

Impact of Stress, Family Strength and Health Care Competence on the Quality of Life in Maritime Students

Jae-Hee Kim¹, Soong-nang Jang², Gie-ok Noh³, Mi-Hyang Ahn¹

¹Dept of Nursing, Kangwon Tourism College

²College of Nursing, Chung-Ang University

³Sungshin Womwn's University

E-mail:jh6857@naver.com

Abstract. The purpose of this study was to examine the stress, family strength, health care competence and quality of life of maritime students, the relationship of the variables and the influential factors for each subarea of the quality of life. The subjects in this study were 240 students, on whom a structured self-administered survey was conducted. The questionnaire used in this study consisted of 97 items, which were 10 items of stress, 28 about family strength, 25 about health care competence, 26 about the quality of life and five about general characteristics. Therefore sustained health education should be provided for maritime students to boost their own health care competence to promote their health.

Keywords: Stress, Family Strength, Health Care, Quality of Life, Maritime Students

1 Introduction

"A strong family" is a concept that has drawn attention from studies of family. This concept has been created as it's perceived that family is important for the maintenance of sound society and personal growth and that the development of strength, which is one of the positives of family, is especially effective [1]. The quality of life refers to a state of wellbeing that shows how an individual evaluates his or her physical, mental, social and functional areas, and individual people's quality of life is under the complex influence of their own physical health, psychology, level of independence, social relationships and environment-specific characteristics [2]. The subjective quality of life of college students is affected by their own health status [3]. As a result of comparing Korean, American and Japanese college students in terms of the quality of life, the quality of life of the Korean college students was found to have been influenced by welfare, economic satisfaction and self- satisfaction, and the fourth influential factor was family relations[4]. So far, there have been a lot of quantitative and qualitative progresses in studies of family strength in our country since there was a growing concern for family strength in the 1990s. Specifically, these studies have examined the subareas or factors of family strength [5,6]. Unlike non-maritime students, maritime students live in group by dwelling in the dormitory during their college years. Such a uniform communal life is likely to bring change to these

students who lived in different family environments until adolescence. After they finish college and go out to sea for their job, they are medically disadvantaged. Few studies have ever examined the health care competence and quality of life of maritime students, and it's now urgently necessary to investigate how the stress, family strength and health care competence of maritime students affect their quality of life, and then how to improve their quality of life should carefully be considered.

1.2 The Purpose of the Study

The purpose of this study was to examine the stress, family strength, health care competence and quality of life of maritime students, the relationship of the variables and the influential factors for the subareas of the quality of life.

2 Method Paper Preparation

2.1. The Subjects and Ethical Considerations

The subjects in this study were the students who were in their second year at a maritime college and resided in the dormitory. The data from 240 students were analyzed. The minimum sample size necessary to make a regression analysis by G-power 3.1.9 program [7] was 147, and the sample size of this study met this requirement. As for ethical considerations, this study was implemented with the approval of the Institutional Review Board.

2.2 Instrumentation and Data Analysis

Structured self-administered questionnaires were used, which consisted of 97 items. It covered stress with 10 items, family strength with 28, the quality of life with 26 and general characteristics with five.

3 Results

3.1 The Quality of Life by General Characteristics

The general characteristics of the subjects that were investigated were age, religion, presence or absence of a friend of the opposite gender, academic standing and self-rated health status(Table 1). Concerning age, every student was in his or her 20s, and the variables that made significant differences to the quality of life were a friend of the opposite gender($t=2.69$, $p=.008$), academic standing($F=4.69$, $p=.010$) and self-rated health status($F=13.25$, $p<.001$).

Table 1. The quality of life by general characteristics (N=240)

Characteristics	Categories	The quality of life (total score)	
		M±SD	t or F(p)
Age	20	70.29±10.13	
Religion	Not religious	69.43± 9.86	-1.89(.060)
	Religious	72.05±10.50	
Friend of the opposite gender	Have	73.23± 9.37	2.69(.008)
	Not have	69.27±10.21	
Academic standing	Good ^a	74.93±10.02	4.69(.010) a>b,c*
	Fair ^b	70.01± 9.93	
	Poor ^c	68.35±10.07	
	Very bad ^a	54.10±26.63	
Self-rated health state	Bad ^b	65.49±10.03	13.25(<.001) e>a,b,c*
	So-so ^c	65.73± 7.66	
	Good ^d	72.90± 9.37	
	Very good ^e	76.48±10.84	

* Scheffe post-hoc analysis

3.2 The Level of Stress, Family Strength, Health Care Competence and Quality of Life

As for the stress, family strength, health care competence and quality of life of the subjects, they got a mean of 17.42±5.71 in stress out of possible 40 points. They got 3.63±0.55 in family strength out of possible five, and 2.72±0.31 in health care competence out of possible four. Concerning the quality of life, their scores in four subareas of the quality of life and total scores were both calculated, and their scores in an additional item about the overall quality of life and health were calculated as well. Regarding total score in the quality of life, they got 70.29±10.13 out of possible 100(Table 2), and they scored highest in the psychological area among the four subareas of the quality of life.

Table 2. Stress, family strength, health care competence and the quality of life

(N=240)			
Variable	M±SD	Range	
Stress	17.42±5.71	0-40	
Family strength	3.63±0.55	1-5	
Health care competence	2.72±0.31	1-4	
Total score	70.29±10.13	20-100	
The quality of life	Physical	13.59±2.19	4-20
	Psychological	14.46±2.36	4-20
	Social	13.96±2.85	4-20
	Living environment	14.11±2.31	4-20

3.3 The Correlation of Stress, Family Strength and Health Care Competence to the Quality of Life

The stress, family strength and health care competence of the students were all significantly correlated with their quality of life (Table 3). The quality of life was lower when they suffered more stress, and better family strength and better health care competence led to the higher quality of life.

3.4 The Influential Factors for the Subareas of the Quality of Life

The subareas of the quality of life were all statistically significant ($F=16.69-22.69$, $p<.001$), and their explainability ranged from 34 percent to 42 percent. The variables that turned out to affect the quality of life were the presence or absence of a friend of the opposite gender, self-rated health status, stress, family strength and health care competence, and the variables that exerted an influence on all the subareas were family strength and health care competence (Table 4).

4 Conclusions and Discussions

This study aimed to determine how the stress, family strength and health care competence of maritime students affected their quality of life. And friend of the opposite gender, self-rated health status, stress, family strength and health care competence were found to have had an impact on the quality of life.

Table 3. The correlation of stress, family strength and health care competence to the quality of life (N=240)

Variable	Stress r (p)	Family strength r (p)	Health care competence r (p)	The Quality of life(total score) r (p)
Stress	1			
Family strength	-.29 (<.001)	1		
Health care competence	-.39 (<.001)	.47(<.001)	1	
The quality of life(total score)	-.44 (<.001)	.59(<.001)	.65 (<.001)	1

Table 4. The results of multiple regression on QOL (N=240)

Variable	Physical	Mental	Social	Living Environment
	β(p)	β(p)	β(p)	β(p)
Religion	.02 (.781)	.01 (.897)	.02 (.659)	-.10 (.074)
Friend of the opposite gender	.09 (.089)	.02 (.667)	.12 (.033)	.02 (.706)
Academic standing	.11 (.155)	.04 (.628)	.01 (.862)	-.08 (.315)
Health	.11 (.054)	.19 (.001)	-.01 (.975)	.01 (.926)
Stress	-.22 (<.001)	-.16 (.003)	-.07 (.234)	-.14 (.019)
Family strength	.27 (<.001)	.24 (<.001)	.30 (<.001)	.26 (<.001)
Health care competence	.27 (<.001)	.33 (<.001)	.34 (<.001)	.36 (<.001)
Adjusted R ²	.38	.42	.35	.34
F (p)	18.95 (<.001)	22.69 (<.001)	17.04 (<.001)	16.69 (<.001)

* Dummy variable

The maritime students got 3.63±0.55 in family strength out of possible five, which was above average. The adolescents whose family strength and school life health were better took a more positive view of their own future, and the level of their positive view of it was above average[8]. And the family strength of the maritime students turned out good. The finding of this study about health care competence was similar to the finding of earlier study that health care competence could be said to be better when there were more health promotion behaviors, a higher quality of life and better self-efficacy[9]. Consequently, the maritime students tended to suffer less stress than non-maritime students, and their family strength was better. Their health promotion behaviors were under the positive influence of the two.

Among the subareas of the quality of life, they scored highest in the physical area(14.46±2.36). The psychological area was identified as the most influential factor for the quality of life, after the physical area, when the Korean version of QOL was used to measure the quality of life, and the fact that any possible differences according to age weren't taken into account seemed the reason. More intensive research should be implemented regarding this in the future. The variables that exercised an influence on the quality of life of the maritime students were stress (r=-.44, p<.001), family strength(r=.59, p<.001) and health care competence(r=.65, p<.001), and their stress, family strength and health care competence had an impact on all the physical, mental, social and living environment subareas of the quality of life. The quality of life was more positively affected when the self-rated health status, family strength and health care competence of the maritime students were better and when they had one or more friend(s) of the opposite gender. Accordingly, it's required

to provide continuing health education for maritime students to keep on improving their own health care competence. Specifically, maritime students mostly start to work as marine officers immediately after their graduation, and they are likely to spend six months to a year on the ship, which results in making them medically disadvantaged. So it seems important for them to be aware of the importance of health care from their college years to keep taking care of their own health. As for the limitations of the study, the findings might not be generalizable since not every maritime student was investigated. In the future, repeated research efforts should be made to determine what to do to boost the quality of life of maritime students and how sustained health promotion behaviors affect lifelong health. In addition, a comparative research should be implemented to compare the stress and health of maritime students and non-maritime students.

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