success factor in effective clinical learning it is multifaceted (Dunn and Hansford 1997). The literature recognises that a supportive environment for students and opportunities for students to practise activities are important in continuous learning (Pearcey and Elliott 2004). Collaboration between academic and health service sectors is constantly being strengthened to enhance the support for student learning (McKenna and Wellard 2004; Richardson et al 2000; Gassner et al 1999; Davies et al 1999).

LITERATURE REVIEW

Collaboration in clinical placement models

The basis of collaboration that is presently being progressed is to foster greater links between the health service sector and tertiary institutions, to ensure students have access to quality clinical experiences. Many approaches and models based on collaboration and partnership have been developed in an attempt to maximize the benefits of student learning in a cost effective manner agreeable to both the tertiary institution and health service provider, often an acute health care facility (Davies et al 1999; Edgecombe et al 1999). The advantage of collaboration is the creation of an environment conducive to student learning.

The psycho-social learning environment

A key aspect of collaboration is enhancing psycho-social aspects of the clinical environment; a major consideration in student learning. Students learn in environments where they are nurtured (Davey 2003). They respond when staff are open in their approach and they can easily communicate with them because they are ostensibly largely dependant on staff in the clinical learning situation (Lewis 1998). Clinicians need to create this type of environment if they are to be effective teachers (Clark et al 2004). Furthermore, student learning is enhanced when staff care about them (Redmond and Sorrell 1996).

Support for students is best demonstrated through effective co-operation between students and staff members, becoming part of the team, and a good atmosphere (Papp et al 2003). Specific behaviours that can successfully contribute to such a positive climate include: providing opportunities for students to be responsible for their actions; creating situations for them to practice tasks in a safe environment; and constructively supervising their work, including the provision of feedback (Lofmark and Wirkblad 2001).

The clinical education unit

The Clinical Education Unit (CEU) is a partnership arrangement whereby the students undertaking their undergraduate education join the 'team' of nurses in the ward providing care to clients (Richardson et al 2000). The features of the CEU have been informed through current literature on successful practices that enhance the psycho-social features of the clinical learning (Pearcey and Elliott 2004; Papp et al 2003; Lofmark and Wikblad 2001).

The first initiative of the CEU was to incorporate the student as part of the team. This is achieved by eight students being placed in one ward area and a staff member from that area funded by the university being responsible for supervision of those students. Students are orientated and supervised by clinically current staff members (Baird et al 1994). All nursing staff facilitate student learning opportunities through their respective roles and responsibilities during the student placement. This can often promote ownership of students and thereby facilitate more appropriate and student centered learning experiences (Melander and Roberts 1994). The specific rostering and shifts worked by the students are negotiated with the particular ward adopting this model.

Students are 'buddied' with registered nurses carrying a clinical workload (Clark and Henderson 2005). The students are perceived as part of the team and, where possible, these students return on their next clinical practicum. Students' learning is guided and assessed by one registered nurse, the supervisor of clinical learning, from the designated ward area, who is funded by the tertiary institution to be 'off-lined' from a clinical workload. The supervisor of clinical learning has overall day-to-day responsibility for the students (Queensland Health Guidelines 2001). This position has been identified as successful in the promotion of a learning culture (Clarke, Gibb and Ramprogus 2003).

Evaluation of psycho-social considerations of collaboration

While many collaborative initiatives have been evaluated these are often descriptive in nature and unit specific (Davies et al 1999; Gonda et al 1999). This present study seeks to evaluate the effect of the CEU collaborative model when compared with the standard facilitation model, where the supervisor of clinical education 'roves' around a number of areas which he/she may or may not be familiar. As the impact of effective collaboration is ideally on the psycho-social aspects of the clinical learning environment, this was the measure used to determine differences between the CEU and standard facilitation model.

AIM

To evaluate the impact of Clinical Education Units on students' perception of psycho-social learning environments.

METHOD

A pre-test and post-test quasi experimental design was used to assess psycho-social attributes inherent in the clinical learning environment. The pre-test was undertaken after the first clinical practicum for the year when all students in the health facility were supervised under the standard facilitation model. The standard facilitation model involves students partnering with a registered nurse on a ward and this relationship is overseen by one roving supervisor for each eight students and paid by the university. The post-test was undertaken after the second clinical practicum in the same year. During the second clinical practicum students in the control group were supervised under the standard facilitation model and the intervention group trialed the Clinical Education Unit (CEU) model. The same group of wards were used in the pre-test and post-tests.

Ethical considerations

Feedback was collected as part of routine quality assurance that is required when new initiatives are introduced into the organisation. The collection of information conformed to NHMRC advice (2003): anonymity was maintained; there was no infringement of privacy; and no burden was imposed on staff or patients as there was no departure from routine practice. The research design did not meet the criteria for requiring ethical approval from the hospital ethics committee, rather approval was granted at a local level. Students were asked to provide feedback about their clinical environment through completion of the survey. No coercion for participation took place.

Subjects

Participants were second or third year undergraduate students studying a Bachelor of Nursing at a University in South East Queensland undertaking their clinical practicum at a tertiary referral facility during 2003. For the purposes of the following analyses, a full sample of 370 respondents was included. This sample consisted of 248 respondents who had been placed in 15 wards where there was no change to the clinical placement utilised, and 122 respondents who had been placed in five wards that had undergone a change in clinical placement model. Within the five wards where there had been a change in the clinical placement model employed, 39 respondents were categorised as undertaking clinical placement under the standard facilitation model (prior to the changed practice of supervision) and 83 respondents had undertaken clinical placement in the CEU model (model for changed practice).

Tool

The Clinical Learning Environment Inventory (CLEI) was specifically developed to assist researchers to assess student nurses' perception of the psycho-social aspects of the clinical learning environment (Chan 2001; Chan 2003). This tool acknowledges that learning takes place in a dynamic environment where patient care is nurses' core business. The tool identifies a number of factors, namely, individualisation, innovation, involvement, personalisation and task orientation that student nurses identified as highly desirable if their learning was to be effectively facilitated (Chan 2003). The scale descriptors are as follows:

Individualisation	Extent to which students are allowed to make decisions and are treated differentially according to ability or interest
Innovation	Extent to which clinical teacher/clinician plans new, interesting and productive ward experiences, teaching techniques, learning activities and patient allocation
Involvement	Extent to which students participate actively and attentively in hospital ward activities
Personalisation	Emphasis on opportunities for individual student to interact with clinical teacher/clinician and on concern for student's personal welfare
Task orientation	Extent to which ward activities are clear and well organised

Scoring of items

The items have been scored differently to the method used by Chan (2001, 2002, 2003) where item non-response was given a score of 3 on a scale of one to five (1 = strongly disagree, 2 = disagree, 3 = no response, 4 = agree, 5 = strongly agree). This process has not been applied in the following analyses due to concerns regarding the validity of assigning non-response a valid value within an overall score. It is not necessarily appropriate to assume that non-response is due to the respondent's desire to answer an item with a response of 'unsure' – respondents may have missed the item, may object to some component of the item or may not have responded due to a range of other reasons. Accordingly, each variable has been scored using a four point scale where 1 = strongly disagree, 2 = disagree, 3 = agree and 4 = strongly agree. Where non-response has occurred, the item was excluded.

Scales

As small variations were made in the CLEI the internal reliability of all subscales were calculated for the revised survey.

Individualisation

The Individualisation scale is comprised of seven items based on the work of Chan (2001, 2002, 2003). The Individualisation scale was found to be internally reliable (Cronbach alpha coefficient of 0.68).

Student involvement

Student Involvement was measured using a scale of six of the seven items included in the original CLEI scale. One item was excluded from the scale due to concerns regarding its suitability to the study sample utilised. The Cronbach alpha coefficient for this modified scale was 0.62, supporting the assertion that the scale has retained its internal reliability with the deletion of one of the seven items originally included.

Satisfaction

The Satisfaction scale included in the study consisted of the seven items detailed by Chan in the Clinical Learning Environment Inventory (2001, 2002, 2003). A Cronbach alpha coefficient of 0.88 was achieved for this scale, demonstrating a high level of internal consistency.

Innovation

Innovation was measured using the seven items derived directly from the Clinical Learning Environment Inventory (Chan 2001, 2002, 2003). The internal reliability of the Innovation scale was found to be maintained (Cronbach alpha coefficient of 0.61).

Personalisation

The personalisation scale developed by Chan (2001, 2002, 2003) was modified for the purposes of this study. Only six items from the original seven item scale were

Table 1: CLEI scale scores pre-test – comparison of facilitation scores in control wards and wards that underwent change

Ward	Individualisation	Student involvement	Satisfaction	Innovation	Personalisation	Task orientation
No change	19.98	18.55	23.29	19.72	19.86	21.58
Change	19.46	18.23	24.16	20.42	19.58	22.23
p-value	00.319	00.587	00.194	00.134	00.586	00.205

Table 2: CLEI scale scores post-test – comparison of facilitation scores in control wards and CEU scores for wards that underwent change

Ward	Individualisation	Student involvement	Satisfaction	Innovation	Personalisation	Task orientation
Facilitation	20.55	18.65	23.37	19.81	20.16	21.51
CEU	20.84	19.46	24.65	20.51	21.15	22.57
p-value	00.517	00.037*	00.027*	00.116	00.019*	00.012*

* denotes significance at the 0.05 level

included in the study due to questions relating to the suitability of the seventh item in the selected sample. Internal consistency of the modified scale was retained, with a Cronbach alpha coefficient of 0.68 obtained for this scale.

Task orientation

The task orientation scale used in analysis included seven items derived from the Clinical Learning Environment Inventory (Chan 2001, 2002, 2003). The internal reliability of this scale was also found to be maintained (Cronbach alpha coefficient of 0.72).

Significant differences in post-test scores for the intervention group were identified in the scales of student involvement, satisfaction, personalisation and task orientation. It must be noted that a relatively small sample was available for the CEU group.

Individualisation

In the post-test score the CEU model yielded a higher score than the standard facilitation model, with scores of 20.84 for the CEU model and 20.55 for the Facilitation model (table 2). These scores were not significantly different. Of interest is that all the post-test scores were higher across all ward areas for individualisation suggesting the presence of other changes that impacted on the whole organisation.

Student involvement

The post-test score for the group of students undertaking clinical placement within the standard facilitation model was 18.65, which was significantly less than the post-test score for the CEU model of 19.46 (table 2). Student involvement scores were found to have increased significantly in the CEUs (p=0.037).

Satisfaction

The post-test identified that there was a significant difference in satisfaction between the wards utilising the standard facilitation model and the CEU model (p=0.027). This is evident when comparing the score of 23.37 for wards utilising the standard facilitation model and a score of 24.65 for wards in which the CEU model was employed (table 2).

Innovation

There were no significant differences reported in innovation scores throughout the duration of the study, that is, no difference between the wards utilising the standard facilitation model or after implementation of the CEU.

Personalisation

Personalisation scale scores increased in all wards throughout the study. The CEUs rated a higher level in the post-test. The post-test score in the CEU, 21.15, was significantly different than 20.16 found in wards utilising the standard facilitation model (p=0.019) (table 2).

Task orientation

In terms of the assessment of task orientation using the CLEI scale, the variance before and after implementation of the CEU model was small. However, the post-test difference between wards where there was no change in model, and wards where the CEU model had been implemented was statistically significant (p=0.012), with respective scores of 21.51 and 22.57 (table 2).

DISCUSSION

Analysis of pre-test and post-test scores identified a statistically significant increase in four of the areas measuring psycho-social factors in the wards that trialed the CEU model. An increase in student involvement, personalisation and task orientation suggests that students perceived that their specific learning needs, that is, unique needs were addressed and catered for to a greater degree during their clinical placement in the CEUs. Student involvement is described as the 'extent to which students

participate actively and attentively in hospital ward activities' (Chan 2001, p.629). Personalisation is described as an 'emphasis on opportunities for individual students to interact with clinicians and concern for student's welfare' (Chan 2001, p.629).

These improved student involvement, personalisation and task orientation scores suggest that students perceived that the experiences in the CEU were tailored to their specific learning needs and circumstances. Accordingly students reported greater engagement during the practicum. Under such situations these factors possibly directly relate to each other. These factors combined indicate an enhanced clinical learning environment that facilitates student learning as the student feels comfortable and nurtured within the environment (Davey 2003).

This finding is commensurate with the intent of the CEU, that is, the student is recognised as part of the team. This differs from the standard facilitation model where students are 'placed' or 'buddied' with an RN who then assists student learning with the assistance of a 'roving' supervisor. The value of the student being incorporated into the team and the team being aware of their learning needs is central to learning in the clinical context (Papp et al 2003, Lofmark and Wikblad 2001).

Evidence that the wards that adopted the CEU may be more receptive to the placement of students is the analysis of the satisfaction scale. While satisfaction was significantly different at the post-test, it was also higher in the wards electing to pilot the CEU model as shown in table 1.

LIMITATIONS

As discussed, the wards that elected to adopt the new model were possibly more desirous of student placements as satisfaction was reasonably high in these wards in the pre-test (yet not significantly different from the control wards). Further to this, because of the discussion that was required prior to the implementation of the new model the intervention wards had a heightened awareness of the prospective students and their accompanying expectations. Nonetheless, the intervention wards had no further education.

Although the total sample size was reasonable (n=370) some cell sizes were still small. In particular, respondent numbers were small prior to implementation of change in those wards that adopted the CEU model. Due to some small cell sizes these results are exploratory in nature and warrant further investigation.

RECOMMENDATIONS

These findings suggest that collaboration between tertiary institutions and the health service sector, in particular, with specific individual wards or units to identify local strategies that will assist staff to effectively integrate students into their immediate environment could be instrumental in enhancing the clinical learning of students. Strategies that are developed in the local context with the consent of ward staff are more readily able to be sustained as staff are in agreement about how the students can best be accommodated. Students are therefore less likely to feel that they are an 'imposition', but rather, valued as a team member in the environment.

CONCLUSION

These preliminary findings suggest that creating a climate of interest and motivation in all staff responsible for student learning is possibly a strong factor in students' perception of the psycho-social learning as four of the six subscales were found to be significantly different in the post-test analysis. It would seem that the CEU is an effective strategy to facilitate psycho-social aspects of student learning however it must be realized that high levels of satisfaction were already in existence prior to the model. It may be that this model requires a particular interest by staff members prior to its implementation.

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