

Self-care among Nursing Students: Determining Constructive Concepts of Self-care using Factor Analysis

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Key words : nursing students, practiced degree of self-care, constructive concepts

ABSTRACT

In an effort to clearly define the constructive concepts of self-care among nursing students, in the present study a survey was conducted a survey of 655 individuals, comprised of 260 college nursing students and 395 vocational school nursing students. We found four factors of constructive concepts of self-care among nursing students, which included maintaining diet, coping with stress, maintaining habits and regulating lifestyle patterns, and maintaining interpersonal relationships.

INTRODUCTION

Self-care is a way of life that plays a crucial role in staying healthy and maintaining a daily customary life. It is often regarded as a type of behavior that individuals acquire based on their growth and development, and nursing students are no exception. At some point in their future, nursing students will be responsible for the self-care of others; they will evaluate the self-care of others and offer assistance. As an individual obliged to help others, a nursing student's own set of self-care practices has a considerable effect on how he/she assists others. Therefore, we sought to clearly determine the structures of daily self-care that is actually practiced among nursing students.

PURPOSE

The objective of this study was to conduct a survey of nursing students using a questionnaire to determine the degree to which they practice self-care, and to examine their constructive concepts of self-care.

METHODS

Participants

A total of 655 individuals, comprising 260 college nursing students and 395 vocational school nursing students, participated in this study. Before participating in this study, we obtained the consent of each nursing student. The students were informed of the objective and methods of this research study, as well as the content of the questionnaire, protection of their privacy, participation consent, and retraction of consent.

Content

We assessed the degree to which self-care was practiced in day-to-day life among nursing students. In addition, we collected information on some fundamental characteristics of these students, such as age, gender, academic year, affiliation, health condition, and history of illness. Our original survey consisted of 130 questions using a four-point Likert scale based on Orem's universal self-care model of nursing. We

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Table 1

Factor one (maintaining diet)

Orem requisite	factor designation	questions	first factor	
Dietary intake	maintaining diet	5	consume fatty foods in moderation	0.689
		4	consume sugar in moderation	0.641
		21	eat healthy and natural foods	0.639
		22	check ingredients when purchasing food	0.634
		19	avoid foods with additives	0.624
		3	consume sodium in moderation	0.597
		26	eat foods with a balanced diet in mind	0.572
		30	consume calories in accordance with activity	0.423
		1	eat moderate portions	0.486
		2	do not snack	0.412
		29	get plenty of dietary fiber	0.401
factor loading sum of squares				12.811
contribution rate				10.847
cumulative contribution rate				10.847

Factor two (coping with stress)

Orem requisite	factor designation	questions	second factor	
Solitude & society	coping with stress	23	consult with someone when feeling discouraged	0.701
		13	consult with someone I can trust when I am worried or having a tough time	0.675
		28	consult with someone close when I feel sick	0.637
		27	talk with likeminded friends	0.599
		14	express my opinion when I deem it necessary	0.543
		24	amount and types of activities I do correspond with my health condition	0.421
		factor loading sum of squares		
contribution rate				10.847
cumulative contribution rate				10.847

conducted a feasibility study of this survey with 10 nursing students and asked them to indicate any deficiencies with the questions. We eliminated questions with disproportionate averages, questions that were frequently left unanswered, and questions with little variance before creating our final 121-item questionnaire.

Procedure

We distributed and collected the questionnaires in a classroom setting for those college nursing students who agreed to participate in this study. A collaborator in this study carried out the same procedures for the vocational school nursing

Factor three (maintaining lifestyle habits)

Orem requisite	factor designation	questions	third factor	
Activity & rest	Maintaining lifestyle habits	11	get plenty of sleep	0.772
		12	go to bed, wake up at same time every day	0.747
		6	eat fruit and vegetables every day	0.712
		7	eat meals made at home	0.589
		25	go to bed earlier than normal when tired	0.525
factor loading sum of squares				4.496
contribution rate				3.811
cumulative contribution rate				19.841

Factor four (maintaining interpersonal relations)

Orem requisite	factor designation	questions	fourth factor	
Social interaction	Maintaining interpersonal relations	17	even if someone makes me unhappy, I quickly regain my normal frame of mind	0.885
		18	brush it off as a joke when someone is giving me a hard time	0.843
		16	I control myself to get along with others	0.568
factor loading sum of squares				3.679
contribution rate				3.118
cumulative contribution rate				22.957

students. We used SPSS10.0 to perform all statistical analyses of the data, using t test and variance analysis.

± 2.67 years.

RESULTS

Participant Characteristics

A total of 655 students participated in this study, comprising 260 college nursing students (248 females, 12 males) and 395 vocational school nursing students (378 females, 17 males). The average age of all nursing students was 19.25

Factor Analysis

The results of our 121-item questionnaire were analyzed using the scree plot method, from which we determined four main factors. Next, we performed a factor analysis with these four factors using the principal factor method and varimax rotation in accordance with our assumptions. We adopted the items with a factor loading of 0.4 or higher as a baseline (Table 1). The first factor consisted of self-care topics related to dietary

Table 2 Comparison of self-care scores by fundamental attributes

affiliation comparison n=655			gender comparison n=655		
factor/number of people	university (260) vocational school (395)		factor/number of people	female (626) male (29)	
	maintaining diet	37.86		37.02	maintaining diet
coping with stress	28.61	28.14	coping with stress	28.51***	24.01
maintaining lifestyle habits	20.51***	18.68	maintaining lifestyle habits	19.38	18.41
maintaining interpersonal relations	19.96***	17.72	maintaining interpersonal relations	19.76	18.68
*** 0.00001			*** 0.00001		

behavior, such as “consume fatty foods in moderation” and “consume plenty of dietary fiber,” which were addressed in 11 items of the questionnaire (1-5, 19, 21, 22, 26, 29, 30). The second factor was on the self-care topic of coping with stress and was addressed in 6 items of the questionnaire (13, 14, 23, 24, 27, 28), such as “consult with someone when feeling discouraged” and “the amount and types of activities I do correspond with my health condition.” For the third factor, self-care topics related to maintaining lifestyle habits were addressed in 5 items of the questionnaire (6, 7, 11, 12, 25) and covered issues from “get plenty of sleep” to “go to bed and wake up at the same time every day.” Finally, 3 items of the questionnaire (16-18) comprised the fourth factor that consisted of self-care topics related to maintaining interpersonal relationships, such as “even if someone makes me unhappy, I quickly regain my normal frame of mind” and “I control myself to get along with others.”

The results of the t tests and variance analyses in this study showed that the self-care scores among women for maintaining diet ($p < 0.001$) and coping with stress ($p < 0.001$) were significantly higher than for men. Furthermore, college nursing students had significantly higher self-care scores

than vocational school nursing students for maintaining lifestyle habits ($p < 0.001$) and interpersonal relationships ($p < 0.05$). There were no significant differences with regard to age, academic year, health condition, and history of illness (Table 2).

DISCUSSION

The results of our factor analysis regarding the degree to which self-care is practiced on a daily basis among nursing students were as follows:

1. The contents of the four factors generally coincided with Orem’s self-care requisites. Factor one (maintaining diet, 11 questions) was related to air, water and food; factor two (coping with stress, 6 questions) was related to solitude and social interaction; factor three (maintaining lifestyle habits, 5 questions) was related to activity and rest; and factor four (maintaining interpersonal relationships, 3 questions) was related to hazard prevention for life and well-being.² These four factors combined can be used for measuring the degree of universal self-care among nursing students.
2. We extracted the four self-care factors of

maintaining diet, coping with stress, maintaining lifestyle habits, and maintaining interpersonal relationships using factor analysis (principle factor method and varimax rotation). We can ascertain that the framework of self-care among nursing students is composed of these four constructive concepts.

3. We found significant differences in the degree to which nursing students practice self-care on a daily basis based on gender and affiliation. These findings can be utilized to help students understand self-care and as a support tool for educators.
4. A support system is necessary for male nursing students who have difficulty coping with stress.
5. Dietary and environmental improvements may benefit male nursing students who have difficulty maintaining their diet.
6. Improvements in maintaining interpersonal relationships are needed among vocational school nursing students.

CONCLUSIONS

The objective of this study was to determine the degree to which nursing students practice self-care and to examine their constructive concepts of self-care. The results of our questionnaire revealed two major findings:

1. Nursing students' constructive concepts of self-care include the four structures of maintaining diet, coping with stress, maintaining lifestyle habits, and maintaining interpersonal relationships.
2. There were differences in self-care based on gender and affiliation among the nursing students.

This study was part of a paper presented at the Fifteenth Conference of the Japanese Association of Health Psychology.

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