Research critique

Moses Williams NURS 450 Professor Peggy Melloh Introduction Catheter-associated urinary tract infection (CAUTI) is a fairly common complication in hospitalized patients. Nosocomial infection prevention and patient safety promotion has been issued and many researches have been conducted to improve patient's quality of life. In this article, Saint et al. (2005) hypothesize that using a paper-based urinary catheter reminder can reduce the incidence of urinary catheterization, and consequently this will enhance the patients' safety. Critique Part 1 Research Questions or Hypotheses

The background and significance of this study are properly presented in the introduction. The research question is presented at the end of the introduction of this article. Saint et al. (2005) develop the research question based on the scientific backgrounds they selected and reviewed: " Is a urinary catheter reminder effective in reducing the incidence of indwelling urethral catheterization in the hospitalized patients? " (p. 456). The Independent variable is " a urinary catheter reminder" and the dependent variable is " the incidence of indwelling urethral catheterization. The research question appropriately states the relationship between " a urinary catheter reminder" and " the incidence of indwelling urethral catheterization," thus the research question is specific to one relationship. The research question is generated from PICO information which means population, intervention, comparison, and outcome (LoBiondo-Wood & Haber, 2010, p. 63). In this study, population is the hospitalized patients in the University of Michigan Medical Center and a total of 5, 678 patients participate in the study. Intervention is ' using' a catheter reminder and comparison is ' not using' a catheter reminder.

Outcome is the effectiveness of a use of the reminder. Although hypothesis is not directly written in the article, Saint et al. (2005) imply that a paper-based reminder of indwelling urinary catheter might help reduce improper catheterization. The research question is not placed in a theoretical framework; however, the conceptual framework is enclosed in the literature review of the article. Two conceptual frameworks are applied to develop the research question: one is patient safety promotion and the other one is infection prevention.

The rate of catheter-associated urinary tract infection (CAUTI) is relatively high among the nosocomial infections. Although indwelling urinary catheters are common and essential for some hospitalized patients, sometime these are unnecessarily applied. In this paper, a simple written reminder might cut down the use of indwelling urinary catheters and consequently this can reduce the rate of CAUTI and improve patient safety. The purpose of this study is not directly stated, but it can be inferred from the research question.

The purpose of this study is to test the effectiveness of a indwelling catheter reminder in decreasing the use of indwelling urinary catheter. The level of evidence of the research does not explain the significance of the study completely, but this is one of the skills that can assist the readers to evaluate the strengths and weaknesses of a research (LoBiondo-Wood & Haber, 2010). This research is Level III because of its quasi-experimental design which tests cause-and-effect relationships. Saint et al. (2005) investigate the relationship between the use of a urinary catheter reminder and the incidence of indwelling urethral catheterization.

In order to apply evidence in practice, the nurses should assess the potential for applicability first. Saint et al. (2005) bring up the problem that indwelling urinary catheter-associated infection “ accounts for up to 40% of nosocomial infections. ” Another problem they find is that many physicians are often unaware of urinary catheterization in their patients. Unfortunately, these overlooked catheters are unnecessarily applied in some patients, and then the rate of CAUTI can be increased. Based on these findings, Saint et al. 2005) hypothesize that a written reminder can help the physicians remember that their patients have indwelling urinary catheter, so this awareness of urinary catheterization can reduce the incidence of indwelling urinary catheter. Review of the Literature This article does not provide the search strategy including a number of databases and other resources which identify key published and unpublished research. In this article, both the primary sources and the theoretical literatures are collected and appraised in order to generate the research question and to conduct knowledge-based research.

In the section of the literature review, nineteen professional articles are appraised in order to provide the significance and background of the study. Saint develops the research question based on these analyses. “ Catheter-associated urinary tract infections in surgical patients: A controlled study on the excess morbidity and costs” is one of the primary sources written by Givens and Wenzel who conduct and analyze this study. In addition, “ Clinical and economic consequences of nosocomial catheter-related bacteriuria” is a review of a literature article which is the secondary source.

Although many studies state that patient safety is a top priority and CAUTI can be controlled by the caution ofhealthcare providers, the infection rate is relatively high among other nosocomial infections. One of the reasons Saint and colleagues uncovered is unawareness and negligence by health care providers. In appraising the literatures, Saint finds " over one-third of attending physicians were unaware that their own hospitalized patients had indwelling urinary catheter" (2005, p. 456). This article was published in 2005.

Among thirty two resources, eighteen articles were published before 2000 and twelve articles were published within past five years. In this paper, the oldest article Saint et al. (2005) reviewed is " Factors predisposing to bacteriuria during indwelling urethral catheterization" which was published in 1974. This implies that indwelling urinary catheter-associated infection has been issued for more than forty years, and many researchers still work on this topic. The literature review is coherently organized so that the readers can understand straightforwardly why this study is planned. Saint et al. 2005) state prevalent and essential use of indwelling urinary catheter in hospitalized patients, and then they question its safety. They point out some problems caused by indwelling urinary catheter, including indwelling urinary catheter-associated infection, the patient discomfort, and increased health care cost.

In some patients, the indwelling urinary catheters are not necessarily applied due to a lack of awareness of physicians. Therefore, Saint et al. (2005) come up with the idea that a simple and written reminder assists physicians to be aware of the indwelling catheterization in their atients, so the chances of

catheterization will be reduced and the rate of the indwelling urinary catheter-associated infection will be decreased simultaneously. Saint et al. summarize the literature review by stating, “ an innovative system-wide administrative intervention designed to remind physicians that their patient has an indwelling catheter in place might help reduce inappropriate catheterization” (2005, p. 456). In addition, this logical summary makes them develop the research question appropriately. Internal and External Validity

This study barely has a potential threat to external validity. On the contrary, the external validity of the findings might be increased because Saint et al. (2005) apply the intervention in a real hospital setting, then the findings can be generalized and applied to other hospital setting. In order to reduce the threats to internal validity, the independent variable is only manipulated in the intervention group. In other words, the intervention group only gets a urinary catheter reminder to test effectiveness of it.

The baseline of differences in age, sex, length of hospital stay, and catheterization is adjusted. The intervention fidelity is maintained throughout the study. Everyday, one nurse gathers information on “ catheter status, reason for catheterization, and recatheterization” (Saint et al. , 2005, p. 457). Also, the time and method of collecting data is constantly maintained. The enhancement strategy such as “ email, use of tap flag, and paging” is used in order to minimize physician’s ignorance with a reminder and to increase physician’s response. Research Design

The study uses a pretest-posttest design with a nonequivalent control group, which is one of the quasi-experimental designs. Four hospital wards are

selected and divided in two groups. Two wards are assigned to the intervention group to which the reminders are offered, and the other two wards are assigned to the control group. Data is collected for sixteen months, and sixteen months is divided into two eight-month periods which is pre- and post-intervention (Saint et al. 2005, p. 456). A nonequivalent control group design is adequate for this study because the esearcher can observe the effectiveness or ineffectiveness of a reminder by comparing the outcomes between intervention group and control group. Also, during pre-intervention periods, baseline data can be collected in both intervention and control group which will decrease bias. However, the researcher can simply assume that the condition of both groups is similar at the beginning of the research (LoBiondo-Wood & Haber, 2010). Therefore, the quasi-experimental design is proper to conduct this study in order to answer the research question.

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