

Knowledge of Clinical Pathway for Children Undergoing Congenital Cardiac Surgeries

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Abstract

In recent past, clinical pathway has emerged as an important modality to document progress of the patient with congenital heart disease. The present quasi-experimental pre-test post-test study had a sample size of 40 nurses (20 each in experimental and control groups) and 50 children (30 in experimental and 20 in control group). Demographic variable proforma was administered to nurses and demographic clinical variable proforma to children. Knowledge level of nurses regarding clinical pathway was assessed using structured questionnaire. The analysis showed that clinical pathways can be used for providing high quality care in a timely and cost effective manner in children with congenital heart disease.

Child is a precious gift that should not be taken for granted. Of all nature's gift to the human race, nothing is sweeter to a man than his children. When a child is diagnosed with a heart problem, the parents are heartbroken and this becomes a parent's nightmare. Nursing care is a key factor in achieving positive outcomes and enhancing parental satisfaction. Children undergoing congenital cardiac surgeries require intensive nursing care. Various nursing models and standards have been developed throughout the world with the aim of enhancing the quality and promoting uniformity in care. A more recent way to evaluate and document the patient's progress is through the use of clinical pathways. The aim of a clinical pathway is to improve the quality of care, reduce risks, and increase patient satisfaction and increase efficiency in the use of resources.

This quasi experimental study was undertaken to assess the effectiveness of clinical pathway for children undergoing congenital cardiac surgeries, upon the knowledge, practice of nurses and children's outcome at selected hospitals of Chennai.

Objectives

The objectives of the study were :

1. To assess the pre- and post-test level of knowledge and practice in the control and experimental group of nurses regarding clinical pathway for children undergoing congenital cardiac surgeries.

2. To assess the clinical outcome in the control and experimental group of children undergoing congenital cardiac surgeries.
3. To evaluate the effectiveness of clinical pathway by comparing the pre- and post-test level of knowledge and practice in the control and experimental group of nurses regarding clinical pathway for children undergoing congenital cardiac surgeries.
4. To compare the clinical outcome in the control and experimental group of children undergoing congenital cardiac surgeries.
5. To compare the level of parental satisfaction among control and experimental group of children on nursing care.
6. To determine the association between the selected demographic variables of control and experimental group of nurses and their pre- and post-test level of knowledge regarding clinical pathway for children undergoing congenital cardiac surgeries.
7. To determine the association between selected demographic and clinical variables of control and experimental group of children and their outcome.

Review of Literature

A qualitative study was conducted by Connor (2011) in United States to describe the meaning of cost for families of children with congenital heart disease. Using semi-structured interview, the meaning of cost burden as defined by participants resulted in the

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emergence of two major categories, lifestyle change and uncertainty and subcategories like financial, emotional and family burden.

In Kanpur, India a study was conducted to assess the prevalence, age wise distribution and clinical spectrum of CHD at a multispecialty corporate hospital. A prevalence of 26.4 per 1000 patients was observed. Ventricular septal defect (VSD) was commonest lesion (21.3%), followed by Atrial septal defect (ASD) (18.9%) and PDA (14.6%). TOP was commonest cyanotic heart defect (4.6%). Maximum number (82.9%) of children with heart disease were diagnosed between the age of 0-3 years (Kapoor & Gupta, 2007).

Kitchener et al (2007) stated in their article that the critical examination of clinical practice should be an integral part of patient care. It includes the development and implementation of guidelines, together with continuous evaluation of clinical process and outcomes to improve the quality of care provided. Clinical audit has not been successful in achieving this. The use of Integrated Care Pathways facilitates the introduction of guidelines and the continuous evaluation of clinical practice. Improvements are achieved by frequently revising the pathways to reflect current, local best practice.

In San Francisco, a study was performed on effectiveness of critical pathway methodology in congenital cardiac surgeries. The findings revealed that the average length of stay (ALOS) for the entire cohort reduced to 43.8 percent ($p < 0.001$) and a 39.0 percent reduction in ALOS Intensive Care Unit ($p < 0.001$). Hence they concluded as, critical pathway methodology when used in patients undergoing a congenital heart operation produces a significant reduction in hospital stay and intensive care unit stay as well as quality patient care with uniformity of outcome (Turley, 1998).

Methodology

Conceptual framework of present study is based on King's Goal Attainment Theory Research approach was experimental. A quasi-experimental pre-test post-test design for nurses and post-test only design for children were adopted and the study was conducted at Apollo Children's hospital and Dr KM Cherian's Frontier Lifeline Hospital in control and experimental group respectively. The sample size was 40 nurses including 20 control and 20 experimental; 50 children underwent congenital cardiac surgeries, 20 in control group and 30 in experimental group who satisfied the inclusion criteria using purposive sampling method.

The researcher developed the clinical pathway for children undergoing congenital cardiac surgeries by extensive review of literature, participatory observation of nursing care of child undergoing congenital cardiac surgery from admission to discharge and suggestions from the health care team members. Henderson's fourteen basic needs was the basis for the pathway. The pathway contains eligibility criteria and activities tabulated on fourteen aspects for 7 days including 2 days of pre-operative care and 5 days of post-operative care. The aspects are: admission, assessment, consultation, investigation, medication procedures, diet, fluids, activities, hygiene, elimination, safety, psychosocial needs and patient family education.

The investigator administered demographic variable proforma to the nurses and demographic, clinical variable proforma to the children in control and experimental group. Pre- and post-test knowledge level of nurses regarding clinical pathway was assessed using structured knowledge questionnaire. After teaching the nurses regarding clinical pathway, it was implemented to the children in experimental group alone. The pathway was attached in the child's file and the nurses were instructed to provide care according to the pathway from admission to discharge. The investigator assessed the compliance level using practice checklist, clinical outcome using checklist and parental satisfaction on nursing care using rating scale. Effectiveness of pathway was determined by comparing control and experimental group.

Results

There was significant difference between the post test scores of control and experimental group of nurses ($t=21.96$) at $p < 0.001$. In experimental group the mean post-test knowledge level ($M=26.2$, $SD=1.587$) of nurses had increased comparing to their pre-test score ($M=15.85$, $SD=1.825$). The difference was statistically significant ($t=24.89$) at $p < 0.001$ level.

The comparison of compliance in control ($M=40.1$, $SD=0.465$) and experimental group of children ($M=55.9$, $SD=0.332$) reveals statistically significant difference ($t=129.5$) in the mean compliance score at $p < 0.001$ level. The comparison of control ($M=6.6$, $SD=1$) and experimental group of children ($M=11.1$, $SD=0.885$) showed significant difference ($t=17.24$) between the clinical outcome at $p < 0.001$ level.

There was significant difference ($t=25$) in the mean parental satisfaction of control ($M=49.7$,

SD=3) and experimental group (M=70.4, SD=2.362) at PO.001 level.

There was no association between the selected demographic variables in the control and experimental group of nurses namely, age, gender, institution trained, qualification and their pre- and post-test level of knowledge. There was no significant association between selected demographic variables and selected clinical variables and clinical outcome and parental satisfaction of control and experimental group of children.

Conclusion

The discipline of nursing is an art and science committed to professional excellence by providing highest quality care possible. Quality of care is determined by identifying the observable characteristics that depict the degree of excellence. Clinical pathways are proposed as a means of providing high quality care in a timely and cost effective manner. The findings of the study indicated that it will improve the knowledge and practice of nurses regarding care of children undergoing congenital cardiac surgeries as well as the child's clinical outcome in terms of length of stay,

prevention of complications and parental satisfaction.

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