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Article

Correlation Between Instagram use Intensity With Mental Disorder On Medical Students of Pattimura University

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Abstracts

Introductions: Instagram is one of the most used social media platforms, besides Facebook and Twitter, that have been used by 1 in 4 people worldwide. Social media can affect factors that establish mental health through Interpersonal, Social, and Existential models, which can lead to mental disorders. Various research indicates that there are some correlations between the uses of social media that affects mental health. It had been found that Instagram has the most negative impact on mental health compared to other platforms. **Aims:** To describe the correlation between Instagram use intensity with mental disorders among medical students of Pattimura University. **Methods:** This is an analytical study with a cross-sectional design. The collected samples were 317 students using total sampling on Faculty of Medicine Pattimura University from the entry year 2015 until 2018. Mental disorder symptoms are measured by Self-Reporting Questionare-29 (SRQ-29) and Instagram use intensity by a previously validated questionnaire. **Results:** The correlation of Instagram use intensity with depression or anxiety among medical students of Pattimura University using Pearson Chi-Square shows a value = 5,117 and p = 0,024 with a 0,050 significance value. **Conclusions:** There is a correlation between Instagram use intensity with depression or anxiety among medical students of Pattimura University.

Introductions

Social media is a smartphone social media application that allows users to create and share content or engage in social networks [1]. Social media can be helpful in various aspects of needs such as aspects of entertainment, education, health, self-expression, communication, and others [2]. Social media has changed the way we communicate and has connected people with friends, family, and strangers from worlds so far away. Various social media platforms such as Facebook, Twitter, and Instagram have been used by one in four people in the world [3]. The results of research by the Royal Society of Public Health show that Instagram is the platform with the most negative impact compared to the various platforms that are most often used such as Youtube, Twitter, Facebook, and Snapchat [4]. Instagram is a photo-sharing application and graphic information that allows users to take photos or pictures, apply digital filters, and share them on their social networks [5]. Communication between Instagram users themselves can be established by providing likes and comments on photos that have been uploaded by other users. Followers are also one of the important things, where the number of likes from followers greatly affects whether the photo can become popular or not [6]. There has been a change in the way of communicating that allows innovation, creativity, and more advanced learning to occur, potentially impacting the mental health of young people. Social media that are supposed to help young people connect and communicate with others can also cause mental health problems. The influence of Instagram with its various features and systems certainly affects the young's social interaction which ultimately affects their mental and psychological health [7]. Social media addiction is estimated to affect around 5% of young people aged 18-24 years old, with its addiction which is higher than smoking or alcohol addiction [8–12]. In Indonesia, depression for ages 15 years and over is 6.1% with only 9% undergoing medical treatment [13].

Mental health is a healthy emotional, psychological, and sociological condition that can be seen from satisfying interpersonal relationships, effective behavior and coping, positive self-concept, and emotional stability. Mental health has many components and is influenced by various factors. The existence of disturbances in the psychological aspects of a person makes a person's mental health disturbed [14–16]. Various research results show a relationship between the use of social media affects mental health, such as symptoms of depression and anxiety [17–19]. Adolescence and early adulthood are potentially critical periods and vulnerable to social and emotional development, which means understanding the effects of social media on mental health at this stage is interesting. Therefore, this study was conducted to see whether there is a relationship between Instagram use intensity and mental health in young people, especially medical students of Pattimura University in Ambon so that the results can be identified and followed up for further action. Social media can and should be used as a tool for good, but the challenge is to make social media a safe place, and for young people to be equipped with the relevant skills so they can be directed and know where to look for help if needed.

Methods

This is an analytical study with a cross-sectional design conducted at the Faculty of Medicine, Pattimura University Ambon in June 2019. The population of this study was all medical students of Pattimura University with entry years of 2015 until 2018. Sampling was carried out using total sampling with inclusion criteria such as active and registered medical students and using Instagram accounts in the last 2 months. Exclusion criteria were those who

are not willing to participate. The measuring instrument for symptoms of mental disorders is the Self-Reporting Questionnaire-29 (SRQ-29) from the General Directory of Health Services of the Republic of Indonesia which can examine 4 mental disorders (depression or anxiety, use of psychoactive substances, psychotics, and post-traumatic stress disorder/PTSD). The Instagram use intensity was measured using a questionnaire with validity test results of 0.093-0.750 and reliability test results of 0.820 which met the requirements of Cronbach alpha > 0.60.[19] Univariate analysis method on each variable was carried out then bivariate analysis to see the relationship between those variables. Confidence interval (α=0.05) and hypothesis testing using Chi-Square correlation test.

Results

Data were collected on 317 students according to the inclusion criteria. A total of 84 students were excluded, of which 4 students did not use Instagram accounts in the last two months, and the others did not agree to participate. The results obtained showed as many as 271 (85.48%) of 317 students had a high intensity of Instagram use and 46 (14.52%) students had a low intensity. The average Likert scale score on 14 statement items with 4 scales from all subjects is 34.44.

The results regarding mental disorders showed that 201 (63.4%) of 317 students experienced symptoms of mental disorders. A total of 116 (36.59%) students experienced depression or anxiety, 101 (31.86%) experienced psychotic symptoms, and 160 (63.4%) students experienced PTSD symptoms. The description of a single disorder obtained a total of 77 (24.29%) students, of which 16 (20.77%) students experienced depression or anxiety, 2 (2.59%) psychoactive substance use, 12 psychotic disorders (15.58%) students, and 47 (61.03%) were PTSD.

Within the students with high intensity of Instagram use (271 students), it is shown a few percentages based on each psychiatric problem based on SRQ-29, which are: (1) Depression or anxiety in students with high intensity of Instagram use is 106 (39,11%) cases; (2) Psychoactive substance use on students with high intensity of Instagram use is 2 (0,73%) cases; (3) Psychotic symptoms on students with high intensity of Instagram use is 90 (33,21%) cases; and (4) PTSD symptoms on students with high intensity of Instagram use is 138 (50,92%) cases.

From the results of the Chi-Square test analysis to determine the relationship between Instagram use intensity with depression or anxiety, the Chi-Square value was calculated = 5.117 (> 3.841) and p = 0.024 (< 0.050), which means that there is a significant relationship between the Instagram use intensity with depression or anxiety in medical students of Pattimura University.

Table 1. Instagram use intensity with depression or anxiety

| Instagram use intensity | | Depression or anxiety | | Total |
		Not experienced	Experienced	
Low	Numbers	36	10	46
	Percentage	11,4%	3,2%	14,5%
High	Numbers	165	106	271
	Percentage	52,1%	33,4%	85,5%
Total	Numbers	201	116	317
	Percentage	63,4%	36,6%	100%

The results of the Chi-Square test analysis to determine the relationship between Instagram use intensity with symptoms of psychoactive substance use disorders, the Chi-Square value = 0.342 (< 3.841) and p-value = 0.559 (> 0.050), it can be concluded that there is no relationship between Instagram use intensity with symptoms of psychoactive substance use disorders in medical students of Pattimura University.

Table 2. Instagram use intensity with symptoms of psychoactive substance use

| Instagram use intensity | | Psychoactive Substance Use | | Total |
		Not experienced	Experienced	
Low	Numbers	46	0	46
	Percentage	14,5%	0%	14,5%
High	Numbers	269	2	271
	Percentage	84,9%	0,6%	85,5%
Total	Numbers	315	2	317
	Percentage	99,4%	0,6%	100%

The results of the Chi-Square test analysis to determine the relationship between Instagram use intensity with psychotic symptoms obtained Chi-Square value = 1.566 (< 3.841) and p-value = 0.211 (> 0.050), it can be concluded that there is no relationship between Instagram use intensity with psychotic symptoms in medical students of Pattimura University.

Table 3. Instagram use intensity with psychotic symptoms

Instagram use intensity		Psychotic symptoms		Total
		Not experienced	Experienced	
Low	Numbers	35	11	46
	Percentage	11%	3,5%	14,5%
High	Numbers	181	90	271
	Percentage	57,1%	28,4%	85,5%
Total	Numbers	216	101	317
	Percentage	68,1%	31,9%	100%

The results of the Chi-Square test analysis to determine the relationship between Instagram use intensity with PTSD symptoms obtained a Chi-Square value = 0.151 (< 3.841) and a p-value = 0.698 (> 0.050), it can be concluded that there is no relationship between Instagram use intensity with PTSD symptoms in medical students of Pattimura University.

Table 4. Instagram use intensity with PTSD

Instagram use intensity		PTSD		Total
		Not experienced	Experienced	
Low	Numbers	24	22	46
	Percentage	7,6%	6,9%	14,5%
High	Numbers	133	138	271
	Percentage	42%	43,5%	85,5%
Total	Numbers	157	160	317
	Percentage	49,5%	50,5%	100%

Discussions

In this study, the results showed that 271 (85.48%) of 317 students had a high-intensity of Instagram use, and 46 (14.52%) students had a low-intensity of Instagram use. This is following data from the Pew Research Center and a national survey in the United Kingdom in 2016 which showed the most active use of Instagram in late adolescence to early adulthood, [10,11] and the population used in this study can represent the population of that age. By the theory of aspects that shape intensity and its relation to social media, [19] high intensity indicates that medical students of Pattimura University have special attention when accessing Instagram, that they can enjoy activities when accessing. Individuals also have the effort to understand, enjoy, appreciate and store the information and experiences obtained from Instagram which can make individuals like to imitate, practice, and even be influenced by information from Instagram in real life. The high intensity of use can describe the average length of time interval used to access Instagram more than 3 hours per day with a frequency of more than 4 times per day [19,20].

The results of this study showed that 201 (63.4%) of 317 students experienced symptoms of mental disorders that were interpreted cumulatively, which were said to have symptoms of mental disorders if one or more of the SRQ-29 interpretation showed positive results (including symptoms of depression or anxiety disorders, use of psychoactive substances, psychotic symptoms, and PTSD). Symptoms of the disorder that most experienced were PTSD in a total of 160 students and symptoms of depression or anxiety disorders in as many as 116 (36.59%) students. A total of 39.11% of students experienced more than one of the mental disorders which was a combination of several disorders according to the interpretation of the measuring instrument. These results illustrate that more than half of medical students of Pattimura University who fall into the inclusion criteria experience various symptoms such as difficulty understanding one's feelings, excessive anxiety and worry, sometimes even being unrealistic about various daily life events or showing a loss of energy and interest, feeling guilt, difficulty concentrating, have a loss of appetite, and have thoughts of death or suicide. This condition occurs as a result of the interaction of biopsychosocial factors, including genetic susceptibility that reacts to certain conditions, stress, or trauma that causes the perceived symptoms [9,13,14,17].

The results of the analysis are based on depression or anxiety disorders, use of psychoactive substances, psychotic, and PTSD, the results of the analysis show a significant relationship with Instagram use intensity in medical students of Pattimura University of depression anxiety disorders. This can also be interpreted that the higher the intensity of the use of social media Instagram, the incidence of depression or anxiety among medical students of Pattimura University is increasing, and vice versa. This is to the theory of mental health concepts and principles that the use of Instagram social media can affect mental health factors through Interpersonal, Social, and Existential models, which can lead to mental health disorders, which from this study lead to depression or anxiety [21]. The more followers, the more likes, and the more popular an upload can provide satisfaction for those who get it, and of course, this will affect those who don't get it. Supported by the results of this study show that the higher intensity of use can also be a factor that greatly affects the impact of the use of Instagram. The relationship between the Instagram use intensity and depression or anxiety disorders in the results of this study is by the results of previous studies which showed that the use of social media, one of which was Instagram, also had a relationship with symptoms of depression and anxiety [17,18,22,23].

Another research shows that other social media applications, such as Twitter, affect mental disorders. Tweets from Twitter affect their users with make them take their daily medication to have an ideal body image, which is by standards from another user, and the contents expressed fewer positive emotions and more negative emotions [24]. On Facebook, it has been found that more than half their sample Facebook users chose to represent depression symptom displays on Facebook as adolescents than young adults [25]. But the other research indicates that passive Facebook users with

Bipolar Disease during the COVID-19 pandemic show depressive symptoms were negatively associated with both social support and life satisfaction and positively associated with loneliness [26]. As additional information, a new deep learning model with natural language processing methods has been made to identify the users with potential mental illness based on their posts on Reddit. The model evaluation used is XGBoost and Convolutional Neural Network with accuracy ranging from 75,13% to 96,96% [27].

At the high intensity of Instagram use, there were also 165 (52.1%) students who did not experience symptoms of depression or anxiety. This can be caused by various factors, such as good coping mechanisms, a personality that can adapt positively, as well as positive interactions in the use of Instagram among these individuals [19]. Results from other research show that students demonstrated positive knowledge and attitude towards mental health disorders, it is just they have a negative perception of approaching other individuals with a mental disorder that makes the person with a mental disorder got encouraging by doubt and fear [28]. In another context, there is research about generation Alpha (young people were born at the same time as the iPad and Instagram were launched in 2010, and have been exposed to screens since their early childhood) spend more time screen on social media but had no higher risk of mental disorders, except for those who already at risk of self-harm [29]. Use of psychoactive substances, psychotic symptoms, and PTSD) maybe due to the presence of several factors causing these disorders which were not assessed in this study. Factors that cause mental disorders are seen in three categories, namely somatic factors, psychological factors, and socio-cultural factors [30].

This study has limitations, where the measuring instrument used can only detect some general psychiatric disorders (depres-

sion or anxiety, use of psychoactive substances, psychotic symptoms, and PTSD) based on symptoms experienced in the last month. In addition, the measurement tools and research design have not been able to properly explain the causal relationship between Instagram use intensity and mental disorders, which may also be influenced by behavior and the quality of interactions that occur on Instagram.

Conclusions

A total of 271 (85.48%) medical students of Pattimura University from the entry year of 2015-2018 who use Instagram social media have a high intensity of use, and a total of 201 (63.4%) students experienced symptoms of mental disorders based on the results of measurements with the Self-Reporting Questionnaire-29 (SRQ-29). The results of the analysis in this study indicate a relationship between Instagram use intensity with symptoms of mental disorders in medical students of Pattimura University, which are symptoms of depression or anxiety disorders. Because this study has not investigated the causal relationship, it is hoped that further research will be conducted on the relationship between social media use and psychology which is not only on intensity but also on behavior and interactions in social media that can affect mental health.

Acknowledgments

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