

# Description of Anxiety Level of Medical Faculty about Online Learning Systems

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## ABSTRACT

The emergence of the Covid-19 pandemic, namely a respiratory tract disease caused by the SARS-CoV-2 virus (Severe Acute Respiratory Syndrome Corona Virus 2) in Indonesia, resulted in many changes, one of which was a change in the education sector by holding online learning activities. This online learning activity can cause anxiety in students. The purpose of this study was to describe the level of anxiety of Indonesian Christian University medical faculty students class of 2018 about the online learning system. The method used is descriptive quantitative with the cross-sectional approach. Data was collected using the HARS questionnaire (The Hamilton Anxiety Rating Scale). This study found that 38.3% of Medical Faculty students in a class in 2018 experienced anxiety with various levels of anxiety, namely mild anxiety at 17.5%, moderate anxiety at 9.1%, severe anxiety at 8.4%, and severe anxiety once by 3.2%. This anxiety is influenced by several factors, namely gender, age, and environmental conditions of the student.

**Keywords:** anxiety level, online learning, student anxiety

## INTRODUCTION

Anxiety is an emotional condition characterized by a feeling of tension and worry accompanied by several symptoms of physical changes. Anxiety is a symbol of warning against impending danger so that individuals can take steps to deal with conflicting, unknown, and unclear threats [1; 2]. Anxiety disorders are common in psychiatric clinics. Anxiety disorders are often influenced by several factors, namely the interaction of biopsychosocial factors, one of which is genetic susceptibility which interacts with certain conditions such as trauma or stress to cause clinical symptoms. Excessive and unreasonable worry and anxiety about everyday events for most of the day for six months is Generalized Anxiety Disorder (GAD) and has few somatic symptoms [3]. There are several aspects of anxiety, namely: (1) Behavior, which can be in the form of

hyperventilation, anxiety, physical tension, feeling alert, tremors, avoidance, surprise, increased speed of speech, running away from problems, withdrawing from interpersonal relationships, and tend to be affected injury. (2) Cognitive can be in the form of worsening concentration, misjudgment, distracted attention, forgetfulness, decreased creativity, fear of visual images, confusion, fear of injury or death, obstructed thinking, fear of losing control, decreased perception, very alert, confusion, awareness self, and nightmares [3]. Affective, such as shyness, impatience, irritability, guilt, tension, anxiety, alertness, fear, numbness, nervousness, and worry [4]. According to the American Psychological Association, sweating, shaking, dizziness, or increased heart rate changes are symptoms of physical changes that occur with anxiety disorders.

The American College Health Association conducted a survey and showed that students experienced stress and anxiety by 31.9% and 25.9%. Based on research from the literature reviewed by Clinton Walean et al., anxiety can occur in college students during the COVID-19 pandemic [5]. According to WHO, the common mental disorders with the highest prevalence are depression and anxiety. 3.6% of the population, i.e., around 200 million people worldwide, suffer from anxiety. According to the 2018 Basic Health Research (Riskesdas), the prevalence of mental health problems, namely depression, and anxiety, increased to 9.8% from 6% in 2013 [6; 7].

In December 2019, the world was shocked by the emergence of a pneumonia outbreak first discovered in the city of Wuhan, Hubei Province of China. This disease is Covid-19 (Corona Virus Disease 2019) and is caused by the SARS-CoV-2 virus (Severe Acute Respiratory Syndrome Corona Virus 2). [8] On March 2, 2020, the first case of COVID-19 was reported in Indonesia, with a total of two cases. Following Circular Letter Number 36962/MPK.A/HK/2020, which contains an appeal in the education sector that all learning and teaching activities in schools and tertiary institutions carry out online methods (in networks) to prevent the spread of COVID-19 [9; 10].

Online learning is the use of the internet in learning with connectivity, flexibility, ability in the teaching process, and accessibility. In online learning, device facilities such as smartphones, computers, tablets, and laptops are needed that can be used to carry out online learning and access information in various conditions and places [11]. The impact of the online learning system is the emergence of anxiety in students, which can affect student achievement. Students experience anxiety because they have to adjust lectures using applications that have never been used before. In addition, online lectures are becoming more tedious than before, and worry about the GPA to get [12].

The large number of students worried about the online learning system makes researchers want to know the description of the level of anxiety of Indonesian Christian University medical students class of 2018 towards the online learning system. The problem in this research is "What is the description of the level of anxiety in students of the medical faculty of the Indonesian Christian University class of 2018 regarding the online learning system? The aim of the research is to describe the anxiety level in Medical Faculty students' class 2018 in dealing with the online learning system.

## LITERATURE REVIEW

Anxiety disorders differ from normal anxiety in that they develop into excessive anxiety. Anxiety disorders are often stress-induced and last for six months or more [13]. Anxiety disorder is a state of tension that is unnatural or not in the right situation and place. This disorder has symptoms of fear and feelings of worry that are uncertain. Anxiety is taken from the Latin word *angere*, which means to choke or choke. The anxiety response is not always related to the real threat, but it can make a person unable to act or withdraw. Anxiety is a feeling that arises in an unpleasant situation, causing worry and anxiety [14; 15].

Someone who has an anxiety disorder experiences excessive things such as panic and fear of things or situations for no reason, takes repeated actions, and experiences worry so that it can interfere with one's activities and social life [16]. Anxiety disorders are the most common mental disorder and affect at some point in the lives of many adults. Anxiety disorders are treatable, and many effective treatments are available that can help people lead normal, productive lives [17]. According to WHO, the common mental disorders with the highest prevalence are depression and anxiety. 3.6% of the population, i.e., more than 200 million worldwide, suffer from anxiety [18]. According to the 2018 Basic Health Research (Riskesdas), the prevalence

of mental health problems, namely depression, and anxiety, increased to 9.8% from 6% in 2013 [19].

Anxiety disorders are psychological disorders that are often found. Based on the results of the report from the National Comorbidity Study that one out of four people meets the criteria of having at least one anxiety disorder with a 12-month prevalence rate of 17.7%. Women tend to experience anxiety disorders with a lifetime prevalence of 30.5% compared to men, with a prevalence of 19.2%. Specific phobia is the most common anxiety disorder, with a prevalence of 10.3%. The next disorder is panic disorder (with or without agoraphobia), with a prevalence of 6.0%; social phobia, with a prevalence of 2.7%. And generalized anxiety disorder with a prevalence of 2.2% [20; 21]. Several sciences contribute to discussing the causes of anxiety disorders, namely psychological science (psychoanalytic theory, cognitive behavioral theory, and existential theory) and biological sciences (autonomic nervous system, neurotransmitters, brain imaging studies, genetic studies, and neuroanatomical considerations) [20; 21;22; 23].

Several factors influence the occurrence of anxiety, namely age, gender, environment, educational level, and economic status [24; 25; 26]. Gamma-aminobutyric acid, serotonin, dopamine, and norepinephrine are significant mediators of anxiety in the central nervous system. The autonomic nervous system, especially the sympathetic nervous system, plays an important role in most symptoms. The amygdala plays an important role in regulating fear and anxiety. In patients with anxiety disorders, there is an increased response in the amygdala and abnormalities in prefrontal limbic activation. Structures of the amygdala and limbic systems are connected to areas of the prefrontal cortex [27]. Anxiety disorders are associated with neurochemicals such as serotonin, Gamma-Aminobutyric Acid, dopamine, and norepinephrine, which have different

roles in regulating anxiety. Dysregulation of the noradrenergic system indicates the occurrence of anxiety disorders; the autonomic nervous system in sufferers will overreact to stimulation due to hypersensitivity resulting in the locus caeruleus being activated by glucocorticoids and norepinephrine (NE) will be released so that the sympathetic and parasympathetic nerves will be stimulated. Gamma-Aminobutyric Acid levels and Gamma-Aminobutyric Acid  $\alpha$ -benzodiazepine receptor binding are disrupted in the brain and spinal cord, especially in the brain regions that are thought to be involved in anxiety, namely the PFC, amygdala, and hippocampus [28].

Anxiety disorders are identified into four anxiety levels: mild anxiety, moderate anxiety, severe anxiety, and panic. According to the DSM-5, the main anxiety disorders include specific phobia, panic disorder, agoraphobia, social anxiety disorder, and generalized anxiety disorder. Symptoms and characteristics of anxiety disorders are divided into three aspects: physical response, behavioral response, and cognitive response [29].

The severity of anxiety can be measured using the Hamilton Rate Scale for Anxiety (HARS) questionnaire rating scale based on the symptoms felt. This questionnaire is standardized and accepted internationally. This questionnaire contains 14 questions in the form of anxiety symptoms, and each is given a number 0-4, ranging from no symptoms at all to very severe symptoms [30].

The learning process is a learning and teaching process that requires a plan and materials that support the learning process. Online learning is a learning system from a distance and does not meet directly using a platform that supports the learning process. It is done so that the learning process is of higher quality and can reach the learning interests of the participants through a large and open network. There are several characteristics of students learning online systems, namely a strong or high spirit of

independent learning, higher literacy towards technology, interpersonal communication skills that must be trained, understanding and using interaction and collaborative learning in the surrounding environment or with various systems support online learning. Online system learning requires cellphones, computers, tablets, or computers. And an adequate internet network is needed to carry out online learning. Another thing that influences is parents' support, help, and understanding.

Some of the advantages of the online learning system are a more flexible place and time for learning, such as studying in a room, or living room at an adjusted time, can overcome problems with distance, reduced transportation costs, building a new learning atmosphere, students are more comfortable asking questions and expressing opinions. They can bring out the responsibility and autonomy of students in learning. While some of the disadvantages of this learning are the many assignments given by the teacher, increased costs to buy internet quota, the use of gadgets that are too frequent so that they tend to have social problems, difficulty understanding and focusing on material, network limitations, and economic limitations. So it is difficult to get facilities, reducing the level of student concentration and dependency on the network or Wi-Fi in attending lessons. This condition can trigger anxiety in students [31; 32; 33].

The online learning system has both positive and negative impacts on students undergoing an online learning system. Online learning is new for many students, so it can influence the psychological factors of students as well as student achievement and motivation. The impact of this learning system is anxiety in students and can result in a decrease in student achievement. Students feel anxious about applications that have never been used before, more assignments, and worry about their GPA. In addition, students who are too often at home lose their usual routines and reduce physical

and social contact, which results in boredom, frustration, feelings of isolation, boredom, lots of assignments, and increased pressure, which will impact student anxiety [33; 34].

## **RESEARCH METHOD**

The method used in this research uses descriptive quantitative with a cross-sectional approach which aims to examine the description of the anxiety level of Indonesian Christian University medical students class of 2018 towards online learning systems. The research was conducted from November 2021 - December 2021. The research was carried out in the home environment of each respondent. The target population in this study were Medical Faculty students, class of 2018. The sample of this study was Medical Faculty students class of 2018 who met the inclusion criteria (active students or students of the Indonesian Christian University Medical Faculty class of 2018, participating in online lecture activities, physically and mentally healthy, and willing to be research respondents) with a total sample of 114. Data collection was carried out using a questionnaire and measuring anxiety levels. The research instrument was the HRS-A (Hamilton Rating Scale for Anxiety) questionnaire, which contained 14 questions about anxiety symptoms. The data collected in this study is primary data, which can be obtained from measuring the anxiety level of students or students of the Faculty of Medicine at the Indonesian Christian University. The data obtained from the data collection process will be processed using the SPSS program. The data processing process consists of several steps: editing, coding, data entry, cleaning, and analyzing.

**RESULT AND DISCUSSION**

**Table 1. Table of Frequency Distribution of Medical Faculty Student Respondents Class of 2018 by Age**

Age	Frequency (n)	Percentage (%)
18	1	0,6
19	3	1,9
20	26	16,9
21	95	61,7
22	27	17,5
23	2	1,3
Total	154	100,0

Table 1 contains data on the age frequency distribution of Medical Faculty student respondents class of 2018 which shows that all respondents consisted of 6 ages, namely one respondent aged 18 years (0.6%), three respondents aged 19 years (1.9%), 26 respondents aged 20 years (16.9%), 95 respondents aged 21 years (61.7%), 27 respondents aged 22 years (17.5%), and two respondents aged 23 years (1.3%).

**Table 2. Table of Frequency Distribution of Medical Faculty Student Respondents Class of 2018 by Gender**

Gender	Frequency (n)	Percentage (%)
Male	44	28,6
Female	110	71,4
Total	154	100,0

Table 2 contains data on the sex frequency distribution of Medical Faculty student respondents class of 2018 which shows that out of 154 respondents, there were 44 male respondents (28.6%) and 110 female respondents (71.4%).

**Table 3. Table of Frequency Distribution of Medical Faculty Student Respondents Class of 2018 Based on Environmental Conditions**

Environmental Conditions	Frequency (n)	Percentage (%)
Living with family (parents and family)	87	56,5
Living alone (lodging, apartment, rented alone)	67	43,5
Total	154	100,0

Table 3 contains data on the frequency distribution of environmental conditions from Medical Faculty student respondents class of 2018 which shows that out of 154 respondents, 87 respondents were living with family (56.5%), and 67 respondents were living alone (43.5%).

**Table 4. Table of Frequency Distribution of Anxiety Levels of Respondents of Medical Faculty Students Class of 2018**

Anxiety Level	Frequency (n)	Percentage (%)
Very Severe Anxiety	5	3,2
Severe Anxiety	13	8,4
Moderate Anxiety	14	9,1
Mild Anxiety	27	17,5
No Anxiety	95	61,7
Total	154	100,0

Table 4 contains data on the frequency distribution of the anxiety level of Medical Faculty student respondents class of 2018 which shows that 95 respondents did not experience anxiety (61.7%), 27 respondents experienced mild anxiety (17.5%), 14 respondents experienced moderate anxiety (9.1%), 13 respondents experienced severe anxiety (8.4%), and five respondents experienced very severe anxiety (3.2%).

**Table 5. Table of Frequency Distribution of Anxiety Levels of Respondents of Medical Faculty Class of 2018 Based on Age**

Age	Anxiety Level										Total	
	No anxiety		Mild		Moderate		Severe		Very Severe			
	n	%	n	%	n	%	n	%	n	%	n	%
18	0	0	0	0	1	0,6	0	0	0	0	1	0,6
19	1	0,6	2	1,3	0	0	0	0,0	0	0,0	3	1,9
20	19	12,3	3	1,9	1	0,6	2	1,3	1	0,6	26	16,9
21	57	37	17	11	10	6,5	7	4,5	4	2,6	95	61,7
22	17	11	4	2,6	2	1,3	4	2,6	0	0	27	17,5
23	1	0,6	1	0,6	0	0	0	0	0	0	2	1,3

Table 5 contains data on the frequency distribution of the anxiety level of Medical Faculty student respondents class of 2018 based on age which shows that in respondents aged 18, one respondent was experiencing moderate anxiety (0.6%), aged 19, there was one respondent not experiencing anxiety (0.6%). Two

respondents experienced mild anxiety (1.3%). At the age of 20 years, 19 respondents did not experience anxiety (12.3%), three respondents experienced mild anxiety (1.9%), one respondent experienced moderate anxiety (0.6%), two respondents experienced severe anxiety (1.3%), and one respondent experienced very

severe anxiety (0.6%). At the age of 21 years, 57 respondents did not experience anxiety (37%), 17 respondents experienced mild anxiety (11%), ten respondents experienced moderate anxiety (6.5%), seven respondents experienced severe anxiety (4.5%), and four respondents experienced very severe anxiety (2.6%). At the age of 22 years, 17 respondents did not experience anxiety (11%), four respondents experienced mild anxiety (2.6%), two respondents experienced moderate anxiety (1.3%), and four respondents experienced severe anxiety (2.6%). At the age of 23 years, one respondent did not experience anxiety (0.6%), and one respondent experienced mild anxiety (0.6%). From the research results, it was found that 3 out of 4 adolescent respondents (75%)

experienced anxiety, while 56 out of 150 adult respondents (37.3%) experienced anxiety. Research conducted at the RSGM FKG University of Jember states that the respondent's age influences the level of anxiety. It happens because there are differences in the thought process of each individual, and it affects the maturity of one's mindset. Adult individuals have coping mechanisms that are better used than the age group of children and adolescents, so the level of anxiety in adult individuals is lower than that of adolescents. [35] However, in this case, the respondents had a close age ratio, namely 18-23 years, so this research was in line with Demak's research in that this caused the age of the respondents not to be associated with anxiety levels. [36]

**Table 6. Table of Frequency Distribution of Anxiety Levels of Respondents of Medical Faculty Class of 2018 Students by Gender**

Gender	Anxiety Level										Total	
	No anxiety		Mild		Moderate		Severe		Very Severe		n	%
	n	%	n	%	n	%	n	%	n	%		
Male	29	65,9	5	11,4	7	15,9	2	4,5	1	2,3	44	100
Female	66	60	22	20	7	6,4	11	10	4	3,6	110	100

Table 6 contains data on the frequency distribution of anxiety levels for Medical Faculty class 2018 student respondents based on gender. It shows that in male respondents, 29 respondents did not experience anxiety (65.9%), five respondents experienced mild anxiety (11.4%), seven respondents experienced moderate anxiety (15.9%), two respondents experienced severe anxiety (4.5%), and one respondent experienced very severe anxiety (2.3%). Whereas in female respondents, 66 respondents did not experience anxiety (60%), 22 respondents experienced mild anxiety (20%), seven respondents experienced moderate anxiety (6.4%), 11 respondents experienced severe anxiety (10%), and four respondents experienced very severe anxiety (3.6%). The research results found that 15 out of 44 male respondents (34.1%) experienced anxiety, while 44 out of 110 female respondents (40%) experienced anxiety. So

it was found that female respondents experienced anxiety more than male respondents. Following the Association of America, it is said that women are twice as likely to experience anxiety as men. There are differences between men and women in forming fear memories and dealing with these fear memories. There are differences in chemical content in the brain, so there are differences in the brain systems of women and men. In the female brain, estrogen and progesterone hormones make the brain system involved in the flight-or-fight response more easily activated and last longer than in males. In addition, serotonin, which contributes to stress and anxiety, is processed more slowly in women's brains, so women are more prone to experiencing anxiety. On the molecular side, cell-to-cell communication and protein transfer play a role in differences in susceptibility to stress in each individual based on sex. 37; 38]

**Table 7. Table of Frequency Distribution of Anxiety Levels of Respondents of Medical Faculty Class of 2018 Based on Environmental Conditions**

Environmental Conditions	Anxiety Level										Total	
	No anxiety		Mild		Moderate		Severe		Very Severe		n	%
	n	%	n	%	n	%	n	%	n	%	n	%
Live with family	49	56,3	17	19,5	9	10,3	8	9,2	4	4,6	87	100
Live alone	46	68,7	10	14,9	5	7,5	5	7,5	1	1,5	67	100

Table 7 contains data on the frequency distribution of anxiety levels for Medical Faculty class 2018 student respondents based on environmental conditions, which show that 49 respondents who live with their families do not experience anxiety (56.3%), 17 respondents experience mild anxiety (19.5 %), nine respondents experienced moderate anxiety (10.3%), eight respondents experienced severe anxiety (9.2%), and four respondents experienced very severe anxiety (4.6%). Meanwhile, for respondents who lived alone, 46 respondents did not experience anxiety (68.7%), ten respondents experienced mild anxiety (14.9%), five respondents experienced moderate anxiety (7.5%), five respondents experienced severe anxiety (7.5%), and one respondent experienced very severe anxiety (1.5%).

The research results found that 38 out of 87 respondents who lived with their families (43.7%) experienced anxiety, while 21 out of 67 respondents who lived alone (31.3%) experienced anxiety. It is in line with research conducted by Hafnidar that respondents who live with their families have a higher level of anxiety than respondents who live alone. Student anxiety is caused by parents who demand to be good individuals, so these demands are considered a threat, causing anxiety [39]. Family socioeconomic, environmental conditions, friendships, and family dysfunction are external factors that relate to stress, anxiety, and conditions such as life satisfaction and happiness. Family disharmony and conflict between children and parents are stressors for these individuals. Unpleasant experiences that occur in the family can cause depression and low self-concept. Meanwhile, family support greatly increases individual self-esteem, thinks optimistically, and can

reduce stress and anxiety [40]. In addition, during the Covid-19 (Corona Virus Disease 2019) pandemic caused by the SARS-CoV-2 virus (Severe Acute Respiratory Syndrome Corona Virus 2) like this, students were worried that they could bring Covid-19 disease to their families who were aged susceptible to contracting the virus [41].

During data collection, researchers experienced several obstacles, namely the condition of the Covid-19 pandemic, which made it difficult for researchers to collect data through direct interviews with respondents. So the researchers collected data through Google Forms and obstacles in finding writing references in the library due to the limited time provided by the library.

## CONCLUSION

Based on the results and discussion of the research, it was concluded that as many as 38.3% of Medical Faculty students class of 2018 experienced anxiety with various levels of anxiety, namely mild anxiety at 17.5%, moderate anxiety at 9.1%, severe anxiety of 8.4 % and severe anxiety at 3.2%. This anxiety is influenced by several factors, namely age, gender, and the student's environment. Based on age, 75% of teenage students and 37.3% of adult students experience anxiety. Based on gender, 34.1% of male and 40% of female students experienced anxiety. Meanwhile, based on environmental conditions, as many as 43.7% of students who live with their families and 31.3% of students who live alone experience anxiety. Thus, students are expected to understand and understand more about how to study, how to deal with emotions, and more about Covid-19 so that excessive anxiety during this pandemic can be reduced and even avoided.

### Declaration by Authors

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37. Craske MG, Stein MB, Eley TC, Milad MR, Andrew Holmes<sup>7</sup>, Ronald M. Rapee<sup>8</sup> and Hans-Ulrich Wittchen<sup>9</sup> Abstract| Anxiety disorders constitute the largest group of mental disorders in most western societies and are a leading cause of disability. The essential features of anxiety disorders are excessive and enduring fear, anxiety or avoidance of perceived threats, and can also include panic.
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