Research Article

Self-Efficacy and Nomophobia in Nurses in Indonesia

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Abstract. This study aimed to determine the relationship between self-efficacy and the level of nomophobia (the fear of being detached from a smartphone) in nurses. This was a descriptive correlative study with a cross-sectional design, where 113 respondents were selected using quota sampling techniques. Data collection was through the Nomophobia Questionnaire and General Self-Efficacy Scale. The study was conducted from June 6 until July 10, 2020, at Hospital X in Bandung, Indonesia. Analysis of the data was through univariate analysis (frequency distribution) and bivariate analysis (Chi-square and Spearman's correlation test). The results showed that most of the respondents were female (66.4%), and ages ranged between 26 - 56 years old with a mean of 37 years old. The minimum and maximum length of work were 1 and 34 years, respectively. The study showed a significant relationship between the cost of using a smartphone and the level of nomophobia. It also showed a relationship between self-efficacy and the level of nomophobia among nurses from X hospital in Bandung ($p < 0.05$). Generally, nurses with lower self-efficacy showed a higher degree of nomophobia. These results may be used in developing clear regulations regarding restricting smartphone usage in hospitals and formulating work strategies. This would improve and maintain the nurses' self-efficacy as an effort to increase the quality of nursing care services as well as patient satisfaction and safety in the hospital.

Keywords: self-efficacy, nomophobia, nurse, smartphone

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1. Introduction

Increase of smartphone usage will lead to an anxious situation known as nomophobia. Nomophobia symptom is the usage of smartphone in a danger category, not appropriate, and excessive [1,2,3]. Study said that 67% of nurses use their personal phone while working [4]. The main reason uttered is to maintain professional work communication. Survey on 1921 respondents, found out that 83% of the respondents said they have used smartphone, 58-78% said they used smartphone while working for professional aims, and 43% used their phones to access social media and look for work related information [5].

Usage of smartphone during workhours will give consequences. Several studies claimed serious impacts of nomophobia which are decrease of attention, decrease of memorizing important things, procrastinating tasks, creating big source of disturbance, and causing disconnection of one and their surroundings are several consequences that can happen [6,7].

Self-efficacy is believed as a psychosocial protection from nomophobia [8,9]. Research on nomophobia topic exist, but the research on self-efficacy and nomophobia is still limited so it is still unsurely known. Factors affecting nomophobia level on nurses should be able to be identified to define prevention measures and appropriate controlling This research aimed to identify the relationship between self-efficacy and nomophobia level on nurses from X hospital in Bandung.

2. Method

This research is a descriptive correlation with cross-sectional design approach. Respondents were chosen using quota sampling technique with 113 respondents acquired. Data collection used Google form consisted of General Self-Efficacy Scale (GSES) instrument to measure self-efficacy. GSES instrument Indonesian version consisted of 10 items. Minimum score is 10 and maximum score is 40, median value was used to determine between low and high self-efficacy. Nomophobia Questionnaire (NMP-Q) were used to measure level of nomophobia. NMP-Q Indonesian version consisted of 20 items, each item had minimum 1 score and maximum 7 score. Total score was categorized based on the instrument recommendation. Validity and Reliability test of both instruments used the Cronbach's Alfa value and was done to 30 respondents apart from the research samples.

Data collection was carried out after passing ethical consideration by Komite Etik Penelitian FIKUI with letter number SK-33/UN2.F12.D1.2.1/ETIK 2020. Data was collected with Google form. Respondents were given description about the research and informed consent on the form's front page. Should the respondents agree, respondents can continue to the next page. The confidentiality of all information will always be kept and there is no element of coercion in this research.

Univariate analysis shows the distribution of frequency from all studied variables which are demographic (age, sex, marital status, educational level, employment period, frequency, cost and duration of smartphone usage), self-efficacy, and level of nomophobia. Bivariate analysis was used to know the relationship between independent variables (self-efficacy) and confounding variable (demography) with the dependent

TABLE 1: Distribution of Frequency of Respondents based on Demographic Data, Usage Duration, Usage Frequency, Monthly Incurred Cost, and Number of Smartphone Owned on X Hospital Bandung (n=113).

Variable	n (%)
Age (Mean ±SD) Min = 26 Years old Max = 56 Years old **Sex** Male Female **Marital Status** Single/Not Married Married **Educational Level** D3 (Vocational) D4/ S1 (Bachelor) S1 + Profesi (Professional) Magister (Master) Magister + Spesialis (Master and Specialist) **Employment period (**Mean ±SD) Min = 1 Years Max = 34 Years **Usage Duration** (Mean ±SD) Min = 1 Hour Max = 16 Hours **Usage Frequency** (Mean ±SD) Min = 3 times Max = 30 times **Number of Smartphone** One (1) Two (2) **Monthly Smartphone Cost** (Mean ±SD) Min = 20.000 Max = 550.000	37.19 ± 6.387 38 (33.6) 75 (66.4) 12 (10.6) 101 (89.4) 59 (52.2) 4 (3.5) 46 (40.7) 3 (2.7) 1 (0.9) 13.72 ± 6.679 5.73 ± 3.293 12.08 ± 5.931 109 (96.5) 4 (3.5) 130725.66 ± 71384.303

variable (level of nomophobia). Statistical test used are the Chi-Square hypothesis test, Gamma, and Spearman Correlation.

3. Result

3.1. Characteristics Figures of Nurses

Table 1 showed the youngest age of the respondent was 26 years old and the eldest was 56 years old with mean of age at 37 years old (SD = 6.387). More than half of the respondents were female (66.4%). Most of the respondents were married (89.4%). The educational levels of the respondents were 52.2% have Diploma III qualification (Vocational) and 40.7% have Sarjana + Profesi qualification (Professional). Employment period of the respondents varied from 1 to 34 years with mean score at 13.72 (SD = 6.679).

Duration of respondents' smartphone usage in a day varied from 1 to 16 hours with mean score 5.73 (SD = 3.293). Most of the respondent have 1 smartphone (96.5%), with the frequency of usage a day was 3 to 30 times with mean score 12.08 (SD = 5.931). The lowest cost expensed by the respondent in a month was Rp. 20.000 and the highest cost was Rp.550.000 with mean score 130.725,03 (SD = 71.384, 886).

3.2. Self-Efficacy Description Based on Nurse Characteristics

Table 2 showed that respondent who had a high self-efficacy were from male respondents (22.1%) and female (40.7%). More than half of the total respondent who already married had a high self-efficacy (53.9%). Respondents with DIII (Vocational) and

TABLE 2: Distribution of Frequency of Nurses' Self-efficacy in X Hospital in Bandung (n=113)

Variable	Self-efficacy			
	Low		High	
	n	%	n	%
Sex Male Female	13 29	11.5 25.7	25 46	22.1 40.7
Marital Status Single/Not Married Marrieds	2 40	1.8 35.4	10 61	8.9 53.9
Educational Level D III (Vocational) D IV/ S1 (Bachelor) S1 + Profesi (Professional) S2 (Master) S2 + Spesialis (Master + Specialist)	25 4 12 1 0	22.1 3.5 10.6 0.9 0	34 0 34 2 1	30.1 0 30.1 1.8 0.9
Self-efficacy	42	37.2	71	62.8

TABLE 3: Distribution of Frequency of Nurses' Level of Nomophobia in X Hospital in Bandung (n=113)

Variable	Level of Nomophobia		
	Mild	Moderate	Severe
	n (%)	n (%)	n (%)
Sex Male Female	9 (7.9) 12 (10.6)	24 (21.2) 47 (41.6)	5 (4.4) 16 (14.3)
Marital Status Single/Not Married Married	3 (2.6) 18 (15.9)	8 (7.1) 63 (55.8)	1 (0.9) 20 (17.7)
Educational Level D III (Vocational) D IV/ S1 (Bachelor) S1 + Profesi (Professional) S2 (Master) S2 + Spesialis (Master+Specialist)	12 (10.6) 1 (0.9) 8(7.1) 0 (0) 0 (0)	35 (30.9) 2 (1.8) 31 (27.4) 2 (1.8) 1 (0.9)	12 (10.6) 1 (0.9) 7 (6.2) 1 (0.9) 0 (0)
Nomophobia	21 (18.6)	72 (63.7)	20 (17.7)

S1+Profesi (Professional) degree who had a high self-efficacy were 34 respondents (30.1%).

3.3. Figure of Level of Nomophobia based on Nurse's Characteristics

Table 3 explains that level of nomophobia based on sex, female had level of nomophobia in moderate category (41.6%), compared to male (21.1%). More than half of the married respondents were in moderate nomophobia level (55.8%), and had a nomophobia in severe level (17.7%).

35 of the D III or vocational respondents had moderate nomophobia (30.9%). Similar condition can also be found in respondents with S1 + Profesi or professional (27.4%) had moderate nomophobia. Respondents with more than 15 years of employment period had the most moderate level nomophobia (22.8%).

TABLE 4: Relationship between Demographic Data with Level of Nomophobia of Nurses in X Hospital Bandung (n=113)

Variable	Level of Nomophobia	
	p	r
Age	0.282	-0.102
Sex	0.425	
Marital Status	0.580	
Educational Level	0.891	0.021
Employment Period	0.266	-0.106
Usage Period	0.691	0.038
Usage Frequency	0.454	0.071
Smartphone owned	0.408	0.079
Cost	0.012*	0.236*
Self-efficacy	0.033*	
(* means on α 0.05; CI 95%)		

All the respondents have nomophobia but in different levels. More than half of the respondents have moderate nomophobia (63.7%), and 21 of the respondents have mild nomophobia (18.6%).

3.4. Relationship between Characteristics and Self-efficacy with Level of Nomophobia

Table 4 showed that the cost expenses in a month had significant correlation with the level of nomophobia, with *p* value 0.012 (p<0.05) with coefficient of correlation 0.236. Results of test between self-efficacy with level of nomophobia using Chi-Square test was found a significant correlation with *p*=0.033 (α=0.05; CI 95%).

4. Discussion

4.1. Relationship between Demographics and Nomophobia

The results of testing the age with the level of nomophobia found no significant relationship. The results of this study are in line with study [6] which found that age did not affect the level of nomophobia of respondents. Different results are shown that younger ages are more likely to develop addiction to social networking or social media via smartphones [10]. Bartwal & Nath also revealed statistically significant differences between different age groups with level of nomophobia [11]. The difference from the

results of this study is possibly because of nomophobia can be found at all age levels and is not limited to one age group.

The results of gender testing and the level of nomophobia obtained an insignificant relationship. However, the mean value in female respondents (mean=82.17; SD=21.378) was a little higher than the male respondents' mean value (mean=76.61; SD= 21.998). The results of this study are in accordance with [11] which states that there is no significant difference between sex and the level of nomophobia. The results of this study contradict with study that find significant relationship between gender and the level of nomophobia [12].

The difference in the results of this study was possibly because both men and women in the sample of this study chose to use smartphones as a method of reducing stress levels at work. This is in accordance with the statement that the increase in smartphone usage is caused by nurses experiencing emotional stress due to high workloads, changing shifts, high demands from patients, and low quality of sleep [6].

The results of testing marital status and the level of nomophobia showed that there was no significant relationship. Other research states that married individuals tend to reduce smartphone usage while working [13]. The difference in the results of the study may be due to family factors, this can be observed from the response of the respondent's item who worried that the family cannot contact them if they do not bring a smartphone (46%).

The results of testing the variable level of education and level of nomophobia showed a meaningless relationship. It is different with study which stated that the higher the education level the higher the level of nomophobia is [13]. The differences between both results may be caused the education level of the respondents does not really influence the choice of information media sources. This is reinforced by the hospital's policy of implementing an Android-based information system that can be easily accessed via a personal smartphone.

The results of employment period testing and the level of nomophobia obtained a meaningless relationship. This study is in line with [14] which obtained a meaningless difference between smartphone usage and individual employment period. Factors that may affect the results of this study are the need of information sources and telecommunications which are not much different between new nurses and nurses who have worked for a long time. Besides, communication and information have become quite important priorities during this pandemic.

The testing result of the smartphone usage duration and the level of nomophobia showed no significant relationship. The results of this study were contradicted to

Aguilera-Manrique that found a relationship between the smartphone usage duration and the level of nomophobia [6]. This is possible due to the feeling of security that is obtained by individuals when carrying a smartphone even though its use is relatively shorter. The same thing was expressed by Bülbüloğlu, et al. which explains that smartphones can contribute to users' sense of security [13].

The test results between the smartphone usage's frequency and the level of nomophobia were not significant. The results of this study are different from Mayasari which stated that the higher the usage frequency, the higher the level of individual nomophobia [2]. Study found that smartphone usage patterns contributed to the incidence of nomophobia [6]. The difference in results in this study requires further research. because the psychological condition of nurses may affect the frequency of using smartphones while working [6]. In addition, pandemic conditions create an increasing need for up-to-date and reliable information.

The test results between the number of smartphones owned by the respondent and the level of nomophobia showed a less significant relationship. Possible factor that may influence the results is that more smartphones feature dual sim card slots, making it easier for individuals to choose to carry just one smartphone instead of carrying more than one smartphone.

The results of testing the costs incurred of smartphone usage with the level of nomophobia obtained a significant relationship. The results of this study are in line with the statements of Pradana, Muqtadiroh, & Nisafani that individuals with nomophobia tend to pay large fees for their smartphones [2]. The sizeable monthly expenses may be caused by purchasing data packages with large capacities, and this is reinforced by the statement which states that individuals with nomophobia tend to panic when their internet quota runs out [15]. The need for a large internet quota may due to changes in learning methods or changes in working patterns at home due to the Covid-19 pandemic.

4.2. Relationship of Self-Efficacy and the Level of Nomophobia

The results of the bivariate analysis showed a relationship between self-efficacy and the level of nomophobia. The findings of this study are consistent with [8] and [9] stated that self-efficacy is one of the psychosocial protectors in overcoming anxiety. Individuals with nomophobia tend to show symptoms of anxiety [16, 7, 17].

Research stated that nomophobia can cause emotional exhaustion among workers. Individuals with nomophobia should have good level of self-efficacy so this will not have

an impact on their performance [18,19]. This also confirmed by research that self-efficacy can build resilience toward anxiety [20].

Decrease in the performance of nurses will affect the quality of nursing care provided. Poor nursing care will have an impact on decreasing patient satisfaction and safety. Research stated that patient satisfaction is very important, because patient satisfaction is a linking factor between perceptions of service quality and patient intentions regarding service selection in the future [21].

The decline in nurses' performance can be prevented. One of the efforts that can be done to improve nurses' performance is through nursing practice education and training [22]. Gilissen, et al. argued that nursing education and practice will shape the self-efficacy of nurses, and improving the quality of nurses' self-efficacy is believed as very important in increasing the ability of nurses to provide care [23]. Self-efficacy is extremely important for nurses at work even though they experience symptoms of nomophobia.

5. Conclusion

This study found that nurses with low levels of self-efficacy showed higher levels of nomophobia. The results of this study can be used by hospitals as a consideration in drafting clear regulations regarding restrictions and prohibitions on the use of smart-phones when nurses are working, as well as a consideration in determining the right program to increase and maintain the level of self-efficacy of nurses as an effort to improve service quality, satisfaction, and patient safety.

6. Limitation

This study was conducted in one hospital only, the study results could not be used as a reference to describe the characteristics of Indonesian nurse in general. This research may have bias data due to responses that are not fully in accordance with the actual situation. Polit and Beck states that respondents can hide their true responses and only provide answers that reflect social values or professional expectations [7]. In addition, the limited research related to similar topics makes it difficult to elaborate the results of the study.

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Conflict of Interest

The authors have no conflict of interest to declare.

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