

Factors Related to Health Status among Nurses in Taiwan

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Abstract

Nurses play an important role in healthcare institutions. Improving the nurses' health status and increasing nurses' enthusiasm in clinical nursing can improve the quality of healthcare. The purposes of this study include: (1) to understand the basic characteristics of the participants, and health status; (2) to analyze the differences in health status between different demographic of the participants. The study adopted stratified and cluster sampling, and used a cross-sectional descriptive design. A total of 256 registered nurses and licensed vocational nurses were recruited for the study who have been working in the position for at least one year in a medical center in northern Taiwan. Research tools included basic properties, and the Chinese Health Questionnaire. Data were analyzed with SPSS for Windows 187.0 (Chinese) software for descriptive statistics, t-test, and one-way ANOVA.

To summarize, we found the following: (1) Participants' average age was 29.8 years, and most participants were single, childless women with bachelor's degrees or above, not living with their in-laws, N1 ranked, working on shift, and not participating in health courses. (3) Participants' health status were found significant differences among gender, education degree, and whether or not they had children. The findings of this study provide a reference for management decision making.

Keywords: Nurses; health status; physical health; mental health; social health.

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1. Introduction

The nurse employment rate in the Taiwan is 58.9% [1]. The nursing shortage and day-night work shifts will increase the clinical care load, resulting in many negative physical and psychological effects including health issues such as anxiety, and behavioral changes [2]. Moreover, this can lead to a state of exhaustion and burnout among nurses, which will increase their intention to resign and further affect the quality of patient care [3].

Nurses are expected to fulfill roles including caregiving, educating, and treating, which will result in burnout [4]. Continued burnout can affect workers' physical and mental health as well as their awareness of patient needs, thereby affecting work performance and even damaging business and society [5]. The World Health Organization (WHO) indicated that health is not only associated with a lack of physical pain or disease, but also the presence of mental health [6]. Several studies related to nurses' health status have also revealed that they are subject to poor health. For instance, a high proportion of nurses who undertake shift work are affected not only on mental and physical levels, but are also impacted in terms of their adaptability to family and society [7-8].

The inability to obtain adequate rest will result in physical and mental fatigue, and working different hours and having life situations that inconsistent with their families can more easily lead to the dual pressures of work and family [9]. The manifestation of nurses' healthy lifestyles can also affect their credibility when undertaking patient care activities [10]. Additionally, related studies have indicated that factors resulting in nurses' poor health-promoting lifestyles are as follows: older age and lower education level[11]; and lack of seniority, being unmarried, not having children, serving at local hospitals, lower job levels, and living alone[12]. Nurses with good health status enjoy not only better quality of life and act as role models in the workplace, but also have reduced burnout, which increases retention rates and the quality of nursing care [11]. Therefore, the purpose of this study is to explore the nurses' status, in order to provide hospital administrators with appropriate recommendations.

2. Materials and Methods

A cross-sectional design with a questionnaire survey was employed. All cases from a northern medical center hospital, with a total population of 2911 registered nurses. Random proportions of the stratified clusters sampling was utilized to collect data. A total of 256 registered nurses were recruited. All participants were that they were clinical nurses who have worked for one year or more and who were willing to be surveyed.

2.1 Demographic characteristic

The characteristics questionnaire included age, gender, education degree, recipient of continuing education, nursing seniority, marital status, living with parents-in-law, work sector (department), work shift, and job level. In Taiwan, clinical nursing staff can be classified by four clinical ladder levels [13]. The four were *N1* (responsible for basic nursing), *N2* (critical care nursing), *N3* (in charge of education and holistic nursing, and proportions of the stratified clusters (responsible for research and specialized nursing).

2.2 Health status questionnaire

Participants' perceived health status was measured using Chinese Health Questionnaire (CHQ-30) [14]. The scale includes 30 items that are divided into three subscales measuring physical health, mental health, and social health. Items are rated on 4-point Likert scale that includes 0 ("more than usual" or "far less than usual"), 1 ("a little more than usual" or "a little less than usual"), 2 ("almost the same as usual"), and 3 ("not at all" or "better than usual"). Higher scores indicate better health. The Cronbach's alpha for this instrument was .93 for the current study.

2.3 Data analysis

Data were analyzed using SPSS version 17.0 for Windows (SPSS, Inc., Chicago, Illinois). Frequency, percentage, mean, *SD*, *t* test, and one-way analysis of variance (ANOVA). The *p*-value for the significance level was set at less than .05.

2.4 Ethical considerations

This study was approved by the (institution name removed for blind review) research ethics committee (Institutional Review Board approval: 103-4962B). The researchers visited every unit and provided information about the study to all nurses who met the recruitment criteria. Informed consent was obtained from each participant prior to data collection.

3. Results

3.1 Demographic data

The average age of the 256 participants was 29.8 years (*SD* = 6.12), the majority were female and unmarried (96.1% and 68.4%, respectively), and most had earned a university degree (81.2%). In addition, the nurses' mean work experience was 28.4 years. The number of participants working in the emergency room (ER), wards, and intensive care unit (ICU) were 34 (13.3%), 154 (60.2%), and 68 (26.6%), respectively. In terms of nurses' job level, 30.1% were classified as N1, and 95.7% worked shifts (Table 1).

3.2 The distribution of the health status

The mean score of the Chinese Health Questionnaire (CHQ-30) was 1.91. Health status subscale factors, physical health had the highest mean score (table 2).

3.3 Differences among demographics, and health status variables

Results showed a significant difference between participants' physical health, the data showed significant differences between participants based on gender ($t = 2.60, p < .05$). For mental health, results showed significant differences among nurses by degree of education ($t = -2.5, p < .05$). Subsequently, for social health,

results showed significant differences by nurses' degree of education ($t = -2.00, p < 0.5$) and whether or not they had children ($t = 2.50, p < .05$). Finally, for health status, results showed significant differences based nurses' gender ($t = 2.1, p > .05$) and education degree ($t = 2.3, p < .05$) (Table 3).

Table 1: Participants' demographics and health status subscales

| Variables | <i>n</i> | % | <i>M</i> | <i>SD</i> | Rank |
|-------------------------------|----------|------|----------|-----------|------|
| Age | | | 29.8 | 6.12 | |
| Gender | | | | | |
| Male | 10 | 3.9 | | | |
| Female | 246 | 96.1 | | | |
| Education degree | | | | | |
| College | 48 | 18.8 | | | |
| University | 208 | 81.2 | | | |
| Received continuing education | | | | | |
| Yes | 22 | 8.6 | | | |
| No | 234 | 91.4 | | | |
| Years employed as nurse | | | 28.4 | 6.04 | |
| Marital status | | | | | |
| Unmarried | 175 | 68.4 | | | |
| Married | 81 | 31.6 | | | |
| Have children | | | | | |
| Yes | 69 | 27 | | | |
| No | 187 | 73 | | | |
| Living with parents-in-law | | | | | |
| Yes | 19 | 7.4 | | | |
| No | 237 | 92.6 | | | |
| Work sector (department) | | | | | |
| Emergency room | 34 | 13.3 | | | |
| Wards | 154 | 60.2 | | | |
| Intensive care unit | 68 | 26.6 | | | |
| Job level | | | | | |
| N1 | 77 | 30.1 | | | |
| N2 | 69 | 27 | | | |
| N3 | 56 | 21.9 | | | |
| N4 | 54 | 21.1 | | | |
| Shift work | | | | | |
| Yes | 245 | 95.7 | | | |
| No | 11 | 4.3 | | | |

Note: $N = 256$.

Table 2: The distribution of the health status

| variables | <i>M</i> | <i>SD</i> | Rank |
|-----------------|----------|-----------|------|
| Health status | 1.91 | 0.4 | |
| Physical health | 1.97 | 0.54 | 1 |
| Mental health | 1.83 | 0.48 | 3 |
| Social health | 1.93 | 0.34 | 2 |

Table 3: Differences among demographics, and health status variables

| Variables | Physical health | Mental health | Social health | Health status |
|--------------------------------------|----------------------|----------------------|----------------------|----------------------|
| | <i>M</i> ± <i>SD</i> | <i>M</i> ± <i>SD</i> | <i>M</i> ± <i>SD</i> | <i>M</i> ± <i>SD</i> |
| Gender | | | | |
| Male | 2.4±.5 | 2.1±.3 | 2±.3 | 2.1±.3 |
| Female | 1.9±.5 | 1.8±.5 | 1.9±.3 | 1.9±.4 |
| <i>t</i> -value | 2.6* | 2 | 0.8 | 2.1* |
| Education degree | | | | |
| College | 1.9±.6 | 1.7±.5 | 1.8±.4 | 1.8±.4 |
| University | 2±.5 | 1.9±.5 | 2±.3 | 1.9±.4 |
| <i>t</i> -value | -1.6 | -2.5* | -2.0* | -2.3* |
| Received continuing education | | | | |
| Yes | 1.8±.5 | 1.7±.5 | 1.8±.4 | 1.8±.4 |
| No | 2±.5 | 1.9±.5 | 2±.3 | 1.9±.4 |
| <i>t</i> -value | -1.6 | -1.8 | -1.7 | -1.9 |
| Marital status | | | | |
| Unmarried | 2±.5 | 1.8±.5 | 2±.3 | 1.9±.4 |
| Married | 1.9±.6 | 1.8±.5 | 1.9±.4 | 1.9±.4 |
| <i>t</i> -value | 1.5 | 0.4 | 1.9 | 1.3 |
| Have children | | | | |
| Yes | 1.9±.6 | 1.8±.5 | 1.9±.4 | 1.8±.5 |
| No | 2±.5 | 1.8±.5 | 2±.3 | 1.9±.4 |
| <i>t</i> -value | -1.5 | -0.5 | -2.5* | -1.5 |
| Living with parents-in-law | | | | |
| Yes | 1.8±.5 | 1.8±.5 | 1.9±.4 | 1.8±.4 |
| No | 2±.5 | 1.8±.5 | 1.9±.3 | 1.9±.4 |

| | | | | |
|--------------------------|--------|--------|--------|--------|
| <i>t</i> -value | -1.4 | -0.7 | -0.5 | -1 |
| Work sector (department) | | | | |
| ER | 2.0±.6 | 2±.5 | 2±.5 | 2±.5 |
| Wards | 1.9±.5 | 1.8±.5 | 1.9±.3 | 1.9±.4 |
| ICU | 2±.5 | 1.9±.5 | 1.9±.4 | 1.9±.4 |
| <i>F</i> -value | 0.9 | 3 | 0.7 | 1.7 |
| Job level | | | | |
| (1) N1 | 2±.5 | 1.9±.4 | 1.9±.3 | 1.9±.4 |
| (2) N2 | 2±.6 | 1.9±.6 | 2±.4 | 1.9±.5 |
| (3) N3 | 2±.5 | 1.8±.4 | 1.9±.3 | 1.9±.4 |
| (4) N4 | 1.9±.5 | 1.8±.4 | 1.9±.3 | 1.9±.4 |
| <i>F</i> -value | .44 | .20 | 1.2 | .34 |
| Shift work | | | | |
| Yes | 2±.5 | 1.8±.5 | 1.9±.3 | 1.9±.4 |
| No | 2±.6 | 2±.5 | 2±.2 | 2±.4 |
| <i>t</i> -value | -0.6 | -1.4 | -0.5 | -1 |

Note. * $p < .05$;

M±SD = Mean ± Standard Deviation; ER = Emergency department; ICU = Intensive Care Unit.

4. Discussion

Participants' health status, the order of mean scores, as ranked from highest to lowest, were physical health, social health, and mental health. In comparison to the current study, reported higher scores for physical and mental health [8]. This difference may have occurred because these studies included younger participants with better self-awareness than those in present study. This finding was consistent with several previous studies [15-16]. Those studies found that nurses physical health as poor or very poor and assessed their mental health as such, while previous study showed that adequate sleep and rest were beneficial to physical and mental health [8]. Therefore, it is recommended that hospital administrators provide nurses that switch shifts with the adequate leave necessary for the adjustment of their biological clocks. Additionally, they should include courses on topics such as stress relief in their in-service education programs.

In the current study, participants who were hadn't children scored significantly higher on social health than those who had children. The results of the present study were congruent with previous studies have shown that reported that working women in Taiwan and Iceland experience stress not only from work, but also from household chores, childcare, and care for other dependent family members[15, 16]. A possible explanation for this situation is that working women spend more time caring for children and completing housework than their husbands [5]. Currently study also point out that working married women experience higher levels of family stress compared to married men [17].

In addition, the present study found that female nurses scored significantly lower than male nurses on both

physical health and overall health status, which is consistent with findings from previous study [8]. Furthermore, consistent with results from recently study, nurses who had obtained a university degree or above scored significantly higher than college graduates on mental health, social health, and overall health status [11]. The reason for this finding may be that because individuals with a higher education level are more frequently exposed to information about healthy behaviors, they have increased coping methods for relieving stress and solving health problems. However, these findings are inconsistent with those from previous study, which found no significant difference between education and health status [12]. Here, the reason for this discrepancy might be that participants had no significant differences in education levels because they were all students at a particular university of science and technology. The results of the present study also showed no significant difference between work sector (department) and health status, which is consistent with recently results [17]. However, a study indicated that outpatient nurses had better overall health promotion than ER and ICU nurses [18]. In this case, the reason might be that outpatient nurses have a more normal lifestyle and a fixed schedule. Therefore, we recommend that, as much as possible, nurses should be given sufficient time off and a stable life schedule to provide them with a chance to recuperate.

5. Conclusion and recommendations

In summary, the factors of health status in nurses involved complex and multifactorial etiologies. Thus, that health authorities should scrutinize the working environment of nurses and define factors that impact on physical, mental and social health. This present study found that gender was associated with physical health, education degree was associated with mental health, social health, and health status. Whether or not they had children was associated with social health. The appreciation of several interventions might facilitate the health status: (1) provided information regarding convenient fitness programs in female nurses to enhance this population' physical health; (2) assist this population in finding available resources such as support groups or mental health services where this group can learn how to deal with their psychological issue; (3) educate this population to joint flexible educational topics, and broaden their perspectives.

There are a number of limitations to this study. One limitation related to the sample, which was recruited from a single medical center hospital. Consequently, the results may not be generalizable to nurses employed in other hospitals and may be subject to regional limitations. Furthermore, the study utilized a cross-sectional design, which is subject to the usual limitations of this method. Finally, longitudinal research would allow for the assessment of the evolution of health over time.

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