

SPECIAL ISSUE

## LITERATURE REVIEW: RISK FACTORS AFFECTING COLLEGE STUDENT'S MENTAL DISORDER DURING COVID19 PANDEMIC

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### Abstract

**Introduction:** The pandemic of coronavirus disease 2019 has become a real hazard and affects many sectors, one of them is education. The high number of new cases has made several countries to implement lockdown and quarantine policies. This policy caused several schools and universities to be closed to break the chain of transmission. Besides, the indirect effect of Covid19 is the mental disorder of the society, including students, that is getting worse. Mental disorder has become a growing health problem and requires more attention. This study aimed to explore the risk factors affecting students' mental disorder at the period of the Covid19 pandemic based on the previously performed research from published journals. **Discussion:** Of the 394 literature that has been searched in PubMed and Science Direct, by entering the keywords of coronavirus, mental disorder, education, and universities, it obtained 7 articles in accordance with inclusion criteria. The inclusion criteria in this study included articles published in 2019 and 2020, articles categorized as original research articles, articles written in English, and articles discussed mental disorder in students since the Covid19 pandemic. The results of the study showed that in countries with quite high Covid19 cases, the risk factors affecting students' health were news about new case rates, mortality rates, and Covid19 cure rates. **Conclusion:** Mental disorder disorders experienced by students during the pandemic were anxiety, stress, and depression. For further research, it is expected to provide recommendations for activities that can prevent students' mental disorder to not worse during the pandemic.

## **INTRODUCTION**

Coronavirus disease 2019 (Covid19) is an infectious disease caused by a newly observed coronavirus (1). Coronaviruses are spherical, enveloped, and the largest of positive-strand RNA viruses. They have a wide host range, which includes birds, farm animals, pets, camels, and bats, in which they mostly cause respiratory and gastrointestinal diseases. In humans, they are a cause of mild diseases including the common colds happening in children and adults, and have been believed to be of modest clinical importance. However, two zoonotic coronaviruses which includes the Severe Acute Respiratory Syndrome coronavirus (SARS-CoV) and tract infections. Both the SARS-CoV and MERS-CoV have several capabilities in common which might be factored in generating nosocomial transmission, replication in the lower respiratory tract, and viral immunopathology. Middle East respiratory syndrome coronavirus (MERS-CoV)—can produce severe lower respiratory (2).

The first case of Covid19 in humans existed in December 2019 in Wuhan City of China (3). From the first coronavirus case in Wuhan city, coronavirus cases have increased and spread more rapidly. On March 8, 2020, World Health Organization (WHO) stated that Covid19 was a pandemic. Pandemic is an epidemic that happens throughout the world, or a very big region, across international borders and usually affects large numbers of people (4). Until June 2020, the total Covid19 cases in the world reached 8.9 million with 4.7 million cases declared cured (5). In 2003, there was also a Severe Acute Respiratory Syndrome (SARS) epidemic at Guangdong, China. A total of 8,437 probable cases occurred and 813 of them died due to the SARS epidemic in 2002-2003. The SARS epidemic spread from China as mainland, Hong Kong, Singapore, Canada, the United States, and Vietnam (6). Whereas the MERS (Middle East Respiratory Syndrome) epidemic caused as many as 2,494 confirmed cases with a total of 858 deaths. MERS spread to 27 countries with Saudi Arabia as the center of spread (2).

Several attempts have been made to reduce the curve of Covid19 cases (7) such as lockdown, quarantine, social distancing, physical distancing. Besides the health sector, almost all sectors were affected by efforts to reduce this curve, including the food sector (8), manufacturing, tourism, economy (9), and education (10). Schools and universities so far have mostly used face-to-face methods and interactions between students and teachers. Lockdown and quarantine carried out by several countries to slow the rate of transmission of Covid19, affect teaching and learning activities between

students and teachers (10). Amid the Covid19 pandemic, efforts to advance education must continue and one of the ways is by conducting an online learning.

Every level of education needs to move from traditional learning methods (face to face) to online learning method. This is because the level of transmission of Covid19 through droplets so that when the school has not implemented good discipline, it will lead to new distribution clusters. Covid19 contact patterns differ greatly according to age and school level. Based on Radio Frequency Identification Devices (RFID) technology, children (6 years) in France are reported to have a median of 500 contacts each school day and contacts accumulate for a median of 300 minutes. Whereas for people aged 10-11 years, they have a contact median of 300 contacts a day and 250 minutes of contact per day (11). Besides France, China has also closed all schools and universities to prevent transmission of the Covid19 virus (12).

Since Covid19 pandemic began, there had been no research that discuss about college student's mental disorder at countries with high cases in a literature review research (13). Whereas, Covid19 pandemic affects their study. Before the Covid19 pandemic, mental disorder disorders in students continued to increase and become a concern. A study (14) showed that during the Middle East Respiratory Syndrome Corona Virus (MERS-CoV) outbreak in 2014 in Saudi Arabia, 77% of students showed minimal anxiety, 18.4% experienced mild anxiety, and 4.6% reported experiencing moderate anxiety. This study aimed to explore the risk factors affecting students' mental disorder at the period of the Covid19 pandemic based on the previously performed research from published journals. Literature review had to be done in this research because it can give a summarize empirical or theoretical literature that has been done in the past to give a more comprehensive understanding about the risk factors that affect the state of mental disorder in students amid the Covid19 pandemic.

## **DISCUSSION**

This article is a literature review compiled based on the results of a study on relevant articles according to variables and purposes of writing. Keywords that used in searching articles are coronavirus, mental disorder, education, and universities. Article relevant to the purpose of writing in this article are obtained by searching through PubMed and Science Direct. There are four inclusion criteria such as, articles published in 2019 and 2020, articles that are original research, articles written in English, and articles that discussed about mental disorder in college student since the Covid19 pandemic.

Based on literature search results through the PubMed and Science Direct databases using the keywords coronavirus, mental disorder, education, and universities, researchers found 324 journals that matched the keywords. The article is then screened based on the title and year of publication of the article so the results of the article are 87 articles. We found 35 articles that not relevant with this topic, 15 letter to editor, 3 articles with systematic review study design, and 5 articles with another language (China), so it has to be excluded. After abstracting and discussing articles

that can suitable as samples, seven articles were found to be used as samples. There was no article duplication in selecting samples. This steps of conducting a sample showed in Figure 1. This review literature is synthesized using a narrative method by grouping extracted data similar to the results measured to answer the objectives. Research articles that fit the inclusion criteria are then collected and a journal summary is made covering the researcher's name, research title, population, research methods, research results, and conclusions presented in Table 1.

**Table 1. Study Charateristics**

Author	Title	Population	Method	Result	Conclusion
Yao Zhang, Haoyu Zhang, Xindong Ma, Qian Di	Mental disorder Problems during the Covid19 Pandemics and the Mitigation Effects of Exercise: A Longitudinal Study of College Students in China	66	Longitudinal Study	Research shown that 85% college student reported that they have anxiety towards Covid19 and 20% reported they had at least one mental distress toward Covid19. <i>Covid19 pandemic significantly reduce</i> the quality of sleep, increase the level of stress and anxiety. Doing sports routinely is a great cure for mental disorder and it can directly decrease negative emotion.	During peak phase of Covid19 pandemic in China, one of the effect is it produce negative emotion to adolescent. To solve that, doing physical activity and developing a great sleep pattern is economically effective and mitigation strategy that can be done by people who forced to stay at home.
Wenjun Cao, Ziwei Fang, Guoqiang Hou, Mei Han, Xinrong Xu, Jiaxin Dong, Jianzhong Zheng	The psychological impact of the Covid19 epidemic on college students in China	7,143	Cross sectional study	Research shown that 24.9% college student having anxiety because Covid19 outbreak. This is because epidemic related with college student's residence, source of living, living with parents or acquaintance that infected with Covid19.	The protective factors of college student with anxiety during Covid19 is living in urban area, having a stabil income, and living with parents. But, having acquaintance infected with Covid19 is a risk factor of having an anxiety.
Jeremy F Huckins, Alex W DaSilva, Weichen Wang, Elin Hedlund, Courtney Rogers, Subgiya K Nepal, Jialing Wu, Mikio Obuchi, Eilis I Murphy, Meghan L Meyer, Dylan D Wagner, Paul E Holtzheimer, Andrew T Campbell	Mental disorder and Behavior of College Student During the Early Phases of the Covid19 Pandemic : Longitudinal Smartphone and Ecological Momentary Assessment Study	217	Longitudinal multimodal study	This study shown that along with the increase information about Covid19, college student always stay at home and less going out. They also shown having an increase of anxiety and depression.	This study gives an early insight that in mental disorder and behavior during the first phase of Covid19, depression and anxiety increasing. So does with period to stay at home is much longer when the Covid19 pandemic is happen.
Eiko I. Fried, Faidra Papanikolaou, Sacha Epskamp	Mental disorder and Social Contact During the Covid19 Pandemic: An Ecological Momentary Assessment Study	80	Ecological Momentary Assessment Study	Research shown that there is no increase of mental disorder problem within two weeks study conducted.	Short time dynamics shown that there is a little reduction mental disorder in college student.
Paula Odriozola-Gonzalez, Alvaro Planchuelo-Gomez, Maria Jesus Irurtia, Rodrigo de Luis-Garcia	Psychological effects of the Covid19 outbreak and lockdown among student and workers of a Spanish University	2,530	Cross sectional study	This study show that 34,19% of college student having depression symptoms 21.34% having anxiety symptoms and 28.14% having stress during Covid19 outbreak.	The Covid19 outbreak had affected mental disorder on college student.
Jia Liu, Qing Zhu, Wenliang Fan, Joyman Makamure, Chuansheng Zheng, dan Jing Wang	Online Mental disorder Survey in a Medical College in China During the Covid19 Outbreak	217	Cross sectional study	This studi shown that 35.5% of college student having depression, and 22.1% having anxiety during Covid19 pandemic in China.	College student is a special group that can not be left out during quarantine.
Bella Savitsky, Yifat Findling, Anat Erel, Tova Hendel	Anxiety and coping strategies among nursing students during the Covid19 pandemic	244	Cross sectional study	This study shown that the prevalence of moderate and severe anxiety in college students are 42.8% and 18.1%. Some of the risk factors of anxiety are sex, lack of PPE, family status, and fear of infection that spreading so fast.	The important way to help college student in Covid19 period is having a continuously communication during an online lesson.

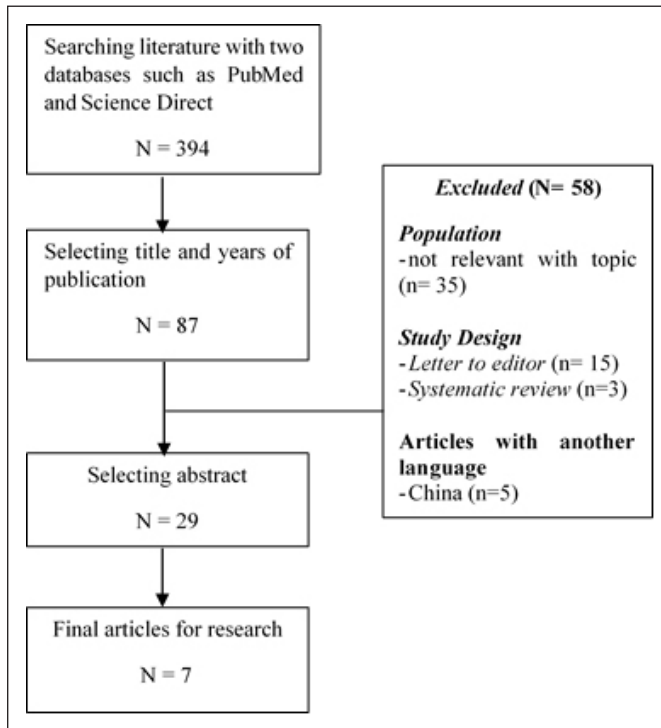


Figure 1. Steps Conducting a Review Journal

Mental disorders contribute 23% to the burden of world mental disorder. The high prevalence of mental disorders has an effect on social and economic burdens, but just 10% that receive professional treatment (15). Around 450 million human being that suffering from mental and behavioral disorders worldwide, it is estimated that one in four people will suffer a mental disorder during their lifetime (16). Anxiety and stress rank as the top two client issues found by clinicians in university counseling centers.

The existence of a Covid19 pandemic has affected almost all sectors of health, employment, education, and the economy. Social distancing, self-isolation, and travel bans affect the reduction of workers in all monetary sectors and result in many jobs being lost (7). The Covid19 pandemic affects the mental condition of infected patients and also those who forced to stayed at home (social distancing). The 7 articles analyzed are several countries that have high Covid19 cases, namely China (17-19) the United States, the Netherlands, pain, and Israel (20-23).

The coronavirus disease 2019 (Covid19) pandemic may be stressful for people. A study in China showed that sub syndrome mental disorder problems are a common reaction to the Covid19 pandemic (24). As a human being, when we face a danger or uncertainty, fear, worry, and stress are the normal reason. Fear and anxiety about a new disease and what could happen can be overwhelming and cause strong emotions in grown-ups and children (25). Added to the fear of contracting the virus in a pandemic such as Covid19 are the significant

changes to our daily lives as our movements are limited in support of efforts to contain and slow down the spread of the infection. Faced with new realities of working from home, temporary unemployment, home-schooling of children, and lack of physical contact with other family members, friends and colleagues, public health actions, such as social distancing, can make human feel remoted and lonely and can extend stress and anxiety (26).

Depression, stress, and anxiety disorders are some of the mental disorder disorders experienced by students due to the Covid19 pandemic. Coverage of Covid19 new case rates, cure rates, and the number of people who died from Covid19, sleep quality, financial conditions, and living with parents are risk factors that cause mental disorder disorders in students. Meanwhile a review study showed a different result that children and adolescents are more likely to experience depression and anxiety during and after the isolation period due to Covid19 (27).

The most factor that influenced the mental disorder condition of college students during the Covid19 pandemic was the news about Covid19 itself, both news about the calculation of new cases, death rates, and the recovery rate of Covid19. A research in Netherlands (21) shows that there were no additions to anxiety symptoms during 2 weeks of research, this is because the news aired illustrates clarity and government actions that have a calming effect and reduce uncertainty (21). Correspondingly, a study in United States shows that mental disorder and related behaviors change together with increased media coverage and closeness to a pandemic (20). Government has to show their action, and live report due to Covid19 through news that aired with good statement in the right way. So that public will know that government really doing their best to fight the Covid19 pandemic. If public trusted the government, it will reduce the stress or anxiety that they might have during self-isolation. On the contrary, if governments showed the news without showing their faith to fight the pandemic, anxiety, stress, and chaos on public will likely happen.

A study also suggested that sleep efficiency when there was news of a case of death from Covid19 was not significantly related to decreased sleep quality, sleep duration, increased sleep disturbance, and morning dysfunction (17). This study is in line with previous research which states that indirect exposure to mass trauma through the media can extend the preliminary charges of signs and symptoms of Post-Traumatic Stress Disorder (PTSD) (28-32). Showing state of public health emergency can bring out public mental disorder problems, this happening when Wenchuan and Lushan

earthquakes, Ebola Outbreak, and SARS occurred. A research in China shows that the high prevalence of mental disorder problems is related to the frequency of social media use during the Covid19 pandemic (32). The difference with the sample in the article is that this research identified social media as a place for complaints by the public due to the pandemic, while other articles focused on the Covid19 case number and efforts from the government to deal with the pandemic.

A study in Netherlands found that there was no increase in global health problems during the 2 week study period (21). It speculates that with a pandemic, students are more trying to build better and more meaningful social contact relationships as when talking to family members and friends (via telephone) more often than usual. Respondents were also found to be more silent at home. That it is possible for someone who experiences social interaction on a large scale tends not to experience stress (33). So far research on social contact and mental disorder tends to have different results. Establishing social interaction online indicates that it can expand social support and self-confidence and decrease social anxiousness and isolation, specifically for adolescents with disabilities (34). This is in line with the research done in Japan stating that students have been undergoing quarantine at home during the Covid19 outbreak, approximately three months. Long isolation time can cause depression and anxiety among students (18).

Family support and satisfaction are factors that influence depression disorders in college students (28). A research conducted in China shows that students who live together with parents have a significant impact on anxiety, compared with students who live alone when a pandemic, they are more at risk for experiencing anxiety (18). This study is in line with a research about depressive symptoms in adults that settling in a parent's home is not related to depressive symptoms (35).

A study done in China also shows that there is a relationship between financial conditions and living in urban areas with mental disorder that form anxiety (18). This is because respondents living in urban areas have better security and sanitation than in rural areas. Anxiety disorders are often experienced by students due to several factors such as difficulties in learning activities, financial, peer support and family support (31). The economic concern is also a significant factor influencing anxiety in students during the Covid19 pandemic. The cause of the high prevalence of anxiety is the extraordinary circumstances and living conditions during the ongoing Covid19 pandemic (23). These conditions include social isolation, an unstable economy, children

who need attention at home, future obscurity, challenges in learning, fear of infection, and so on.

A research about financial stress and psychological distress showed that there is a significant relationship between age and financial conditions below the standard with stress on health students (31). Financial stress is a large contributor that directly or indirectly influences anxiety in students (36). One reason is the concern that they cannot continue their studies. Poor financial conditions can also indirectly increase stress through poor nutrition, insurance, and shelter (36).

A research in Korea shows that college students who were worried about the sustainability of their academic learning had significantly higher anxiety scores than those who did not have anxiety (37). Lack of clarity and a negative effect on the continuity of learning could potentially affect the mental disorder of students when the Covid19 pandemic (22). A study in China states that during the isolation period and the university had not yet opened, it was likely that students would often stay at home so students might adopt indeterminate lifestyles such as poor sleep quality, stress, anxiety due to education or future work (17). Anxiety is defined as a focus on future dangers, depression at loss, and despair about the resolution to solve problems (38). Where future-oriented thinking has been considered a central feature of anxiety and depression. Depression is a mental disorder that often occurs in college students (29). This is caused by new challenges, stressors in academic activities, family and social environment. Students with poor physical and mental disorder conditions often experience depression compared to students with good physical and mental disorder conditions (28).

A research in Israel was followed by nursing students who some of them worked in health facilities during the Covid19 pandemic (23). The research found that there was a significant relationship among the lack of Personnel Protective Equipment (PPE) when working with anxiety in working students compared to students who did not work. Considering Covid19 which has a high transmission rate and transmission through droplets, this is normal. This study is in line with research conducted by Lai on health workers in China, that the vanguard of health has a high risk of experiencing poor mental disorder and requires support and prevention from psychology (39). Confirmation cases and probable cases of Covid19 can cause fear of transmission of a serious disease (40).

Furthermore, health workers will experience loneliness, denial, anxiety disorders, depression, insomnia, and despair (40). Nurses are frontline in treating patients with Covid19 more at risk of infection

due to closeness, frequent contact with patients also working longer hours than usual (39). Those who worked in health facilities should have a counseling session with professionals during Covid19 pandemic. The stress and anxiety that they have can affect their way to save people life.

Mental disorder in the form of anxiety, stress, and depression in students have become a concern for some practitioners. The existence of a Covid19 pandemic triggers a mental disorder that is getting worse in college students so that if it is not treated or taken seriously it will result in bad consequences.

Despite of the fact that mental disorder is a genuine matter and requires treatment, many people that suffered mental disorder do not seek professional help (41). Untreated mental disorder problems are related to the early levels of the help-seeking process (41). Whereas most etiological convictions had been related to a stronger identification with having a mental illness, only biomedical causal beliefs were associated with need and intention to find help. This affiliation appeared especially significant in individuals without mental disorder therapy experience. Person-related attributions, in contrast, were related with a less perceived need for help, a finding that was most pronounced in those with therapy experience.

Investigate illustrates that mental and emotional disorder impact educational overall performance in that students who experience distress are more likely to suffer academic impairment. Students with psychiatric disabilities and mental disorder challenges, both treated and untreated, have been appeared to have lower grade point averages (GPAs) and much likely higher drop-out rates than their peers. Anxiety, depression, and stress are unsafe to adjustment and performance in academic, social and personal contexts. As a population, college students with mental disorder concerns are at risk for experiencing life-long consequences of mental illness "because their mental illness may delay the timely attainment of developmental milestones critical to adulthood" (42).

Patients with severe mental illness (SMI) in Wuhan were impacted by Covid19 outbreak. There were 40 patients at Wuhan Mental Disorder Center diagnosed with Covid19 (40). Those who need a long time in the closed ward can experience fear of being exposed to Covid19. With a lockdown and isolation policy, outpatients have difficulty receiving treatment that has been done and many of them experience mental relapse and uncontrolled behavior (hyperactivity, agitation, and harming self) (40). In the MERS epidemic, a review study showed that a family affected by the infection declare

that the community shunned their family and was socially neglected even after undergoing the healing process and was declared cured of the disease (43). Of survivors of SARS, there were 25% of patients who had symptoms of PTSD while 15.6% feel their depression getting worse (43), this is in line with the large number of grown-ups suicide in Hong Kong in 2003 and 2004 in those who were affected by the SARS epidemic.

The National Health Commission of China (NHC) has integrated psychological crisis prevention into general deployment of disease prevention, to reduce the risk of negative psychological outcomes due to Covid19 (40). The mental disorder-related national associations and educational societies are required to undertake emergency psychological crisis interventions, psychological counseling and establishing psychological assistance expert groups to provide professional practice and coordinate with health authorities. Mental disorder services are done online in several areas. As of February, there were 29 guidelines and instructions for mental disorder services during the Covid19 pandemic by the government mental disorder associations of your academic societies (40).

The World Health Organization launched vision of the 2013-2020 mental disorder action plan, which is a world where mental disorder is valued, promoted and protected, mental disorders are prevented and people affected by these disorders can perform various human rights and get access to high quality, culturally appropriate health and services socially at the right time to encourage recovery which makes it possible to achieve health at the highest level and participate fully in the community and at work, free from stigmatization and discrimination (16).

The overall objective of this mental disorder action plan is to promote mental disorder, prevent mental disorders, provide services, improve recovery, promote human rights and reduce death, illness, and disability in people with mental disorders (16).

According to a review study that had been conducted, there are several way to prevent the mental disorder effects of Covid19 such as, people must dodge excessive exposure to Covid19 media coverage, keeping a healthy lifestyle, and a positive mind (43). A common barrier to seeking help among students is that stress is normal and the perception that help is not needed (44). Students are aware of how to deal with stress, but this method is rarely used (45). Students handle stress in positive and negative ways. Positive ways include exercise, relying on trust, and telling themselves that everything will be okay. While negative ways include

eating more, reducing sleep time, and increasing the time of internet use, and delaying work delay (45). A study in China showed that 2500 METs of physical activity for a week proved to be able to reduce negative emotions during the Covid19 outbreak (17). This is likely because the community needs additional physical activity to offset the psychological burden and negative emotions caused by the plague and social distancing.

Campus or university usually provides help in the form of mental disorder counseling (campus counseling center). Students need not state that they have a mental illness. But still, the stigma that they go to counseling to get help remains inevitable (42). Mental disorder America formed the forum for the first time in the form of a Collegiate Mental disorder Innovation Council (CMHIC) for students who "moved beyond awareness and took action to address mental disorder in their campus communities" (42). Many solutions to overcome mental disorder when a pandemic can be used by individuals. A study in China shows that mental disorder education is done online using social networks and applications such as WeChat, Weibo, and TikTok (19). When the SARS epidemic was happened, suggestion to deal with coping stress on students by providing counseling services (19).

The method to measure the level of mental disorder in several articles is the same as follows, Depression Anxiety Stress Scale (DASS), 7-item Generalized Anxiety Disorder Scale (GAD-7) and Patient Health Questionnaire (PHQ-9) (18-19).

Depression Anxiety Stress Scale (DASS) is an instrument that is often used to assess subjective depressive and anxiety complaints in patients. DASS was developed by Lovibond. DASS aims to assess the perceived severity symptoms associated with depression, anxiety, and stress in the past week (46). Several published studies indicate that DASS-21 is a reliable and valid instrument for measuring depressive symptoms, anxiety, and stress in adult samples of clinical and non-clinical studies. DASS-21 is the best instrument to measure general score of distress rather than using three different instruments to measure depression, anxiety, and stress in the countries studied (Brazil, Turkey, UAE, Canada, Hong Kong, Romania, Taiwan, and United States) (47).

The 7-item Generalized Anxiety Disorder Scale (GAD-7) is a short self-report scale designed to identify possible cases of GAD (Generalized Anxiety Disorder). GAD-7 was developed as a screening tool to detect GAD for patients in primary health facilities and is commonly used for adults in some cultures. In primary health

facilities, GAD-7 is a reliable and valid instrument for adults with a sensitivity of 89% and a specificity of 82% and with a cut point of 10 points in the clinical population (46). GAD-7 is an approved tool for identifying GAD in adults. GAD-7 also shows promising results in identifying GAD in adolescents, including its reliability and validity in measuring GAD.

Patient Health Questionnaire-9 (PHQ-9) is a nine-item depression scale to help diagnose depression and intervene and monitor treatment (48). This instrument can be performed for several minutes, is efficient, and can be relied upon to detect major depression in primary care. This instrument can be given repeatedly and the results show improvement or worsening of depression during the treatment process. PHQ-9 is a reliable and valid instrument for measuring the severity of depression (48). PHQ is useful as a clinical tool and in research. 7 articles analyzed have used a reliable and valid instrument. Reliability and validity are two important and fundamental things in good research instruments (48). A study in China indicate that symptoms of mental illness were reported by 20-35% of respondents using the DASS method (22). The results showed that 34.19% of the sample experienced symptoms of mild to severe depression. 21.34% experienced mild to severe anxiety symptoms and 28.14% experienced mild to severe stress symptoms. While another research shows that there was no increase in mental disorder disorders during the 2 weeks of the study (21). Another study conducted in China also used DASS as a tool to measure negative emotions and mental disorder during the Covid19 pandemic (17). The results showed that 85% of the sample reported their concern about Covid19 and 20% reported at least one form of mental disease. The Covid19 pandemic also significantly reduced adolescent sleep quality, and increased stress and anxiety. This is in line with a study that done during SARS pandemic who uses DASS as an instrument to measure current psychological disorders and their sustainability during the SARS pandemic.

In contrast to a research in China that use DASS instrument, another researcher in China (18) use GAD-7 as an instrument in their research. The results showed that 24.9% of students attested to the Covid19 outbreak. GAD is an instrument to measure anxiety while the aim of researcher in China is to determine the psychological effects of a pandemic (17). Psychological effects can be overcome by using DASS and known psychological effects are 3 problems with mental, depression, stress. This is in line with a study in China that was followed by medical college student which also used GAD-7 and PHQ to measure mental disorder disorders in students

during the COVID pandemic (19). The results showed as many as 35.5% of students experienced depression, 22.1% managed to overcome and overall to a moderate level.

A research examined anxiety disorders in nursing students using the GAD-7 instrument (23). The results showed that the prevalence of anxiety with moderate and severe levels was 42.8% and 18.1%. Whereas a research done in United States used PHQ as a research instrument to measure depression and anxiety in students during a Covid19 pandemic (20). The results showed that as information about Covid19 increased, students became more frequent and visited fewer places and showed increased anxiety and depression.

The limitation of the study article that there are article have small sample population than other articles. A small population may mean that the sample cannot represent the population. Whereas sample size that is one of the important things in conducting research. In principle, the more samples the better the results of the research.

### CONCLUSION

The Covid19 pandemic affected students' mental disorder. Some mental disorder disorders that occur are disorders, depression, and stress. The risk factors that most influence students during a pandemic are media coverage of the latest estimate of Covid19, both from positive numbers, cure rates, and total deaths. In addition, social contact, income, personal protective equipment, living with parents, and academic factors are also risk factors that affect mental disorder in college students. Reflecting on a pandemic or an outbreak that has happened before and the consequences if not watched out, mental disorder in student needs to be an important concern. Considering that mental disorder in students is dangerous if not taken seriously, it is necessary for related parties such as universities to collaborate with the government or mental disorder institutions to provide online counseling facilities. Such mental health counseling and monitoring needs to be provided in countries with high Covid19 cases. For further research, colleges are expected to provide some activities that can prevent students' mental disorder to not worse during the pandemic.

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