

ORIGINAL RESEARCH

Discovering the untapped benefits of team nursing in an acute haemodialysis unit of a major teaching hospital

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Abstract

Background: Nursing duties in a haemodialysis setting can be performed using two main models which are primary and team nursing. The study sought to determine the most appropriate nursing care model in an acute haemodialysis unit (AHU) of a large metropolitan teaching hospital where primary nursing was replaced by the team nursing model on a trial basis.

Methods: Standard questionnaires were administered to nursing staff pre and post the introduction of team nursing to determine the effectiveness of primary and team nursing in our dialysis unit. Clinical charts were audited prior to the introduction of team nursing and three months after to detect deviations in appropriate standards of care. A descriptive statistical analysis of data was conducted to address the purpose of this study.

Results: Staff took an average of 37 ± 4 days to review patient needs prior to the utilization of the TNC model and 5 ± 3 days 3 months later. Handing over of patients improved from 25% to 65% and 25% of charts audited prior to the TNC model had errors compared to 13% after the introduction of team nursing. On a score of 0 to 10, the success of the PNC model had a mean of 5.2 ± 2.5 compared to 8.3 ± 0.7 for the TNC model.

Conclusion: The team nursing care model can be effectively applied in an acute haemodialysis setting without compromising patient care and the superiority of team nursing over primary nursing in this setting has also been reinforced.

Key words

Acute haemodialysis, Nursing models, Primary nursing, Team nursing

1 Introduction

Nursing like any other profession has evolved over time. This evolution has brought in several nursing care models whose main goal is to organize nurses so that they can deliver the best possible nursing care to patients. Essentially, a nursing model is a collection of ideas, beliefs and values about the nature and purpose of nursing, which influence the way in which nurses work with their patients^[1]. The challenge on health institutions is to determine the nursing care delivery model which fits in today's dynamic healthcare environment^[2] and to have the ability to scrutinize traditional systems of

care delivery^[3]. Furthermore, motivation to adopt a nursing model of care may stem from the need to attract and retain nurses, contain costs and increase nurses' job satisfaction while maintaining the efficiency and quality of service^[4]. This article reports the findings of a study which sought to determine the most appropriate nursing care model in an acute haemodialysis unit (AHU) of a large metropolitan teaching hospital where primary nursing was replaced by the team nursing model on a trial basis.

Traditionally, this acute haemodialysis unit has been using the primary nursing care model (PNC) which involves allocation of a group of patients to one registered nurse (RN). This model of care enables the RN to coordinate multidisciplinary patient care and nurses should be groomed to accept a high degree of responsibility and autonomy that comes with the PNC model^[5]. In this regard, there is need to regularly educate nursing staff so that they become comfortable in this role if the full benefits of the PNC model are to be realized.

On the other hand, the team nursing care model (TNC) involves allocation of patients to small groups of RNs led by a team leader who is usually a senior nurse^[6,7]. The team based approach can be applied safely by staff of varying experience and skill as long there is direct supervision from experienced staff^[8]. The importance of communication in the TNC model cannot be underestimated^[9].

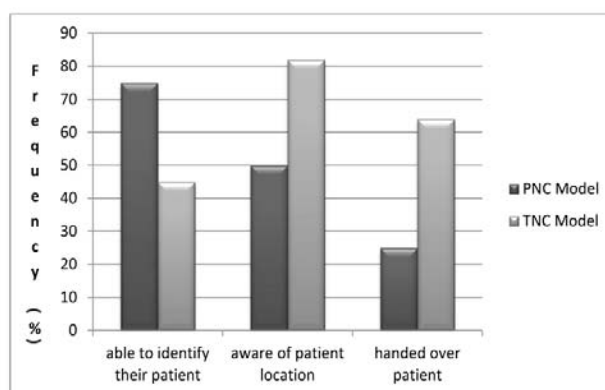


Figure 1. Staff's knowledge on identity, location and handing over of their patients

2 Materials and methods

The study was undertaken in the acute dialysis unit of a large public teaching hospital which cares for over 400 haemodialysis patients who would normally get their dialysis at satellite units or at their homes, but get to be dialysed in the hospital if they are clinically unwell. The AHU has ten dialysis stations and two acute dialysis machines which can be taken around the hospital to dialyse clinically unstable patients. The unit is also capable of utilizing ten dialysis stations located in the renal ward if the main unit is full. On average, the AHU cares for 20 patients daily and these patients are a mix of acute and chronic haemodialysis patients as well as patients requiring therapeutic plasma exchange. Furthermore, an average of 5 patients commences haemodialysis weekly in this AHU thereby contributing to a very high patient turnover. The unit is staffed by 10 full time RNs and 9 part timers.

This study was mainly observational in design. Haemodialysis RNs were given a questionnaire to evaluate the PNC model they had been using in the unit prior to the introduction of the TNC model. After three months of using the TNC model, the same questionnaire was administered. The design also incorporated the chart audit methodology where clinical charts were reviewed for any deviations from the appropriate standard of care. Specifically, the chart audit gathered data on whether patients had first and second iron doses, hepatitis B vaccine, erythropoietin stimulating hormones (ESAs), scheduled monthly bloods, clinic appointments and signed consent to commence dialysis. For the purpose of this study

data gathered from the chart audit was used to gauge whether staff were reviewing patient needs. The audits were done pre and post the utilization of the TNC model followed by a descriptive quantitative data analysis.

This project was part of the quality programs which were identified by senior managers of the acute dialysis unit as they deliberated on ways to improve patient care. Ethical approval was waived on the grounds that this was a low risk study. All staff provided verbal consent of their willingness to participate in the project.

3 Results

The PNC model was evaluated by 12 staff members while 11 responded to the TNC model questionnaire. A majority of staff (75%) were able to identify their patients when the PNC model was used. There was a marked increase on awareness of patient location and handing over of patients improved from 25% to 65% under the TNC model (see Figure 1). Staff took an average of 37 ± 4 days to review patient needs before implementation of the TNC model compared to 5 ± 3 days after the introduction of the TNC model (see Figure 2). More than 65% of staff reviewed the needs of their patients within a week when the TNC model was used compared to none when the PNC model was utilized. Time factor was identified as a constraint to the success of the PNC model by 50% of staff and 17% suggested trialing a new model of care. On the other hand, communication was found to be a major barrier of the TNC model. Overall, on a score of 0-10, the success of the PNC model was ranked at 5.2 ± 2.5 and that of TNC model at 8.3 ± 0.7 .

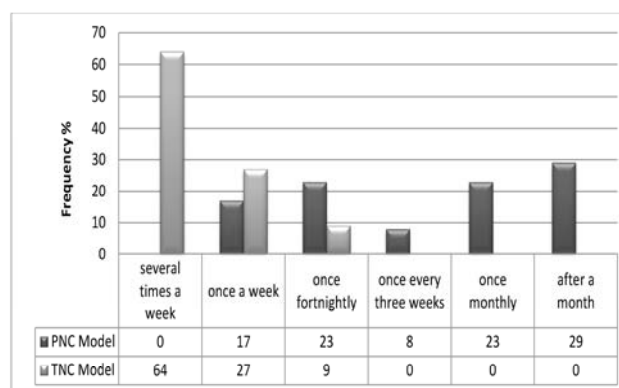


Figure 2. Frequency patient needs were reviewed

An audit of patient charts showed that 26% (N=42) of the charts prior to the implementation of the TNC Model had clinical errors and 64% of these errors related to missed doses of hepatitis B vaccine. After 3 months of using the TNC model, 13% (N=24) of the charts had errors and all of these errors pertained to patients not having been consented for dialysis.

4 Discussion

The TNC model undoubtedly delivered desired results by the end of the three months trial period. There were however a few teething problems especially with regards to communication as highlighted by other studies^[8]. The role of excellent communication skills when small groups of nurses are brought together^[6, 10] has been found to be vital for the success of team nursing. A study which sought to identify best practices in dialysis care reiterated that dialysis outcomes are most strongly related to communication and teamwork among staff. To improve communication among team members, each and every group used a communication book which every team member would check during the shift.

In our AHU, only 25% of the staff handed over their patients to their colleagues when they went on leave during the time the PNC model was used and after 3 months of using the TNC model 65% of staff were handing over their patients. In another study, satisfaction surveys from the nurses revealed the difficulties in planning for continuity of care when they are on leave^[6]. Team nursing was found to enable nurses to have a more complete picture of all patients^[8] thereby facilitating an effective handover takeover process when staff were on leave and most importantly, patients had more time with nurses.

Under the TNC model, 65% of staff reviewed their patient needs within a week and the rest of the staff carried out this review in not more than three weeks. When the PNC model was used, no one among the staff reviewed the needs of their patients within a week and it took some staff more than a month to carry out this review. This confirms the findings of previous work that besides several other advantages to nurses and the health institution, for patients, team nursing results in more contact with nurses, better quality of care and safer environment^[6].

Staff morale was generally low when the PNC model was used as evidenced by an average ranking of the success of this model. There was however a substantial increase in morale when the TNC model was adopted confirming the findings of numerous studies that work group teamwork leads to higher staff job satisfaction, increased patient safety, improved quality of care, and greater patient satisfaction^[11, 12]. Another study reported that participants' levels of job satisfaction with current position and satisfaction with occupation were both higher when they rated their teamwork higher^[13] and these findings suggest that efforts to improve teamwork and ensure adequate staffing in acute settings can improve staff satisfaction.

An audit of patients' clinical charts revealed that under the TNC model clinical errors were reduced by 50% which implies that this model has the potential to improve patient outcomes and safety. On the same note, the New South Wales Health Department^[14] reports that chart audit methodology has been used to detect deviations in appropriate standards of care, provide objective information and understand causality.

The Hawthorne effect could have been a limiting factor in this study, but to counteract this, team nursing was introduced as a quality program for the unit and staff were not aware that on the sidelines of this project, a study was being carried out. Moreover, a very small number of staff completed the questionnaire thereby affecting the generalizability of this study. An evaluation of the TNC model after a long time frame for instance 12 months may be more informative.

This study has demonstrated that the team nursing care model can be effectively applied in an acute haemodialysis setting without compromising patient care. Reality-based advantages of the team nursing model to the health institution, nurses and patients have been revealed. In comparison with the primary nursing model, the team nursing model appears to have enough evidence to fit in today's dynamic healthcare environment.

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