Survey on the practice of self-care and HLC among nursing students

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Abstract

Using the Japanese HLC (JHLC) scale and a measurement scale for general self-care performance, we analyzed self-care among 84 nursing students at matriculation. For JHLS, scores for the Internal-HLC were highest, as respondents believed that they were responsible for their illnesses and health. Nursing students obtained high scores for stress management self-care and low scores for dietary self-care. Students consulted those around them when they had problems, and performed self-care aimed at preserving balance of body and mind by consciously taking breaks in times of physical stress. However, participants tended not to eat balanced meals or make healthy food choices. These results have illuminated some areas that need to be addressed when providing guidance to students about managing their health.

Introduction

Nursing students are trained as future members of health, medical, or public welfare teams. Through lectures and practical training, they acquire medical knowledge and technique, and learn essential day-to-day patient care based on patient health and individual stages of development. The ability to practice general self-care is essential for human life. Moreover, the nurse's self-care affects their patients. It is thought that nursing students' thoughts and attitudes toward daily life and health-in other words, their self-care activities-influence the people they care for.

Orem (1995) describes self-care as "various practices initiated and undertaken by the individual in order to maintain life, health, and peace of mind; adults undertake self-motivated care for themselves" and "in the practice of self-care, it is necessary to have the capacity to manage oneself amid changing and unchanging environments." Orem (1995) provides three essential conditions for self-care: general self-care, developmental self-care, and self-care to prevent health deterioration. General self-care is "seen as common to humans at all stages of the life cycle; changes in response to age, developmental stage, environment, and other factors; and occurs in relation to the life process, maintenance of the integrity of human structure and function, and general tranquility."

Nursing training promotes many self-care behaviors, as seen in their patterns of health consciousness and emotional adjustment. Self-care behavior is also influenced by the presence or absence of a support system (Kuroki, 1998). Moreover, a comparison of self-care rates among nursing students of different backgrounds demonstrated that these were dependent upon their year in school and clinical training (Araki, 2000).

Individual beliefs about health influences the behavior aimed at maintaining health. The influential Locus of Control (LOC) concept states

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that "people have different beliefs about whether what occurs to themselves is the result of their own actions and attitudes (Internal) or whether they believe it to be the result of a powerful other, such as luck, misfortune, or chance (External)" (Rotter, 1980). Health Locus of Control (HLC) refers to the concept of LOC applied to the area of health behavior. HLC beliefs are measured by the Multidimensional Health Locus of Control (MHLC) Scale (Wallston, 1978). The Japanese version of the HLC (JHLC) scale, revised by Horike, is frequently used in Japan (Horike, 1991).

Nursing students and nursing professionals have reported an internal HLC in surveys (Kobayashi, 1998) and their beliefs on personal health and reasons behind illnesses influence their self-care. In this study, we attempted to clarify the status of HLC and the practice of self-care among nursing students at matriculation.

Methods

Research Participants

Participants were 84 first-year nursing students at a private university who agreed to participate in this study.

Questionnaire Items

Basic characteristics. Characteristics recorded included age, sex, marital status, highest level of education, health condition in the past year, history of serious illness, history of hospitalization lasting more than one week, and experiences with alternative medical treatments (and the type when applicable).

Measurement scale for the practice of general self-care (MSPGS) in nursing students (Takama, 2002) is composed of 37 items. Each item was rated from 1 to 4, and possible scores ranged from 37 to 148; higher scores were associated with a higher degree of self-care. Cronbach's α was 0.79.

JHLC scale. The JHLC scale can be broken down into 5 subscale categories that reflect beliefs in reasons for health and illness: Internal (I-HLC), Family (F-HLC), Professional (Pr-HLC), Supernatural (S-HLC), and Chance (C-HLC). Each of the 5 subscales contains 25 items that are rated from 1 to 6. The point range of each was 5 to 30; a high score for a subscale indicated a higher attribution in that category. Cronbach's α was 0.83.

Data Collection

Participants were provided with oral and written explanations of the study's purpose. Survey forms were distributed to those willing to participate, and consent was confirmed by the return of the surveys. The survey was conducted in early April, 2007.

Ethical Considerations

Participation in this research was voluntary. There was no penalty for nonparticipation. Protection of participant privacy and destruction of data following publication was explained orally and in written form. The present research was undertaken with the approval of the Ethical Review Board of Niigata University of Health and Welfare.

Data Analysis

Statistical analysis was performed with SPSS 15.0J for Windows. Correlations among variables were assessed using Spearman's rank-correlation coefficient. Gender comparisons were made using t-tests, and associations between scales were determined using multiple linear regression analysis. Results are presented as the mean ± standard deviation. Significance was set as a hazard ratio of less than 5% for correlation coefficients and differences between population means.

Results

Participant Characteristics

A total of 84 participants participated in the survey and the collection rate for the questionnaire was 100%. For items left blank in the survey, the mean score for that item was entered. The average age was 18.66±0.50 years. There were 62 women (73.8%) and 22 men (26.2%). All participants were unmarried and reported high school completion as their highest level of education. 79 (94.0%) participants considered their health condition in the previous year to be good and 18 (21.4%) had undergone hospitalization. With respect to alternative medical treatments, 4 (4.8%) had used moxibustion, 3 (3.6%) had received acupuncture, 2 (2.4%) had some other treatment, and 75 (89.3%) reported no such treatments.

Analysis of Factors in the MSPGS in Nursing Students

We calculated the mean and standard deviation of the 37 survey items and excluded seven items found to exhibit a ceiling or floor effect. Factor analysis was performed on the remaining 30 items using the principal factor method and a 7-factor structure was found to be appropriate. The 7 factors were further subjected to another round of factor analysis by the principal factor method and varimax rotation. Nine items with factor loadings of less than 0.4 were removed from the analysis. The cumulative contribution ratio was 38.5%.

Factor 1 was composed of the following four items: "my daily sleeping and waking times are generally regular," "I generally get enough sleep," "when I'm tired, I go to sleep earlier than usual," and "even when working at night or doing something else, I try to get sleep." Factor 2 was composed of the following three items: "I eat fatty foods in moderation," "I eat fatty foods in moderation," and "I take salt in moderation." Factor 3 was composed of the following three

items: "When I get discouraged, I vent to someone," "When I have worries or concerns, I talk to someone I can trust," "When I am sick, I consult someone I am close to." Factor 4 was composed of the following three items: "I ask and follow the opinions of others," "I don't try to express myself openly in front of others, but instead act so that everyone will like me," "I control myself in order to accommodate the other person." Factor 5 was composed of the following three items: "When I buy food, I check nutritional labels," "I adjust the amount of caloric intake based on the amount of work I do," and "I check to see that refined or processed food does not contain harmful additives." Factor 6 was composed of the following two items: "I don't eat between meals" and "I eat moderately." Factor 7 was composed of the following three items: "I eat fruits and vegetables every day," "I consume health and natural foods," and "I am mindful of nutritional balance during meals."

MSPGS in Nursing Students : Subscale Correlations and Means, Standard Deviations, and Alpha Factors.

The scores for the 7 factors were as follows: Factor 1, 2.99±0.78; Factor 2, 2.36±0.62; Factor 3, 3.13±0.71; Factor 4, 2.98±0.60; Factor 5, 1.82±0.67; Factor 6, 2.17±0.72; and Factor 7, 2.70±0.60. Internal consistency was assessed by calculating the subscale α value. The results were: Factor 1, $\alpha = 0.85$; Factor 2, $\alpha = 0.76$, Factor 3, $\alpha = 0.71$; Factor 4, $\alpha = 0.64$; Factor 5, $\alpha = 0.65$; Factor 6, $\alpha = 0.63$; and Factor 7, $\alpha = 0.49$.

MSPGS in Nursing Students : Subscale Score differences between men and women.

Scores for Factor 3 (t (82)=3.76, $p<0.001$) and Factor 5 (t (82)=2.05, $p<0.05$) showed a significantly higher score for women compared to men. No significant difference between men and women were found in other factors.

MSPGS in Nursing Students : Subscale Correlation of Scores for Men and Women.

For men, there was a significant correlation between Factors 3 and 1, Factors 3 and 6, and Factors 5 and 2. For women, there was a significant correlation between Factors 2 and 3, Factors 3 and 5, Factor 2 and 6, and Factors 5 and 7. (Table 1)

Examination of the Practice of Self-care, Hospitalization Experience, and Health Condition in the Previous Year.

No significant differences were found in the practice of self-care among those who reported hospitalization lasting more than one week or a serious illness. Likewise, self-reported health status for the previous year was not correlated with self-care practice.

Multiple linear regression analysis of JHLC subscale correlations and the mean, standard deviation, and self-care practice scores.

Scores for the five factors were: I-HLC 24.26±4.46, F-HLC 22.40±4.57, Pr-HLC 17.82±4.27, C-HLC 13.24±4.60, and S-HLC 10.98±4.57. I-HLC scored the highest of all factors. Next, a multiple linear regression analysis was performed on scores obtained from the MSPGS and scores obtained from JHLC subscale categories. No significance was found in the standard partial regression coefficient for scores obtained with the MSPGS in nursing students.

Correlation of JHLC Subscale and MSPGS in Nursing Students Subscale

Significant correlations were found between F-HLC and Factor 6, C-HLC and Factor 6, I-HLC and Factor 6, and S-HLC and Factor 3 (Table 2).

Discussion

Our findings are consistent with Takama's concept of the measurement scale for practice of general self-care in nursing students, and we were able to derive similar self-care behaviors. In this study, seven factors were derived using the MSPGS in nursing students. Factor 3 was shown to have the highest value of 3.13 and using a standard of 2.5, Factors 1 and 4 also had high values, each at around 3.0. These results showed that nursing students managed stress by talking to those around them when they had worries and resting during physically trying times. However, educators should still provide a support system that is readily available to students.

Scores for Factor 3 by gender were 2.68±0.66 for men and 3.30±0.66 for women, demonstrating that stress management tended to be more difficult for men. Moreover, many nursing students live away from home and must manage themselves amid new interpersonal relationships; therefore, we believe students need accessible counseling and support from educators.

The lowest scores were received for factors relating to nutrition and diet: Factor 5 (1.82) was lowest and Factors 6 and 2 also received scores lower than 2.5. The scores for Factor 5 by gender were 1.58±0.48 for men and 1.91±0.70 for women. We presume that men ate foods prepared by family members and were therefore less conscious of its nutritional value.

It was expected that nursing students would become more aware of the connection between disease and lifestyle habits as they continue their studies and take a greater interest in nutrition. However, the present study has produced the same results as previous research with a lower score for self-care in dietary habits than other self-care factors (Inoue, 2004), suggesting that nursing students require dietary guidance.

The results of the 2006 National Health and Nutritional Survey showed that many men and women in their 20s skipped breakfast, particularly men (approximately 30%) (Health Council Administrative Division Lifestyle Disease Prevention Office, 2006). We presume that many of them relied on dietary and nutritional

supplements. Factor 1 was a key modulator for dietary behavior in that study. In the present study, Factors 2, 5, 6, and 7 were also influential. Factor 2 (stress management) was derived as Factor 3 in our study. Factor 3 was derived as Factor 1, and Factor 4 (key modulator for human relationships) was derived as Factor 4 in our study.

HLC scores of nursing students can be ranked in the following order from high to low: I-HLC, F-HLC, Pr-HLC, C-HLC, and S-HLC. This demonstrates that nursing students believe that they are responsible for their health and illness. The same order and comparable scores were obtained in a survey conducted among 259 nursing students and working nurses (Kobayashi, 1998).

Although we initially thought that high scores for I-HLC would influence the practice of self-care, we found no significant correlation in this study. On the other hand, high S-HLC scores were correlated with high scores for Factor 3 (stress management). In times of stress, nursing students consulted others, perhaps thinking that others could solve their problems. In the present research, Factor 6 (not eating between meals and eating moderately) was associated with high scores for I-HLC, C-HLC, and F-HLC. Although the student decides the time and amount of food they eat, they were influenced by others while consuming food provided by family members and eating with friends.

Limitations and Future Directions

In the present study, we found a connection between HLC and self-care, but other factors also appear to influence self-care. Further research is necessary to understand the influence of skill level, year in school, living arrangement (whether the student lives alone), and frequency of eating out. It is also necessary to conduct a longitudinal study and increase the number of participants.

Conclusions

We analyzed self-reported attitudes toward self-care in 84 nursing students at matriculation. Students tended to have an internal locus of control, believing that they are responsible for their health, but this belief did not influence self-care. Nursing students displayed the highest scores for self-care in stress management, and female students showed higher rates of practicing stress management than male students. The lowest scores for self-care were in students' dietary habits and we concluded that students require guidance about their dietary habits.

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Table 1 Relation ships between the Measurement scale for the practice of general self-care (MSPGS) in nursing students of scores for men and women

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Factor 1	–	-.13	.15	-.54	.56	.61	.14
Factor 2	.33	–	.31*	.12	.30*	.36**	.21
Factor 3	.57**	.18	–	.06	.22	-.08	.10
Factor 4	-.12	.07	.16	–	.03	.02	-.06
Factor 5	.38	.72**	.14	-.03	–	.08	.39**
Factor 6	.23	.05	.44*	.30	.18	–	.01
Factor 7	.06	-.04	.19	-.10	.16	-.12	–

*$p<.05$, **$p<.01$

Upper right : Female, Left under : Male

Table 2 Correlation of JHLC subscale and Measurement scale for the practice of general self-care (MSPGS) in nursing students subscale

	Measurement scale for the practice of general self-care (MSPGS) in nursing students subscale							JHLC subscale				
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	F-HLC	Pr-HLC	C-HLC	S-HLC	I-HLC
Factor 1	–	.04	.25*	-.07	.12	.12	.12	.07	.19	.10	.12	.17
Factor 2		–	.23*	.10	.37**	.23*	.11	-.03	-.07	-.07	.07	.12
Factor 3			–	.06	.26*	.09	.15	.07	-.02	-.03	.23*	.14
Factor 4				–	.05	.12	-.05	.18	.02	-.06	-.15	.19
Factor 5					–	.10	.36**	-.08	.05	.09	.18	-.17
Factor 6						–	-.03	.23*	.01	.22*	.10	.23*
Factor 7							–	.02	-.05	-.04	-.01	-.02
F-HLC								–	.30**	.10	.21	.35**
Pr-HLC									–	.37**	.16	.11
C-HLC										–	.36**	.07
S-HLC											–	.05
I-HLC												–

*$p<.05$, **$p<.01$