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Nursing Supplement KAP Study # 3332

Knowledge, anxiety, stress and COVID-19 guidelines practice among nursing students: a cross-sectional study.

Abstract

Objective: Many people were infected and suffered from Covid-19. Studying from home could trigger mental health issues. The aim of this study was to analyze the relationship between knowledge, anxiety, stress with Covid-19 guidelines practice among nursing students

Methods: A cross-sectional study where data were taken by questionnaire. Depression, Anxiety, Stress Scale 21 Questionnaire were used to collect anxiety and stress. The knowledge and Covid-19 guidelines used self-developed questionnaire modified by World Health Organization Guidelines and was validated by reliability and validity test. The sample was 227 nursing students in East Java and the data were taken around June – July 2020 and analyzed by linear regression test.

Results: The study showed that students have good knowledge (78.07 ± 7.226) anxiety (4.06 ± 2.608) stress (6.16 ± 2.623). Covid-19 guideline practice was at 16.86 ± 3.184 . We found that there was no relationship between knowledge and Covid guideline practice ($p = 0.436$), so anxiety and Covid-19 guidelines practice ($p = 0.768$) and stress and Covid-19 guideline practice ($p = 0.354$)

Conclusion: Adequate knowledge of Covid-19, anxiety and stress did not make students obedient to implement Covid-19 guidelines. Nursing students should implement the Covid-19 prevention protocol. In accordance with the role of nurses as educators, nursing students can contribute to the socialization of the prevention of Covid-19 guidelines.

MeSh keywords: nursing, anxiety, Mental Health, Socialization, stress, Covid-19,

Introduction

Coronavirus Disease 19 (Covid-19) firstly appeared in Wuhan China in the end of December 2019; it has become a pandemic that has killed approximately eighteen

thousand people and infected seventy thousand people ¹. Coronavirus is an infectious disease that attacks the respiratory system, which causes fever, dry cough, and asphyxiation ² with quick and high transmission level. On 11 March, 2020, the World Health Organization (WHO) announced that Covid-19 had become global pandemic ³. Many countries implemented lockdown to minimize the spread and transmission, including Italy, Spain, Germany, and China ⁴. Indonesia was included as countries that did not implement lockdown but large-scale social distancing (PSBB). Indonesia became one of the countries with the most number of Covid-19 patients in Southeast Asia ⁵. In the meantime, the global number of Covid-19 patients was 12.3 million, while in Indonesia 70,408 people ⁶.

A study in Jordan showed that 90% of 592 students had adequate knowledge of Covid-19 and its tC-19 ⁸. Another study showed that the emergency problem in the healthcare sector had impact on students' mental condition, they could feel fear and anxiety ⁹.

The impact of the pandemic was not only a risk of getting infected and death, but also psychosocial aspect ⁹ Lockdown and large-scale social distancing made all activities done at home, working and studying from home. A similar situation happened to nursing students. They had to study from home for every kind of assignment. Their daily activities were filled with online studying without going out of their houses, they could not hang out with their friends and have their usual activities. The situation was worsened by news about Covid-19 and the number of people infected every day accessed by the students through social media, which also became a causing factor of stress and anxiety ¹⁰. Students between 19-25 years old were at risk of experiencing anxiety and stress during lockdown and large-scale social distancing ¹¹.

Nursing students who were highly related to health, diseases, healthcare, and the role as agent of change were demanded to have knowledge of current diseases, including knowledge of Covid-19, so they were expected to educate the people around them to improve the implementation of Covid-19 control protocol. The efforts to reduce Covid-19 transmission were, among others, wearing masks when leaving the house,

washing hands with soap, avoiding crowded places, and maintaining distance with other people ¹². By mass education about Covid-19 transmission prevention in various media, it was expected that people understood more and could implement measures in daily life to reduce Covid-19 confirmed cases.

Based on the above background, it is necessary to conduct a survey to find out how to apply the Covid-19 guidelines. This is important as the basis for a prospective nurse to carry out her role as an educator to participate in increasing prevention in handling Covid-19. The aim of this study was to analyze the relationship between knowledge, anxiety, and stress with Covid-19 guidelines practice among nursing students.

Subjects and Methods

This research used cross-sectional study with an online survey to assess the knowledge, anxiety and stress of nursing students. The samples were nursing students of undergraduate programs at several universities in East Java Indonesia. We applied accidental sampling and gathered 227 nursing students, the inclusion criteria was nursing students in second, third, and fourth year, meanwhile the exclusion criteria was students in the first year

The questionnaire about knowledge and Covid-19 guidelines were taken according to World Health Organization's standard ¹². Knowledge questionnaire has 14 items, students informed their knowledge using true and false, the maximum score was 14. The items include transmission ways of virus, name of the virus, signs and symptoms, infectious with or without symptoms, and vaccination development. The knowledge was classified as good (>76%), average (55-76%) and poor (<55%) The stress and anxiety were taken by DASS 21 questionnaire. The respondents responded to seven items of the stress scale. The items of stress scale were such as; I found it hard to wind down. I tended to overreact to situations, I felt that I was using a lot of nervous energy, I found myself getting agitated, I found it difficult to relax, I was intolerant of anything that kept me from getting on with what I was doing, I felt that I was rather touchy. The stress classified was as normal (0-14), mild (15-18), moderate (19-25),

severe (26-33) and extremely severe >34. The six items of anxiety scale were: I was aware of dryness of my mouth, I experienced trembling, I was worried about situation in which I might panic and make a fool of myself, I felt I was close to panic, I was aware of the action of my heart in the absence of physical exertion, I felt scared without any good reason. The respondents informed their symptoms using a 4-item Likert rating scale ranging from 0 (not at all) to 3 (most of the time). The anxiety classified was normal (0-7), mild (8-9), moderate (10-14), severe (15-19) and extremely severe (>20) The DASS questionnaire was well-validated and it had excellent consistency (Cronbach's $\alpha = 0.911$). The Covid-19 guideline practice consists of seven items using Likert rating scale ranging from 3 (most of the time) to 0 (not at all). The items include; I went to public places within the last 14 days, I wear a mask when leaving the house, I keep a social distance, I wash my hands with soap, I used hand sanitizer, I did not touch my face, eyes, noses and mouth, I used tissue or covered my nose and mouth with my elbow when I sneezed. Maximum score was 28, and it was classified as good (>76%), moderate (55-76%) and weak (<55%). Data collection was supplemented with demographic items such as age, sex, city/area.

The data collected **around June-July 2020** were analyzed in the SPSS program 25.0 by mean of descriptive and used regression linear test with a significance level of $\alpha = 0.05$. After the descriptive statistical method, we used Kolmogorov Smirnov to test the normality, where significance higher than 0.05 means that the distribution of data was normal, and the next step was using simple regression linear test.

We collaborated with president of the Nursing Student Association of Universitas Nahdlatul Ulama Surabaya to spread the questionnaire online, and the link was sent to another nursing students association in a different university.

The ethical clearance of this study was from Ethical Committee of Universitas Nahdlatul Ulama Surabaya **(No.152/EC/KEPK/UNUSA/2020, 29 Mei 2020)**. **All respondents gave written informed consent before they participated in this study and confidentiality was guaranteed.**

Results

The sample was 227 nursing students, of which 89% were women (n=204) and 10.1% were men (n=23) mostly of them were 19 years old, 54.2% live in urban area (Table 1). From Table 1, we found nursing student knowledge about Covid-19 level is good (78.07 ± 7.226) having anxiety symptoms (4.06 ± 2.608) having stress symptoms (6.16 ± 2.623) and Covid-19 guideline practice has moderate level (16.85 ± 31.04).

In the next step, we used linear regression test to analyze the relationship between knowledge, anxiety, stress and Covid-19 guidelines practice. We observed that the result of the statistical process had no significant level from each variable; it was higher than 0.05, meaning that there was no relationship between knowledge and Covid-19 guideline practice ($p = 0.436$) there was no relationship between anxiety and Covid-19 guideline practice ($p = 0.768$) and neither with stress and Covid-19 guidelines practice ($p = 0.354$) (Table 2).

According to the result, we found that nursing students know about Covid-19, etiology, symptoms and transmission, meanwhile some of them showed anxiety symptoms like experienced trembling, worried about situation and sometimes close to panic (Table 3). Nursing students applied Covid-19 guidelines in their daily life, but some of them still went to public places most of the time (57.3%) without keeping social distancing.

The implementation of the Covid-19 guidelines for nursing students is very important. This is in accordance with the nurse's role as an educator. Nursing students are prospective nurses who have a responsibility to disseminate Covid-19 guidelines to the community.

Discussion

The result of the study showed that student knowledge of Covid-19 was fairly good. Most students knew about the cause, way of transmission, prevention, signs and

symptoms of Covid-19. Similar condition also happened in students in Italy showing that their level of knowledge of Covid-19 was excellent ¹³. Similarly, medical students in Iran showed good level of knowledge of Covid-19 ¹⁴. The knowledge of Covid-19 was gained from browsing the internet and social media ¹⁵. Lockdown, stay-at-home movement, and studying-from-home program enabled the students to access the internet and obtain news from television. During the pandemic, mass media had significant effect on improvement of knowledge and attitude of the public toward a health problem ¹⁶.

Students' mental health during the pandemic showed that a small number of students had anxiety and stress symptoms. The result of a study in China showed that problems and emergency in the field of public health could affect students' psychosocial condition, which could be in the form of fear and anxiety ¹⁷. The occurrence of Covid-19 has affected some aspects of life, method of studying that mostly became online, social distancing, and wearing masks everywhere, which could trigger reduction of social interaction with each other, causing stress and anxiety of staying at home and increasing the use of cellphones during staying at home ¹⁸. They were looking at news and update info through social media, meanwhile social media itself can increase the possibility of getting stress and anxiety ¹⁹. A study conducted in Nigeria showed that students suffered from mild stress and severe stress ². Similar condition was reported that students in China also suffered from mild stress and anxiety ⁹. The factors affecting students' anxiety included anxiety of not being able to graduate on time, economic condition of their families, and stay-at-home daily life that only made them feel bored and weary.

The result of the study showed that some students did not wear masks when leaving their houses, did not maintain social distancing, and rarely washed hands, but, in general, they were proactive in implementing Covid-19 control protocol in daily life. Students' proactive actions were, among others, triggered by their expectation to not get infected by Covid-19.

From this research, we found that there was no significant relationship between knowledge, anxiety, stress with Covid-19 guideline practice. Similar condition occurred in medical students in Ecuador; most of them showed low attitude and behavior in preventing Covid-19 ²⁰. Meanwhile, a study conducted in Jordan reported that there were correlations between students' knowledge with attitude in Covid-19 transmission prevention ²¹. Large-scale social distancing implemented in some big cities in Indonesia, such as Jakarta, Bandung, Surabaya, Gresik, and Sidoarjo, did not make the society, in this case the students, obedient to implement Covid-19 transmission prevention. Despite their good level of knowledge, only half of them wore masks, washed hands, and maintained social distancing. This condition could be one of the causing factors of increasing number of Covid-19 patients in Indonesia ²²

Conclusion

In conclusion, our study shows that the knowledge of nursing student about Covid-19 is in a good level; they have anxiety and stress, but in a small number, and are applying the practice to prevent Covid-10 infection. **The limitation in this study is the sample size was small and not calculated.** However, we still don't know yet when the pandemic will be over. So, we hope that all people in the world will apply good behavior to prevent Covid-19 transmission.

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Table 1: Characteristic of Students

No	Variable	N(%)	Mean (SD)
1	Gender		
	Male	204(89.9)	1.1(0.302)
	Female	23(10.1)	
2	Age		
	18 years old	21(9.3)	
	19 years old	74(32.6)	20.10(1.5888)
	20 years old	57(25.1)	
	21 years old	39(17.2)	
	22 years old	36(15.9)	
3	Region		
	Urban	123(54.2)	
	Rural	104(45.8)	
4	Knowledge Level		78.07(7.226)
	Good	171 (75.3)	
	Average	55(24.2)	
	Poor	1(4)	
5	Anxiety		4.06(2.608)
	Normal	205(90.3)	
	Mild	13(5.7)	
	Moderate	8(3.5)	
	Severe	1(0.4)	
	Extremely Severe	0	
6	Stress		6.16(2.623)
	Normal	225(99.1)	
	Mild	(0.9)	
	Moderate	0	
	Severe	0	
	Extremely Severe	0	
7	Covid-19 guidelines Practice		16.87(3.184)
	Good	156(68.7)	
	Moderate	57(25.1)	
	Weak	14(6.2)	

Table 2 Correlation between Knowledge, Anxiety, Stress and Covid-19 Guidelines Practice

Variable	Covid-19 Guidelines Practice	
	t	P-values
Knowledge	0.780	0.436
Anxiety	0.295	0.768
Stress	0.0.929	0.354

Table 3 the Item of Variables; Anxiety, Sstress and Covid-19 Guidelines Practice (n= 227)

Variable	Most of Time n (%)	Good part of time n (%)	Some of the time n (%)	Not at All n (%)
Anxiety: Item				
I was aware of dryness of my mouth	2 (0.9)	21 (9.3)	151 (66.5)	53(23.3)
I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	1 (0.4)	1 (0.4)	31 913.7)	194 (85.5)
I experienced trembling (e.g. in the hands)	1 (0.4)	6 (2.6)	60 (26.4)	160 (70.5)
I was worried about situations in which I might panic and make a fool of myself	4 (1.8)	15 (6.6)	115 (50.7)	93 (41)
I felt I was close to panic	7 (3.1)	34 (15)	126 (55.5)	60 (26.4)
Stress : Item				
I found it hard to wind down	3 (1.3)	8 (3.5)	112 (49.3)	104 (45.8)
I tended to overreact to situations	1 (0.4)	8 (3.5)	116 (51.1)	102 (44.9)
I felt that I was using a lot of nervous energy	2 (0.9)	20 (8.8)	127 (55.9)	78 (34.4)
I found myself getting agitated	1 (0.4)	8 (3.5)	116 (51.1)	102 (44.9)
I found it difficult to relax	2 (0.9)	13 (5.7)	103 (45.4)	109 (48)
I was intolerant of anything that kept me from getting on with what I was doing	4 (1.8)	20 (8.8)	98 (43.2)	105 (46.3)
I went to public places within the last 14 days.	130 (57.3)	88(38.8)	9(4)	-
I wore A mask when leaving the house.	-	7(3.1)	43 (18.9)	176(77.5)
I maintained distance of at least 2 meters when leaving the house.	4(1.8)	50 (22)	72 (31.7)	101 (44.5)
I washed my hands with soap.	-	8(3.5)	57(25.1)	162(71.4)
I used hand sanitizer during activities outside the house.	-	-	74(32.6)	114(50.2)

I did not touch my face, eyes, nose, and mouth.	8(3.5)	68(30)	65(28.6)	86(37.9)
I used tissue and covered my nose and mouth with my elbow when I sneezed.	-	29(12.8)	82(36.1)	116(51.1)