CHAPTER 5

CONCLUSION, IMPLICATIONS, LIMITATIONS, AND RECOMMENDATIONS

This chapter is organized into four sections including conclusion, implementations for nursing practice, limitations, and recommendations for further studies.

Conclusion

A predictive correlational design of secondary data analysis of 2007 Thai Nurse Dataset (Aungsuroch & Wanant, 2007) was used to assess the predictive ability of the nurses' work environment and nurse staffing levels for job satisfaction of nurses, burnout, and quality of nursing care in public hospitals in Thailand. The descriptive data of levels of nurses' work environment, nurse staffing levels, job satisfaction of nurse, nurse burnout, and quality of nursing care in public hospitals in Thailand were investigated. The population in this study covered general and regional hospitals and participating nurses in those hospitals. Samples were 39 general and regional hospitals and 5,247 nurses who provided direct care for patients and reported a valid number of patients cared for on their last shift

Five instruments were used for data collection: 1) the PES-NWI (Lake, 2002); 2) patient to nurse ratio (Aiken, Clarke, & Sloane, 2002); 3) job satisfaction of

nurse (Aiken, Clarke, & Sloane, 2002); 4) the MBI-HSS (Maslach, et al., 1996); 5) quality of nursing care (Aiken, Clarke, & Sloane, 2002).

Reliability coefficients of the PES-NWI questionnaires including nurse participation subscale, nursing foundation subscale, nurse manager ability subscale, staffing and resource adequate subscale, N-MD relation subscale were 0.64, 0.67, 0.81, 0.91, and 0.72, respectively (Lake, 2002) ; 2) job satisfaction was in the range of .70 (Wanous et al., 1997); 3) the MBI including EE subscale was 0.88, DP subscale was 0.76, PA subscale was 0.77 (Maslach, et al., 1996); 5) quality of nursing care was in the range of .92-94 (Pearson et al., 2000). Based on 2007 Thai nurse dataset, the Cronbach's alpha coefficients of the PES-NWI including nurse participation subscale, nursing foundation subscale, nurse manager ability subscale, staffing and resource adequate subscale, and N-MD relation subscale were 0.87, 0.90, 0.87, 0.91, and 0.85, respectively. The Cronbach's alpha coefficients of EE, PA, and DP subscales were 0.87, 0.77, and 0.74, respectively. Data analyses were performed using mean, standard deviation, frequency, percentage, Pearson correlation, chi-square, and univariate and multivariate logistic regression analysis.

The majority of study hospitals and study nurses were drawn equally form twelve public health regions. Nurses in this study were 34 years old on average, 98 percent were female, had nearly 8 years of nursing experiences and 6 years of experiences in their current hospital position, and was predominately full-time. The majority of study nurses earned baccalaureate degree or equivalent in nursing and had dependents or relatives living with them.

The findings from this study demonstrated that

1. Study nurses rated the highest score of nurses' work environment on collegial nurse-physician relationships and the lowest score on staffing and resource adequacy. The average of nurse staffing levels was 10 patients per nurse. Study nurses had burnout measured by emotional exhaustion subscale at high score (41.28%), depersonalization subscale at low score (68.76%), and personal accomplishment subscale at low score (39.17%). Study nurses reported being moderately satisfied with their job (63.46%) and rated quality of nursing care as good (70.84%).

2. The job satisfaction of nurses can be predicted by nursing foundation subscale and nurse manager ability subscale. At hospital level, after controlling for nurse characteristics, nursing foundation subscale and nurse manager subscale were significantly associated with job satisfaction of nurses. A 1-point increase in the average rating nurses gave to the nurse manager factor was significant associated with 107.81-fold (OR, 107.81; 95%CI, 2.90-3998.67; $p<.05$) increase in the odds of reporting in job satisfaction. A 1-point increase in the average rating nurses gave to nursing foundation factor was significantly associated with 0.02-fold (OR, 0.02; 95%CI, 0.00-0.39; $p<.01$) decrease in the odds of reporting in job satisfaction.

3. Nurse burnout measured by emotional exhaustion can be predicted by nurse staffing levels. At the hospital level, after controlling for nurse characteristics, nurse staffing levels was significantly associated with emotional exhaustion. The addition of each patient to nurses' workload was associated with 1.02 point increase of nurse reporting in high emotional exhaustion (OR, 1.02; 95%CI, 1.00-1.03; $p<.05$).

4. The quality of nursing care can be predicted by nurses' work environment and nurse staffing levels. At the hospital level, after controlling for nurse

characteristics, nurses who reported favorable work environment were 0.69 times less likely to report fair to poor care quality (OR, 0.69; 95%CI, 0.48-0.98; p<.05) compared with nurses who reported unfavorable work environments. The addition of each patient to nurses' workload was associated with 1.04 point increase of nurse reporting in quality of nursing care as fair/poor (OR, 1.04; 95%CI, 1.02-1.05; p<.001). A 1-point increase in the average rating nurses gave to the nursing foundation factor was significant associated with 0.02-fold (OR, 0.02; 95%CI, 0.00-0.32; p<.01) decrease in the odds of reporting in quality of nursing care as fair/poor.

Implications

The findings of this study provide information for implications nursing practices as follows.

Implications for Nursing Science

The significance of this study contributes to nursing science.

1. This study is the first study to examine the nurses' work environment, nurse staffing levels particularly patient to nurse ratio, job satisfaction, burnout, and quality of nursing care based on nurses' perception in public hospitals in Thailand using the same instruments as other studies in other countries. Therefore, this finding will serve as the baseline information of country or Thai context used to compare with other countries or further study.

2. This study contributes to nursing knowledge development by testing model adapted from the QHOM model. The results of this study confirmed a part of

the QHOM model by demonstrating the association of system and outcome. As such, it can be used as a guideline in nursing administration to promoting desirable outcomes.

Implications for Hospital and Nursing Administration

Results of this study indicated that higher organizational support nurse manager ability was associated with job satisfaction of nurses. Hospital and nursing administrators should give opportunities to nurse managers to acquire knowledge and develop their leadership abilities. Hospital and nursing administrators need to provide orientation for nurse managers to know about goals and visions of hospitals and inservice education or training for nurse managers to develop their leadership competencies.

The finding revealed that the higher the number of patients assigned, the higher likely nurses are to report nurse burnout measured by emotional exhaustion and quality of nursing care as fair/poor. Hospital and nursing administrators should improve nurse staffing in hospital which not only increasing the number of new nurses but also appropriate nurse staffing such as determining the number of nurses in hospitals based on nursing activities, patient needs, patient classification, and standard from the Thailand Nursing and Midwifery Council.

Based on this study's results, development of favorable nurses' work environment is another strategy to improve quality of nursing care. As presented by the American Nurses Credential Center Magnet application, improving subscales of the practice environment created organizational climate where good nursing care is provided with a valuable effect for patient outcome. Hospital and nursing

administrators should create program supporting characteristics of nurses' work environment in hospitals.

This study demonstrated factor related to quality of nursing care including hospital and nursing administrator should encourage the nursing foundations for a high standard of patient care such as a pervasive nursing philosophy, a nursing model of care, and nurses' clinical competence. Hospital and nursing administrators should support that quality was assured by a formal quality assurance program, as well as by cultivation of new staff and continuing education for all staff. Moreover, hospital and nursing administrators should promote a nursing model of care by encouraging continuity of nursing care, and the use of nursing diagnosed and nursing care plans.

However, these findings of the inverse the relationship between nursing foundation and job satisfaction of nurses, hospital and nursing administrator should extent this result by investigating meaning and reasoning of association by using qualitative approach or in depth interview. The finding will make more clear understanding. Hospital and nursing administrator will realize the way to supporting desirable outcomes.

Limitations

There are possible limitations in this study as follows.

1. The generalizability which is the extension of research findings and conclusions from a study conducted on a sample population to the population at large may be limited because all data were collected at regional and general hospitals. Therefore, the results may not be generalized to other hospitals or setting such as community hospitals, university hospitals, or home care centers.

2. This study utilized the research measurement such as the PES-NWI developed from U.S. context. However, nurses' work environment is based on health care system which does not take place in isolation from political, economic, social, and cultural realities. These realities form the context within which nursing care is delivered that there are to some extent different from country to country. The nature of nurses' work environment characteristics in Thai hospitals may differ from the one in the U.S. hospitals. This may create some unexpected findings in this study.

3. Nurse staffing levels in this study was referred to patient to nurse ratio. Therefore, this significant finding was not addressed in any other methods of nurse staffing levels.

Recommendations for further studies

1. As the findings of this study are limited to only public hospitals including general and regional hospitals. Increasing sample size and expanding of the study in multi-units and multi-institutional studies are suggested to extend the generalizability of the results. Therefore, a utilization of the different settings of analysis such as university hospitals, community hospitals, and organizations may be another consideration for developing further studies that will extend the knowledge of the relationship between nurses' work environment and nurse staffing levels for nurse and patient outcomes at large.

2. Although there is significant evidence in literature that the PES-NWI, a single item assessment of quality of care and job satisfaction of nurses are a valid tool for measuring nurses' work environment and quality of care and job satisfaction of nurses in other countries, there is lack of evidence about its performance in Thai

hospitals. Further research should be developing, validating, and standardizing research tool based on nurse and hospitals in Thailand.

3. This study found a significant relationship between nurse staffing levels particularly patient to nurse ratio and nurse and patient outcomes. However, patient to nurse ratio is one method that measure nurse staffing levels. Therefore, the exploration of other methods may be another consideration for developing further studies that will extend the knowledge of the predictive ability of nurse staffing and outcomes.