

The Correlation between Intensity of Smartphone Usage with Social Media Addiction, Fear of Missing Out, and Need for Touch among Adolescents

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Abstract--- Excess smartphone use among adolescents not only can cause physical health-related problems, but also psychological problems. The purpose of this study is to analyze the correlation between the usage intensity of smartphones with social media addiction, fear of missing out and need for touch which is experienced by adolescents. This was a descriptive-analytic study with a cross-sectional approach. The study enrolled 314 adolescents who were recorded as senior high school students in Surabaya, East Jawa, Indonesia, identified using a convenience sampling technique. The independent variable was the usage intensity of smartphones, while the dependent variables were social media addiction, the fear of missing out, and the need for touch. Data were collected using four different questionnaires, consisting of Smartphone Use Frequency (SUF), Bergen Social Media Addiction Scale (BSMAS), The Fear of Missing Out (FOMO) questionnaire, and The Need for Touch Scale (NFTs). Data were then analyzed by using Spearman Rank Correlation with the level of significance $\alpha=0.05$. The study revealed that the usage intensity of smartphones is significantly correlated with social media addiction ($p=0.000$; $r=0.318$), fear of missing out ($p=0.000$; $r=0.255$), and the need for touch ($p=0.000$; $r=0.196$). It can be concluded that the more intensively adolescents use a smartphone, the more they are at risk of experiencing social media addiction, fear of missing out, and need for touch. Therefore, nurses should design a health promotion program for adolescents, so they can use smartphones wisely to prevent smartphone-related problems.

Keywords—Adolescents, Fear of Missing Out; Need for Touch; Social Media Addiction; The Usage Intensity of Smartphones.

I. INTRODUCTION

The high intensity of smartphone usage among adolescents is closely related to smartphone addiction [1]–[3]. The excessive use of social media, which is one of the smartphones' feature can lead to social media addiction, which worsens smartphone addiction among adolescents [4]. Also, excessive use of smartphones can lead to fear of missing out (FoMO) and need for touch [5]. FOMO is a fear of being left behind, the feeling of fear that they will miss a precious moment with their friend when they are not digitally present [6]. Need for touch is an addictive pleasure feeling that comes from the sensation of touch in using smartphones [1], [7]. Adolescents are more vulnerable to problematic smartphone use than adults because they still cannot control their enthusiasm for something interesting, such as smartphones and their features[8].

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The number of social media users in Indonesia continues increasing, reaching an average of 15% per year. Almost 150 million of 268.3 million people Indonesia are active social media users. On average, each person has 11.2 social media accounts/person [9]. The intensity of the average daily time spent on using social media through smartphones in Indonesia is 3 hours 26 minutes. It is higher than the global number, which is only 2 hours 16 minutes [10]. Another report mentioned that an individual checks his smartphone 150 times daily, on average. This means ones may use one's smartphone more than 1,050 times/week [11]. The previous research conducted in Taiwan revealed that from 10.191 adolescents, 30% reported they could tolerate and control their intensity with regard to using a smartphone, 36% experienced withdrawal reactions, 27% showed heavy use, 18% failed to reduce smartphone use, and 10% experienced social media impairment [12]. The high usage intensity of smartphones among adolescents can lead to several physical and psychological health problems, such as sleep disturbances, depression, anxiety, loneliness, dangerous behaviors, and even hypertension [14]. Adolescents with smartphone addiction have a dull brain, cannot realize what is real from what is not real, and were also less likely to achieve high GPAs in school [15]. Need for touch also has an adverse effect such as impulsive buying [16].

Smartphone and its features are a medium for communication, searching information, and sharing creativity, which benefits adolescents [17]. However, the usage intensity of smartphones among adolescents should be controlled. Studies about the effect of excessive smartphone usage on smartphone addiction and adolescent health is overwhelming. Otherwise, there was a limited study which correlated the high intensity of smartphone usage in the incidence of social media addiction, FoMO, and need for touch among adolescents. So, this study aimed to analyze the correlation between the usage intensity of smartphones with social media addiction, fear of missing out (FoMO), and the need for touch experienced by adolescents.

II. METHODS

This was a descriptive-analytical study with a cross-sectional approach. The population was adolescents at Surabaya City, East Java, Indonesia. The calculation of sample size used the application of G*power 3.1.9.2, with statistical tests: correlations: two dependent Pearson's (common index) [18]. The sampling method used was convenience sampling. The sample's criteria were: 1) aged 15-18 years; 2) having one's own smartphone; and 3) being willing to participate in this study. There were 314 respondents involved.

The independent variable was the intensity of smartphone usage which was measured with The Smartphone Use Frequency (SUF) questionnaire [19]. The dependent variables were social media addiction assessed by using The Bergen Social Media Addiction Scale (BSMAS) questionnaire [20], FoMO assessed using The Fear of Missing Out Scale (FoMOs) [6], and need for touch assessed using the Need For Touch Scale (NFTs) [21], [22]. All instruments have gone through the process of back translation and been statistically tested for validity and reliability.

This study was ethically approved by Universitas Airlangga (certificate number: 1481-KEPK). Data were collected using the google form online questionnaire. Informed consent was sent to each respondent's home to be signed by the respondent's parent/guardian, who permitted the respondent to participate in this research. Descriptive statistics were used to summarize the characteristics of samples. Bivariate analysis using the Spearman Rank Correlation test was performed to analyze the correlation between independent and dependent variables with a level of significance of 95%.

III. RESULTS

More than half of the respondents were female (182; 58%). Many of the respondents were 17 years old (113; 36%). Half of the respondents were in their second year of senior high school (162; 51.6%). Mostly, they were living at home (297; 94.6%) together with their parents (289; 92.0%). Many of respondents reported medium usage intensity of smartphones (203; 64.65%), medium levels of social media addiction (191; 60.83%), medium levels of FoMO (124; 39.49%), and a medium level of need for touch (136; 43.31%).

Table 1. The demographic characteristics of the respondents (n=314).

Variables	Categories	n	%
Gender	Male	132	42.0
	Female	182	58.0
Age	15 years old	18	5.7
	16 years old	105	33.4
	17 years old	113	36.0
	18 years old	78	24.8
Grades	10 th grader	59	18.8
	11 th grader	162	51.6
	12 th grader	93	29.6
Residence	Own house	297	94.6
	Boarding house	17	5.4
Living with-	Parents	289	92.0
	Families	23	7.3
	Alone	2	0.6

Table 2. The correlation between the usage intensity of smartphones and social media addiction (n=314).

Smartphone usage intensity	Social media addiction						Total	
	Low		Medium		High		n	%
	n	%	n	%	n	%		
Low	14	4.46	13	4.14	1	0.32	28	8.92
Medium	42	13.38	133	42.36	28	8.92	203	64.65
High	8	2.55	45	14.33	30	9.55	83	26.43
Total	64	20.38	191	60.83	59	18.79	314	100.00

Spearman's Rho p = 0.000; r = 0.318

Table 3. The correlation between the usage intensity of smartphones and FoMo (n=314).

Smartphone usage intensity	Fear of Missing Out (FoMO)										Total	
	Very Low		Low		Medium		High		Very High		n	%
	n	%	n	%	n	%	n	%	n	%		
Low	8	2.55	8	2.55	11	3.50	1	0.32	0	0.00	28	8.92
Medium	35	11.15	72	22.93	73	23.25	16	5.10	7	2.23	203	64.65
High	3	0.96	21	6.69	40	12.74	13	4.14	6	1.91	83	26.43
Total	46	14.65	101	32.17	124	39.49	30	9.55	13	4.14	314	100.00

Spearman's Rho p = 0,000; r = 0,255

Table 4. The correlation between the usage intensity of smartphones and need for touch (n=314).

Smartphone usage intensity	Need For Touch						Total	
	Low		Medium		High		n	%
	n	%	n	%	n	%		
Low	13	4.14	13	4.14	2	0.64	28	8.92
Medium	88	28.03	81	25.80	34	10.83	203	64.65
High	19	6.05	42	13.38	22	7.01	83	26.43
Total	120	38.22	136	43.31	58	18.47	314	100.00

Spearman's Rho p = 0,000; r = 0,196**

The tables show that the usage intensity of smartphones is significantly correlated with social media addiction ($p < 0.005$), FoMO ($p < 0.005$), and need for touch ($p < 0.005$) among adolescents. As the intensity of smartphone usage increases, the likelihood of experiencing social media addiction, FoMO and need for touch rises.

IV. DISCUSSION

The results revealed that the usage intensity of smartphones significantly correlated with social media addiction, FoMO, and need for touch among adolescents. The study found that smartphone usage intensity was related to social media addiction. According to previous research, smartphone usage intensity was strongly related to smartphone addiction [2]. Smartphone addiction is related to the use of social media. The use of short messenger services, messenger, and other social media are the main predictors of smartphone addiction [23].

Social media addiction is a compulsive behavior towards the use of social media that has an impact on the lives of its users, where individuals as users tend to have difficulty controlling usage and feel discomfort when they cannot use social media [24]. Social media addiction is included in one of the categories of internet addiction which is defined as a syndrome where individuals spend more time using the internet and are unable to control their use. Ones stated experiencing social media if they meet three of six indicators, including salience, craving/tolerance, mood modification, relapse/loss of control, withdrawal, conflict/functional impairment [25].

Based on the results of the study, it was also found that 8 respondents had high smartphone usage intensity (↑) but a low addiction level (↓). This is because high smartphone usage intensity is not only caused by excessive use of social media. However, there are also some other features of smartphones used by teenagers, such as: text/SMS messages, music/podcasts/radio, and watching videos/TV/films. It was proven by the majority of respondents that they choose the features of social networking sites followed by text/SMS messages, music/podcasts/radio and watching videos/TV/films on the Smartphone Use Frequency (SUF) questionnaire. Meanwhile, low social media addiction in adolescents is because although they often use smartphones and social media, they are aware of the negative effects of excessive smartphone use. Thus, teens try to minimize the use of social media. This was evidenced by the highest score chosen, namely number 6, which was "Frequently using social media is too excessive so that it gives a negative impact on your work/lessons" on the Bergen Social Media Addiction Scale (BSMAS) questionnaire.

The result showed that smartphone usage intensity was related to the fear of missing out. The results of this study are in line with previous research [7], [26]. Excessive smartphone usage is believed to occur through the formation of habits using one's smartphone, where the behavior of checking notifications seals the habit [27], [28]. Meanwhile, FOMO was slightly related to smartphone usage intensity and most of it was related to the use of a smartphone [5].

Most respondents who had the intensity of using a smartphone were increasing the level of fear of media loss. This was evidenced by the conversion coefficient of $r=0.255$, which shows the level of strength of the relationship between variables. In the intensity variable, the use of smartphones with social media has a very weak relationship strength. Besides, the number of positive contradictory coefficients (+) which indicates these two variables are unidirectional means that the higher the intensity of using a smartphone, the level of fear of loss will also increase. Based on the results of the study, 13 respondents had high use of smartphones (↑) and a high level of fear of lagging (↑). This was proven by the highest score on the notification item no. 5 which states "I need to answer my friend's 'in-jokes'" on the Fear of Missing Out Scale (FoMOs) questionnaire. This shows that most respondents questioned FoMO because of their desire to stay connected with the participants' 'in-jokes'. FOMO is conceptualized in the Theory of Self-Determination (SDT) as a negative result arising from the relationship of individual satisfaction does not need to be resolved [6]. Individuals with satisfied linkage needs will have higher FoMO, while those whose needs are not fulfilled will have higher FoMO [26]. In this case, FOMO satisfaction in adolescents, because it can be connected with participation, can be supported by a low intensity of smartphone usage.

The results showed that smartphone usage intensity was related to the need for touch. The results are in line with previous research conducted in Taiwan [1], [29]. The effect of compulsive use of smartphones shows that

individuals can rely on their cellphones to reduce feelings of discomfort during social contact [1]. The latest smartphone designs have influenced the touch requirements of users. Known as a "touch phone", the latest smartphone feature is a high-resolution touch screen that allows touch tasks to be completed with a finger. Such automatic touches provide instant satisfaction to smartphone users and can potentially lead to an increase in smartphone usage intensity.

Need for touch is a pleasure that comes from the sensation of touch when holding a cell phone [22], [30], needed to complete tasks with one's fingers [1]. Need for touch is a construction in the field of marketing that describes a personality who wants haptic information through their hands [22]. People who are high in this trait are more likely to consider product samples analytically and experimentally in purchasing [31]. Research shows that if the product sample experience is satisfying and enjoyable, people who need touch tend to be involved in impulsive buying [16]. People who need touch can use a touch screen smartphone too often to meet this need.

The results of this study indicate that the majority of respondents who had smartphone usage of medium intensity tended to experience medium touch needs. This was evidenced by the correlation coefficient of $r=0.196$, which shows the level of strength of the relationship between variables. The variable smartphone usage intensity with the need for touch had the strength of a very weak relationship. Besides, the correlation coefficient value was positive (+) which indicates the two variables are unidirectional which means that the higher the smartphone usage intensity, the more the need for touch will also increase. Based on the results of the study, it was also found that 22 respondents had high intensity of the use of smartphones (↑) and a high level of need for touch (↑). This was evidenced by the highest scores on the Need For Touch Scale (NFTs) questionnaire being for the item statement no. 4 which stated "I like to touch things even though I don't intend to buy them". This shows that most teenagers prefer to buy things online to fulfil their touch needs. Usually, some people will touch the product to simply place it in the shopping basket, while others spend a lot of time exploring the product with their fingers before finally deciding to make a purchase [30]. This is caused by the rapid growth of smartphone sales today, which is almost more than 75% of smartphones equipped with touch screens; touching the screen when using a smartphone can be a source of satisfaction for the needs of touch in someone [21]. Someone who likes to touch a smartphone will tend to be involved in impulsive purchases when shopping online because some people prefer to obtain information through the sense of touch [22]. This is what makes someone prefer shopping online via a smartphone. Finally, smartphone usage intensity is also getting higher.

The strength of this study is the involvement of a larger sample size to generalize the results. The limitation of this study was the use of a cross-sectional approach which limits the ability to explore causation. Online data collection also limits the number of questionnaires with correct and complete responses, because there is no face-to-face interaction between the researcher and respondents.

V. CONCLUSION

The usage intensity for smartphones correlates with social media addiction, FoMO, and need for touch among adolescents. These findings can be used to design a program to promote healthy smartphone usage among adolescents. School should reinforce counselling for students about how to control smartphone and internet usage. Parents should pay attention and do time management with their adolescents, to reduce the negative effects of smartphone usage on adolescents.

CONFLICT OF INTEREST

The authors reported no potential conflict of interest.

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