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Gardner, Glenn and Woollett, Kaylene and Daly, Naomi and Richardson, Bronwyn and Aitken, Leanne (2010) *Innovation in clinical learning for the acute hospital environment : nursing grand rounds*. Nursing Education Today, 30(8). pp. 737-741.

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Title: INNOVATION IN CLINICAL LEARNING FOR THE ACUTE HOSPITAL ENVIRONMENT: NURSING GRAND ROUNDS

Word count: 4.321

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Acknowledgements

This project was funded by a Queensland Health Nursing Research Grant. The authors wish to acknowledge the nursing staff on 9AS at Royal Brisbane and Women's Hospital for their participation in this project.

Key words: Nursing grand rounds, nursing work satisfaction, evidence based practice

SUMMARY

The literature reports that workload factors affect nurses' ability to fully engage in continuing professional development. Hence the work environment in acute care calls for innovative approaches to achieve continuous development of nursing practice and work satisfaction. This study employs a one group pre-test post-test design to test the effectiveness of Nursing Grand Rounds on nursing worklife satisfaction and work environment in an acute surgical ward. The effect of Nursing Grand Rounds was measured using the Nursing Worklife Satisfaction Scale and the Practice Environment Scale. There was no change between pre-and post-test on these measures but trends were evident in some component scores. Statistical results were inconclusive but observational data indicated that Nursing Grand Rounds was found to be feasible, well attended with tested processes for implementation in an acute care environment.

INTRODUCTION AND BACKGROUND

Optimal patient care is dependent upon various characteristics including nurse autonomy, the ability to make effective clinical decisions, integrated team work, and effective use of evidence (Kramer et al., 2007; Newhouse 2006). Autonomy and involvement in decision making have been identified as significant contributors to organisational climate characteristics such as job satisfaction and productivity (Scott et al., 1999). In turn, organisational climate has been identified as an essential element (in combination with staffing) in determining patient outcomes (Currie et al., 2005; Aiken 2001). There is also evidence to suggest that in some environments nurses have minimal confidence in their ability to make decisions, limited autonomy and role delineation, and hierarchical interaction with other health care team (Takase et al., 2006; Bartram et al., 2004; Manias and Street 2001). This work also indicates that the use of evidence to inform practice is not only limited, but often does not incorporate research based information into daily practice. Work undertaken in both the UK and Canada, has found that nurses place significant emphasis on information obtained from human sources, in other words the clinical nurse specialists and experienced clinical colleagues in all professions (Estabrooks et al., 2005; Thompson et al., 2001). This suggests that attempts to increase the use of evidence in clinical practice would do well to incorporate strategies that harness the influence of experienced clinicians (e.g. clinical nurse consultants) and enable information exchange between experienced and less experienced clinicians.

A primary vehicle for improving clinical knowledge development, evidence based practice and work satisfaction in nursing and other health disciplines is continuing professional development (Gould et al., 2007). Literature increasingly indicates, however, that factors such as heavy workloads and lack of 'backfill' cover, affect nurses' ability to fully engage in continuing professional development (Shields 2002). The work environment in acute care calls for innovative approaches to achieve continuous development of nursing practice and work satisfaction.

A strategy that may respond to this call is nursing grand rounds. Nursing grand rounds is a strategy that captures clinician's interests whilst also providing a regular venue for clinical learning and review of patient-centred, evidence-based nursing. The rounds have a long tradition in medical education and professional development (Mueller et al., 2006; Herbert and Wright 2003; Segovis et al., 2007). However these studies indicate that medical grand rounds sessions are mostly didactic, have reducing attendance and lack patient inclusion.

LITERATURE REVIEW

A comprehensive database search was conducted to investigate use of grand rounds in nursing and included CINAHL, Medline and PubMed. The main search was limited to English language and the last 20 years of publication (Jan 1989-Jan 2009 inclusive). Search terms included: grand rounds, nursing, nursing rounds, clinical rounds multidisciplinary grand rounds and a systematic combinations of these terms. The reference lists of retrieved papers were scanned manually to find other literature not identified in the electronic search.

The outcome of this systematic search revealed that literature on nursing rounds falls into three categories. Firstly, nursing rounds as a strategy for undergraduate education (Perry and Paterson 2005) with or without the involvement of professional development for experienced clinicians (Close and Castledine 2005a). Second nursing rounds as a patient monitoring strategy for meeting immediate patient care needs with no reported emphasis on clinical decision making or evidence based practice (Gardner et al., 2009; Meade et al., 2006; Close and Castledine 2005b; Castledine et al., 2005). Most relevant to this study was the literature on nursing rounds as a strategy for presentation forum in the style of medical grand rounds (Evans 1991; Furlong et al., 2007; Lannon 2005; Groenewold et al., 1991; Haisfield et al., 1991; Kreichelt and Spann 1991; Matheny and Wolff 1990).

Three recent papers reported on implementing nursing grand rounds (Lannon 2005; Furlong et al., 2007; Wolak et al., 2008). The authors conducted needs analysis surveys, exit evaluations and one used a knowledge assessment test (Wolak et al., 2008). Findings from these studies all support the grand rounds strategy in terms of knowledge acquisition and nurse satisfaction. The format of the nursing grand rounds reported in this body of literature was typically a conference style format in education facilities remote to the clinical environment. There are no reports to date on implementing nursing grand rounds in the clinical ward environment and evaluating the impact of this initiative on nurses' work satisfaction and the influence on patient care.

This project implemented nursing grand rounds in a busy general surgery environment, and piloted processes and instruments to study the effectiveness of this innovation in terms of nursing worklife satisfaction and work environment perceptions. This professional and practice development innovation has the potential to positively impact on patient outcomes both directly through promotion and facilitation of evidence based practice, and indirectly through improvement in work satisfaction and work environment (Scott et al., 1999; Aiken 2001; DiMeglio et al., 2005). The aim of this project was to establish the effectiveness, feasibility and processes for a nursing grand rounds intervention in the acute care environment.

METHODOLOGY

A strategy of implementing nursing grand rounds was designed to provide a point-of-care forum for nurse clinicians to reflect, collaborate and consider care planning with patient participation. A multi methods pilot study was implemented to, i) document and evaluate the implementation and ii) conduct a one group pre-test, post-test design to test the effectiveness of this strategy on nursing worklife satisfaction and perceptions of the work environment.

Sampling and Recruitment

The sample was all registered and enrolled nurses who were permanent full and part time staff in a specific acute surgical ward at the Royal Brisbane and Women's Hospital (RBWH) in Queensland Australia. Permanent full- and part-time registered and enrolled nursing staff members were supplied with an information and questionnaire package through the ward staff mail boxes. Additionally, information sessions were conducted at handover each day for a full week period and questions were encouraged and answered. Staff members were invited to complete the questionnaire if they consented to participation. The communication and information strategy was repeated at the end of the intervention phase for the post-test survey. There was a potential sample of 60 registered and enrolled nurses.

Instruments

The Nursing Worklife Satisfaction Scale (NWSS) was used to measure the effectiveness of attending nursing grand rounds on nurses' work satisfaction, and the Practice Environment Scale (PES) was used to measure the influence of this innovation on nurses' perception of the extent to which the practice environment facilitates professional nursing practice. The NWSS is organised into 2 parts to measure nurses' expectations and satisfaction. Part A of the NWSS, a numeric rating scale is used and percentage ranking compared across Time 1 and Time 2 on both an individual and group comparison. For Part B, scores are calculated on six components of work satisfaction: pay, autonomy, task requirements, organizational policies, professional status and interaction. Then the Index of Work Satisfaction (IWS) is constructed by averaging these scores to provide a single index. The instrument has been used extensively and is well validated (Best and Thurston 2004; Best and Thurston 2006; Lake 2002; Stamps 1997). Total scale reliability was reported at 0.85 with subscale reliability ranging from 0.70-0.90 and validity was established through factor analysis on factor loadings above 0.4 (Lake 2002). The instrument was used to identify areas of worklife that

may benefit from an organisational and professional intervention (Stamps 1997; Zangaro and Soeken 2005).

The PES consists of 31 items in five sub-scales that characterise the extent to which the environment of practice facilitates professional nursing practice (Christian and Norman 1998). The sub-scales include nurse participation in hospital affairs, staffing adequacy, contribution to quality of care, nurse manager ability, leadership and support for nurses and level of nurse/doctor relationship. Responses on these subscales are scored so that they lie in the range 1-4, where a higher score indicates a more positive perception. The reliability, individual level internal consistency $\alpha > 0.70$ and hospital level inter-item correlation of 0.64-0.91, and construct validity has been established (Christian and Norman 1998). Appropriate authorisation for use of both instruments was gained from the copyright holders.

Data collection

Pre-test

Consenting registered and enrolled nurses, in the test site were surveyed using the NWSS and the PES. Information on the characteristics of sample was also collected. Participants were asked to include an alphanumeric unique identifier code (for example their date and month of birth and mother's initials) on their questionnaire to enable individual and group comparison across Time 1 and Time 2.

Intervention

Following a two week interval after the final submission date for completion of the survey, the nursing rounds intervention was implemented. The intervention followed the following format:

- Nursing rounds were held approximately 40-60 mins one day a week on a day and time rotation, and in a room adjacent to the ward to allow maximum participation.

- 1 - 2 nurses each selected a patient and notified staff one day in advance.
- The patient with or without family/carer was a participant in the grand rounds
- Relevant nurse presented with support from senior nurses
- Consideration was given to requirements for patient privacy
- Staff members were encouraged to question and review. Patient/carer was supported to question & comment.
- Included a clinical librarian to support EBP through rapid search and dissemination of relevant literature.
- For specific patient issues, a specialist nurse consultant e.g. stomal therapist was included.
- The nurse unit manager attended and enabled nursing rounds to be held as scheduled.

The intervention phase was conducted over a four month period. This time frame was in response to available funding for research staff.

Post-test

Nursing staff on the ward was again surveyed using the NWSS and the PES four months after nursing rounds was implemented.

Observational data

Observational data were also collected weekly to record attendance, process and outcomes from the nursing grand rounds intervention. Data were recorded at each grand rounds according to the fields in Table 1. These observational data contributed to potential refinement of the nursing grand rounds strategy, the influence on clinical practice and provided information on sustainability of the forum.

Table 1: Observational data collection

<u>Week:</u>	Patient/family included	NGR Topic/s	Participation & debate	Influence on nursing care planning
<i>Recorded number & work area of nurses attending NGR</i>	<i>Recorded if patient and/or family attended NGR</i>	<i>Recorded topic/s for discussion</i>	<i>Description of debate, contribution & discussion</i>	<i>Recorded any changes to current practice as recorded in nursing care plans</i>

Ethical considerations

The study was approved by the Human Research Ethics Committees at the study site. Participants were informed of the research procedures, and completion of the questionnaire was considered as consent.

Data Analysis

Data analysis was conducted using SPSS Version 14. Descriptive statistics were used to describe the characteristics of the sample as well as all study variables. Changes in the component NWSS and overall index (IWS) were then calculated from pre- to post-test. For the PES, mean scores for the five sub-scales were calculated and a paired *t*-test was performed to ascertain whether the intervention was effective. Conventional $p < .05$ is considered as statistical significant for all tests (two-tailed). The observational data were analysed according to the data type for example trends in attendance were plotted, nursing care plans of attending patients were audited and quality of participation and debate at rounds was described.

RESULTS

Sample demographics

From a potential sample of 60 nurses employed in the ward, 44 nurses consented to participate in the study (73% response rate). Of these, 34 provided data on the pre-test questionnaires, and 23 on the post-test questionnaires. Since most of the following analyses focus on changes in pre- and post-test scores, the demographic data refer to the core sample of 23 nurses for whom individual change scores could be calculated. In this exclusively female sample, nine nurses were aged in their twenties, 10 in their thirties, and three in their forties, and just one nurse was over 40. Fifteen of the nurses held an undergraduate degree, six a diploma, and two a hospital certificate. Fourteen of the nurses had less than 10 years nursing experience, six had 10-20 years, and three had more than 20

years experience. Six nurses had less than three years surgical experience, eight had three-11 years, and nine had at least 12 years surgical experience.

Work satisfaction

Table 2 shows the component scores and IWS values at pre- and post-test. Since individual responses literally disappear in this aggregation process, there is no scope for statistical analyses in the form of significance tests or confidence intervals. There was an additional eight nurses in the pre-test sample. Although the index values showed virtually no change, the component scores of autonomy, professional status, and interaction have shown an increase from pre- to post-test (ranged from 3.29 to 6.99). On the other hand, the component scores of pay, task requirements, and organizational policy showed a decrease (ranged from 2.36 to 7.79).

Table 2: Index of Work Satisfaction scores at pre- and post-test

Component	Component Score	
	Pre (n=31)	Post (n=23)
Pay	17.80	10.01
Autonomy	11.76	15.05
Task requirements	14.21	7.32
Organizational policies	10.42	8.06
Professional status	9.81	15.48
Interaction	10.10	17.09
Work Satisfaction index	12.35	12.17

Work environment perceptions

Increases in mean scores were evident for three of the five subscales: participation in hospital affairs, foundations for quality of care, and staffing and resource adequacy. None of these increases

was statistically significant. There were virtually no change with the mean scores on manager ability, leadership, and support of nurses; and collegial nurse-physician relations.

Observational study

Analysis of the observational data showed that the nursing grand rounds were consistently well attended with between 10 to 20 nurses attending every week. Attendees included staff from the trial site and also staff from adjacent wards with all nursing levels from students through to nursing directors. At 70% of the weekly rounds the patient and/or family were able to attend and participate in the discussion with their perspective on the topic. Initially the nurses were reluctant to fully engage in discussion of patient care reporting that they felt uncomfortable openly discussing issues of care with patients/family present. However in time this ceased to be an issue and discussion was usually robust, informed by available research literature and included perspectives from patients' nurses and clinical leaders. The contribution from patients added depth to the discussion on practice and usually influence nursing care planning. For example, a topic at one nursing grand rounds was "the evidence in management of a newly formed stoma". Both the patient and his wife attended and openly discussed with the assembled nurses their struggle in coming to terms with this event. The nurses engaged in this discussion with them and later one nurse commented "... *this is not just about bio-physical care. Talking about the evidence was good and the (patient's) discussion reminded us to consider the implication for body image, not just for the patient but also his wife*".

DISCUSSION

This study set out to measure the influence that a clinical practice and professional development innovation may have on nurses' satisfaction with work and their perceptions of the work environment. The grand rounds involved individual nurses conducting a formal presentation of a specific patient and a nursing care issue for that patient to the collective ward nursing staff – or those who could and chose to attend. The rounds were conducted in a room adjacent to the ward.

This approach was a departure from reported models of nursing grand rounds which are large forums presenting a topic or case to the total nursing community in the facility remote from a specific clinical service area (Lannon 2005; Matheny and Wolff 1990; Furlong et al., 2007). An additional feature and resource for the grand rounds were the involvement of the hospital clinical librarian. Studies have demonstrated that the clinical librarian is effective in supporting evidence based medical care (Schacher 2001) and interacts and works productively with nursing staff (Tod et al., 2007), but no studies have involved the hospital clinical librarian as a resource for and participant in nursing grand rounds. Finally, a feature central to the philosophy of the nursing grand rounds in this study was the inclusion of the patient or their family/carer where possible. The nursing leadership in the ward was committed to this feature as a mechanism for promoting patient-centred care.

Findings from the worklife satisfaction survey showed no change in the IWS. However, when pre- and post-testing in the component scores were compared, an interesting pattern emerges. The satisfaction components that should in theory be most sensitive to enhancement by the grand rounds intervention namely autonomy, professional status and interaction – were those which did increase. In contrast, the pay, task requirements and organizational policy component scores decreased. Certain aspects of nurses' work satisfaction may have been enhanced by the experience of participating in nursing grand rounds. Considering the lack of similar research in this area, it is not possible to contextualise these findings to the broader field of knowledge.

Results of the perceptions of the work environment showed no clinical or statistically significant change. Even though a parallel analysis was conducted using Wilcoxon tests, which require less stringent assumptions, the findings were essentially the same patterns. The absence of statistically significant differences could be attributed to inadequate statistical power attendant on small sample

size and it is difficult to further explore these findings considering the lack of published research on this topic.

The observational data collected in this study revealed interesting and useful information for the local context. In terms of attendance, nursing grand rounds sessions were effective in attracting nurses from both the study ward and adjacent wards in a context where attendance was voluntary. Additionally, interaction from participants was fulsome with nurses stating that they found the interaction with the mix of nurses and patient/carer stimulating and instructive. The inclusion of the librarian was an important component enabling these clinicians to participate in discussion based on best evidence combined with patient input. In addition, the librarian was also able to note emerging issues during discussion and provide follow-up literature

The limitations of this study were related to the inherent limitations of a quasi-experimental study design including lack of a comparison site. Funding resources determined the extent to which we could measure the effect of this innovation. The study was confined to one ward, the intervention ran for just four months and whilst participation was open to all nurses, data were collected only from those nurses in the study site who consented to complete the questionnaires. However, a high response rate (73%) for the survey was achieved and the results provide a sound basis for further research on both work satisfaction and perceptions of the work environment.

CONCLUSIONS AND RECOMMENDATIONS

At the local level, this pilot study has demonstrated that nursing grand rounds was an innovative and acceptable approach to nursing clinical practice and professional development. Whilst the survey findings were not conclusive and generalisability from this work is limited, this single site study has demonstrated proof of concept for nursing grand rounds. Significantly, we have demonstrated that in the study site nursing grand rounds is viable, feasible and a sustainable strategy

to provide nursing clinical and professional development at point-of-care. Furthermore nursing grand rounds as described in this paper is an innovative approach to addressing some of the barriers for nurses working in busy acute care environments to access ongoing clinical learning. Clinicians and managers on the study site and adjacent wards were enthusiastic about continuing this innovation.

The nursing grand rounds intervention as described earlier in this paper has now become a permanent professional and practice development feature in the study ward with some adjustments made in response to the information collected in the observational component of the study. First, nursing grand rounds are now being held on a monthly rather than a weekly rotation. This time pattern is sustainable and provides sufficient time for presenting clinicians to consider and select a practice issue, read the literature and prepare for their session. There is an expectation that all registered nurses in the ward will in turn present and participate in the rounds but this remains voluntary. The second adjustment is that in the month following each nursing grand round there is promotion of the specific topic that was presented and featuring of the topic for ongoing clinical learning. A 'practice of the Month' space displays the topic, related journal papers and any posters, equipment or devices used in the presentation. Additionally, in-service sessions are held relating to practice change and nursing care plans are adjusted.

Implementation of nursing grand rounds in this busy acute surgical ward was an initiative of the clinical leadership team. The initial structure of the rounds was in part informed by the literature and in part a response to the practice and professional development needs of the nursing staff. The rounds have proven to be an effective and popular forum for clinicians to discuss patient care issues in the context of existing evidence, expert nursing judgement and patients' experiences.

There were limitations to the research evaluating the initiative and these are the inherent limitations of a quasi-experimental study design including lack of a comparison site. Given the successful implementation of nursing grand rounds in this project further sufficiently powered research is warranted to conduct a robust examination of the effectiveness and sustainability of nursing grand rounds to inform use of this innovation in other settings.

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