

The ANQueSt (Asian Nurse Quality of life Study) to Compare Quality of Life and Identify Related Variables: Study Protocol for a Cross-Sectional Design

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Abstract

Background: Hospital-based nurses' quality of life is affected by stress coping ability, job satisfaction, job stress, and social support. These relationships appear to be identical, even among different countries. Nevertheless, dynamic comparisons of quality of life in Asia are very limited. The Asian Nurse Quality of Life Study was designed to compare nurses' quality of life across Asian countries and identify variables that are related to quality of life.

Research design: A cross-sectional questionnaire survey design.

Subject: Hospital based nurses are recruited from Japan, Singapore, Malaysia, Thailand, and Bhutan (Five Asian countries). The inclusion criteria for the research are: 1) being from an Asian country, 2) working at a teaching hospital, and 3) obtaining the nursing director's agreement. Co-researchers from each country independently select particular research fields.

Method: A cross-sectional survey is conducted across five Asian countries (Japan, Singapore, Malaysia, Thailand, and Bhutan). Quality of life (WHOQOL-BREF), job stress (National Institute of Occupational Safety and Health questionnaire), and demographic data are assessed. Quality of life is directly compared among the countries. Stepwise multivariate linear regression analysis is performed to identify variables related to quality of life.

Survey duration: Survey duration is between October 2013 and August 2014.

Keywords: Asian nurse; Quality of life; Study protocol

Introduction

Nurses are essential health care providers. To ensure they are providing the highest-quality care, it is important to improve the quality of nurses' lives [1,2]. Poor quality of life adversely affects nurses' health [3,4] and turnover rates [5-9]. In particular, hospital-based nurses are under high stress at work due to high workloads [10,11], high cognitive demand [12], and shift work [13]. Nurse staffing adversely affect patient outcomes [14]. Nurses are not able to provide safe and high-quality care, if they are highly stressed. Factors involving quality of life include: poor working conditions (high workloads and job demands, in addition to low job control) [10,15-19], low job satisfaction [20], low social support [2], and individual coping ability [21,22]. Nurses' quality of life appears to be quite clearly affected by similar factors, even across different countries. Nevertheless, the previous studies have been conducted not on a global scale but by examining individual countries.

The latest concerns are the migration and globalization of the nursing workforce. A worldwide shortage of nurses exists that has led to global competition in the hiring of nurses, as well as a migration of nurses from developing to developed countries [23]. Employing nurses from other countries has helped to temporarily lessen the nursing shortage experienced in developed countries [23]. Nurses travel from their home countries to more developed countries to improve their quality of life. In contrast, a global comparison of nurses' quality of life is somewhat limited. Whether quality of life is actually different among the different countries needs to be clarified

International research that could potentially guide differences in nurses' quality of life has been scarce. Lambert and colleagues (2004) used a cross-sectional questionnaire survey to compare quality of life for hospital-based nurses in Japan, Thailand, South Korea, and the USA (Hawaii) [24]. The average physical and psychological status of nurses across the different countries was fairly comparable, with the exception of the lowest psychological status being found in Thailand. Several predictors were found to be the same (workload, number of

people in the household, and likelihood to leave the current nursing position), although cross-cultural roles of nurses may vary.

Chang and colleagues (2007) also compared quality of life for general (not only hospital-based) nurses in Australia and New Zealand [25]. Their quality of life was comparable, and more frequent workplace stress predicted lower physical and mental health. Although multinational collaborative research is challenging, more dynamically different countries need to be investigated to obtain a more international perspective of nurses' quality of life.

As Asians, we have many similarities as well as differences; however, evidence concerning nurses' quality of life is very limited. Therefore, the ANQueSt (Asian Nurse Quality of Life Study) was designed to compare nurses' quality of life across Asian countries and identify the variables related to quality of life. The study's findings provide previously unavailable evidence to help guide important decisions about the improvement of hospital-based nurses' quality of life in Asia.

Methods

Study setting and participants

The study idea was formed during the 16th East Asian Forum of Nursing Scholars International Conference in 2013. The inclusion criteria for the research are: 1) being from an Asian country, 2) working at a teaching hospital, and 3) obtaining the nursing director's agreement. Co-researchers from each country independently select particular research fields. Then, a cross-sectional questionnaire survey is conducted during the 2013-14 academic year at 10 teaching hospitals in five Asian countries (Japan, Singapore, Malaysia, Thailand, and Bhutan). Singapore, Malaysia, and Bhutan each have only one hospital. These five countries are representative of variations in Asia with respect to organization and nurses' training.

The study protocol receives ethical approval from the lead university, Akita University, in Japan first. Then, each organization in the four participating countries receives ethical approval at the national level.

Data collection

Co-researchers from each country are highly responsible for the data collection. We communicate with each other through e-mail and the tele-Internet system to share updates of the data collection process. In Japan, Singapore, and Malaysia, the researchers make detailed agreements with the nursing directors concerning the data collection processes. Then, the data are systemically collected by the nursing directors of each hospital. In Thailand, a research network has already been well constructed for the purposes of data collection. Therefore, data are collected through the existing network. The hospital in Bhutan is fairly compact; therefore, the co-researcher directly hands out the questionnaires to each department and collected the data directly from the actual departments.

Outcome measures

We use the National Institute of Occupational Safety and Health's (NIOSH) industrial health model as the framework for this study [26]. This model indicates that job stress affects physical and psychological health. Individual factors, non-work factors, and social support levels also lead to differences in perceptions of and reactions to job stress. To examine quality of life, we use the WHOQOL-BREF, which was

developed by the World Health Organization [27]. This scale consists of 26 items in five domains (physical, psychological, social relationships, and environment, overall). The total score ranges from 26 to 130. Higher scores indicate better quality of life. This quality of life scale is widely used worldwide and has been tested to ensure both its reliability and validity [27]. Job stress is measured using the NIOSH questionnaire, which includes examinations of such things as workload (7 items), job control (16 items), job requirement (4 items), and mental demand (5 items). Job stress scores range from 32 to 151, with higher scores indicating higher job stress. The NIOSH also measures job satisfaction. This job stress scale is also widely used and has been tested for reliability and validity [26]. Private life satisfaction is also measured [28]. To achieve a life satisfaction score, job and private life satisfaction scores are combined, with scores ranging from 5 to 17 and higher scores indicating greater satisfaction.

Individual factor assessment include such things as age, sex, material status, educational level, years of nursing experience, job title, unit type, shift type, working hours, annual leave acquisition rate, and stress coping ability. The stress coping ability scale is originally developed by Antonovsky (1987). It has been translated into many languages and has been evaluated fully [29]. This scale has 13 items, which are scored from 13 to 91 points. Higher scores indicate greater stress-coping ability.

Non-work factors consist of household duty, childcare, care of older adults/persons with disabilities, currently going to school, and voluntary/religious duties. Social support is measured by 12 items in 3 domains (immediate supervisor /boss, co-workers, and family/friends) by the NIOSH. Total scores ranged from 12 to 48, with higher scores indicating greater social support [26].

Statistical analysis

To clarify the different backgrounds of each country, their characteristics are compared using an analysis of variance (ANOVA) for numeric data and a chi-square test for proportion. To compare quality of life among the five countries, we use an analysis of covariance (ANCOVA). Controlling for baseline data, covariates (age, stress coping ability, social support level, job stress, and life satisfaction) are selected for the ANCOVA. Then, as a post-hoc test, the Tukey-Kramer method is used to examine the differences among the country pairs.

To identify the variables related to quality of life, first Pearson's correlation coefficients are calculated between the independent variables (individual factors, non-work factors, social support levels, and job stress) and the dependent variable of QOL for each country. Then, the independent variables are selected for the stepwise multivariate linear regression analysis if there are more than three countries with coefficients >0.2 (the absolute value). In addition, using mathematical quantification theory Class 1, each country is transposed into a numeric value. If the data is Japanese, it is renamed 1, and the data from all other countries are set to 0. These country variables are also selected as independent variables for the stepwise multivariate linear regression analysis, because the dynamic effect of each country is crucial for our study. A P value <0.1 is used as the cut-off point to retain in the model. The JMP 10 Software (SAS Institute) is used to perform the statistical tests. The significance level is set at $p < 0.05$.

Ethics

Protection of participants

Participants receive a letter of the study aims and methods, which include the following:

1) notice that participation is voluntary; 2) notice that refusal to participate would not influence any at workforce; 3) notice that their privacy is strictly protected; 4) notice that the data would be presented only in aggregated form in professional journals; 5) as a disadvantage, the time spent responding to the questionnaires; 6) as an advantage, assessment for own quality of life. Returning the questionnaire is regarded as consent to participate in the study.

All collected data is used only for research purpose. Participants' privacy is secured. The data is presented only in aggregate form to professional journal, and the results remain anonymous. The data is protected under the data control respondent (Dr. Yoshihiro Asanuma, Akita university graduate school of health science). An ID is created, and linkable anonymous between the data and individuals. PC for data analysis is not connected with internet. All data and documents are kept in locked cupboard. When this research project is finished, all data and documents are disposed in the appropriated way.

Benefits and disadvantages

As an advantage, participants can review their quality of life as well as work condition by answering questionnaire. Feedback of analysis for international comparison of quality of life will be given. Disadvantage is the time spent responding to the questionnaires.

No financial cost required

Participants don't have to pay any research financial cost.

Confidentiality

Research leader and co-researchers will discuss about data. The data will be used for research purpose only. The data will be presented only in aggregate form to professional journals. The results will remain anonymous and kept securely.

No disadvantage, even if no participation

It is up to participants to decide for participation. There are no disadvantages, even if participants do not participate for this survey.

Others

The study protocol received an ethical approval by the lead university, Akita University (registration number 1094), Japan first. Then each organization in the four participating countries received ethical approval at each country level. This study was registered for clinical trial registration in Japan (UMIN: University hospital medical information network, UMIN000024300).

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