






A narrative review into the impact of COVID-19 pandemic on senior high school adolescent mental health

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Abstract

Problem: High school teenagers are facing significant challenges during the COVID-19 pandemic. Teenagers are at risk of experiencing physical, mental, and social health problems due to the COVID-19 pandemic. This narrative review aims to explore the impact of COVID-19 on the emergence of mental health problems in high school adolescents.

Methods: This study employed a narrative review method. We conducted a systematic search using PRISMA on three databases: Medline, PubMed, and Science-Direct. A total of 40 articles met the inclusion and exclusion criteria set based on the research objectives.

Findings: The study uncovered that high school adolescents had an increased risk of experiencing mental health problems, namely psychological distress, worry, loneliness, anxiety, depression, traumatic symptoms, other psychological disorders, suicide risk, sleep disorders, and psychosocial functioning. Anxiety, depression, and psychological stress were the most discussed mental health problems among high school adolescents during the COVID-19 pandemic.

Conclusions: There is a need for efforts to identify health problems and intervene in mental health problems early in high school adolescents. Schools, mental health workers, and the government (e.g., policy stakeholders) need to implement the recommendations given as a follow-up effort for mental health services for high school youth.

KEYWORDS

adolescent, COVID-19, high school, mental health

1 | INTRODUCTION

Coronavirus Disease 2019 (COVID-19) is caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) and is currently impacting a global health crisis (Balachandar et al., 2020; Li et al., 2020). COVID-19 was first discovered in Wuhan, China, in 2019, which quickly spread throughout the country (H. Wang et al., 2020).

This disease is transmitted through droplets, and no cure has yet been found, so it impacts physical, psychological, economic, and social health (Hossain et al., 2020). COVID-19 can infect and cause health effects at all ages, both children, elderly, adults, and adolescents. Adolescents are a group that is vulnerable to experiencing health problems both physically and mentally (Membride, 2016). Mental health problems often experienced by adolescents are

anxiety about the future and their health conditions (Márquez-Aponte, 2020). Anxiety in adolescents can interfere with their activities both at school and home so that maintaining health and minimizing symptoms is an effort that can be done. During the COVID-19 pandemic, teenagers are more susceptible to infection because their health behavior and compliance are not like adults (Dalton et al., 2020).

COVID-19 causes health problems such as disturbed sleep patterns, eating patterns (CDC, 2020), a weakened immune system, and worsening comorbid diseases (Deng & Peng, 2020). People often feel physical fatigue (Brooks et al., 2020), fever, sore throat, cough with phlegm, and respiratory problems due to COVID-19 (Arora et al., 2020). The inability to cope with symptoms causes anxiety as a psychological impact during a pandemic (Arora et al., 2020). In addition to the effect on health, this pandemic period also requires students to undergo distance learning for a longer time and carry out social restrictions to prevent the spread of the virus. Students go through a transitional phase as they have to the different pressures of distance learning, followed by traditional or face-to-face learning once they are back in school (Neal, 2020). Teenagers spend much time learning online, so that they are limited in interacting with the environment. This condition causes changes in adolescent behavior that are at risk for psychosocial disorders.

COVID-19 impacts the physical and mental conditions as well as behavior and social in adolescents. During the pandemic, adolescents experience several psychosocial problems, including stress, anxiety, and depression (S. J. Zhou, Wang, et al., 2020). For example, during the first week of social distancing, adolescents experienced moderate to severe anxiety (21%) and depression (34%; Odriozola-González et al., 2020). Anxiety that occurs in adolescents during this pandemic is in the form of mild (21.3%), moderate (2.7%), to severe (0.9%) anxiety (Cao et al., 2020), caused by fear of pandemics, lack of knowledge of preventive measures, and too much information about the infodemic (Pratiwi, 2020). In addition, sleep disturbances, decreased productivity, not focusing in concentration in learning to memory disorders also cause anxiety and fear (Zaharah et al., 2020). This means that anxiety causes health problems, which can cause anxiety in adolescents.

The COVID-19 pandemic is a big enough stressor for teenagers where coping abilities differ from one teenager to another (Fitria, 2020). This impacts the variety of depressive symptoms that arise in adolescents. Moderate and severe depressive symptoms occur at 12–15 (C. Zhang et al., 2020), while anxiety occurs in late teenagers (M. Zhou et al., 2018). In adolescents, problems of sadness, loneliness, and inner anxiety also increase (Schlegl et al., 2020). During the pandemic, various psychological problems experienced by teenagers in senior high schools put them at risk for mental health problems. Therefore, there is a need for further exploration and discussion of mental health problems experienced by senior high school students during the pandemic.

Previous systematic reviews have discussed the impact of COVID-19 on the mental health of children and adolescents (Samji et al., 2021). In addition, an exploration of the impact of the lockdown

during the COVID-19 pandemic on the mental health of children and adolescents has also been discussed (Panchal et al., 2021). While there was already literature discussing the impact of COVID-19 on adolescents (Jones et al., 2021). However, to our knowledge, this is the first narrative review to focus exclusively on the impact of the COVID-19 pandemic on the mental health of senior high school students. Findings from the study are expected to be catalysts for providing health services and recommendations to related parties (e.g., schools, health workers, and policymakers) to overcome health problems in high school adolescents.

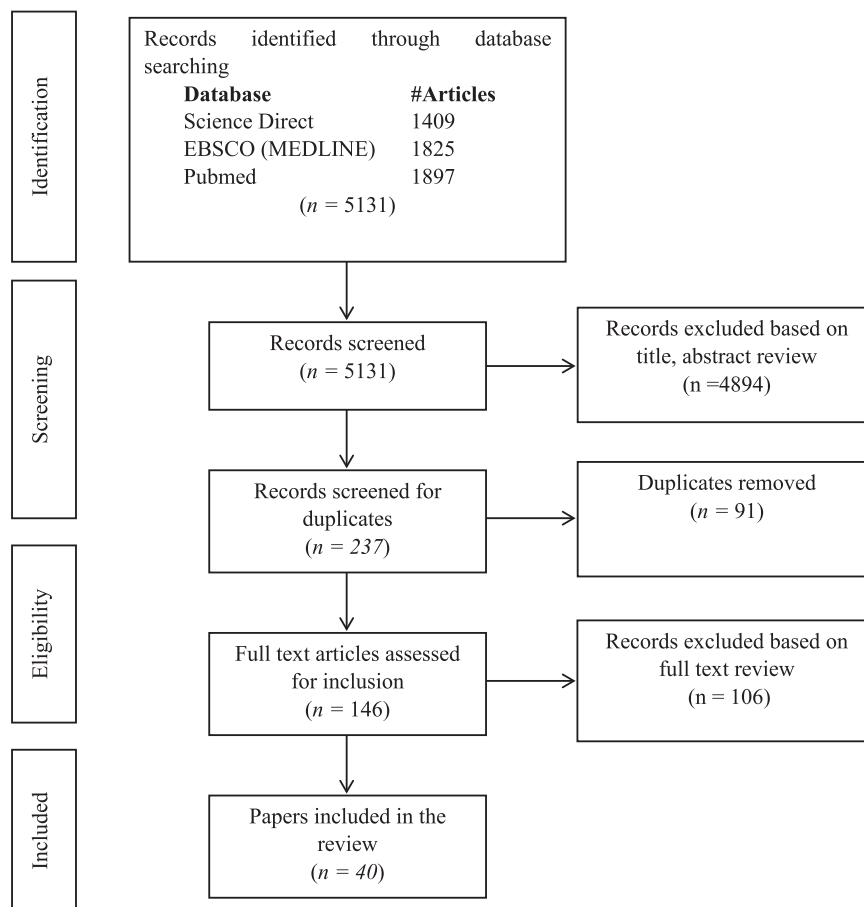
2 | METHODS

The present study employed a narrative review. We searched for research articles through three databases: PubMed, Medline, and ScienceDirect using the PRISMA procedure (see Figure 1). We used the following terms in our search: "(2019-nCoV OR 2019-nCoV OR COVID-19 OR SARS-CoV-2 OR coronavirus) AND (Stress OR anxiety OR depression OR insomnia OR mental health OR psychological) AND (Student OR senior high school OR School aged-adolescent OR high school student)." This strategy and search terms were modified based on the databases used. Our literature search was based on some inclusion criteria, namely, (1) articles are written in English and published in 2019–2022, (2) the articles are observational studies that discuss mental health problems experienced by high school teenagers or teenagers aged between 14 and 19 years during the COVID-19 pandemic, (3) and the full article texts are available. Meanwhile, the exclusion criteria in this search were that (1) articles did not focus on discussing high school participants, (2) articles were not research-based (e.g., reviews, letters to editors, and commentaries), (3) articles aimed at testing an intervention, and (4) articles are duplicated. This study also adds manually search results to collect relevant articles, especially related to recommendations for high school adolescents who experience mental health problems.

Overall, 5131 were found in the initial search process, where 4894 articles did not meet the inclusion and exclusion criteria. We independently conducted a study selection analysis. All authors reached an agreement on which articles to include. Eventually, 40 articles met the inclusion and exclusion criteria and the objectives of this study. This review aims to summarize the literature on mental health problems in high school adolescents during the COVID-19 pandemic to identify and prevent mental health problems in adolescents. In addition, this review aims to provide recommendations for interventions carried out by health workers and related parties to overcome mental health problems in high school adolescents.

3 | FINDINGS

A total of 40 studies were obtained based on the selection process and included in the systematic review. The articles found were categorized based on mental health problems experienced by high

FIGURE 1 PRISMA flow chart for narrative review

school adolescents during the pandemic, namely psychological distress, worry, loneliness, anxiety, depression, traumatic symptoms, other psychological disorders, and psychosocial functioning. The summary of articles included in this narrative review is described in Table 1.

3.1 | Psychological distress

During the COVID-19 pandemic, adolescents reported deteriorating and declining mental health conditions ranging from mild to severe symptoms (Scott et al., 2021; Shepherd et al., 2021; Thorisdottir et al., 2021). As the age grows, psychological distress also increases. Teenagers who are currently in their final year in senior high school have the highest level of psychological stress compared to primary school and junior high school (Qin et al., 2021; Schwartz et al., 2021; H. Xu et al., 2021). High school adolescents have higher stress reactions such as feeling sad, angry, withdrawn, and experiencing difficulties or cognitive/attention disorders (Schwartz et al., 2021). Psychological stress in adolescents is related to low and moderate socioeconomic status, changes in the learning system to online, emotional stress during school, and parental education (Buško & Bezinović, 2021; Qin et al., 2021). Adolescents from families with low/moderate education have four times the risk of experiencing

stress at home and stress related to health at the start of the COVID-19 pandemic (Villaume et al., 2021). On the other hand, adolescents from higher education families experience a decrease in anger and experience joy (Villaume et al., 2021).

In addition, the stress in adolescents is also influenced by the risk of exposure to infection from families and adolescents who experience symptoms that lead to COVID-19 symptoms such as cough, fever, nasal congestion, sore throat, and diarrhea (H. Xu et al., 2021). Decreased motivation, decreased creativity, decreased social interaction, and family conflict is also a risk of mental health decline in adolescents (Jester & Kang, 2021). The relationship between parents and adolescents is related to stress conditions in adolescents. Adolescents who do not discuss with their parents have higher stress, anxiety, and depression (Tang et al., 2021). During this pandemic, compared to junior high school teenagers and junior high school teenagers, senior high school teenagers have a better level of life satisfaction (Tang et al., 2021). However, Ng et al.'s (2021) research showed the opposite result that life satisfaction in high school adolescents was lower than in younger adolescents. Physical activity during the COVID-19 pandemic can help teenagers reduce stress levels, regulate emotions, and improve their mental health (Shepherd et al., 2021). The ability of students to make adjustments and an optimistic attitude to the current situation can help teenagers overcome difficulties (Buško & Bezinović, 2021).

TABLE 1 Mental health problems in adolescents

No	References	Mental health problems												
		Anxiety	Depression	Psychological distress	Sleep disorder	Loneliness	Psychosocial function	Traumatic symptoms	Other psychological symptoms	Feeling worried	Suicide risk			
1.	C. Zhang et al.(2020) and Z. Zhang et al. (2020)	✓	✓											
2.	AlAzzam et al. (2021)	✓	✓											
3.	Andreas and Brunborg (2021)	✓												
4.	Chen et al. (2021)	✓	✓											
5.	Giannopoulou et al. (2021)	✓	✓											
6.	Liu et al. (2021)	✓	✓											
7.	McGuine et al. (2021)	✓	✓											
8.	Xu et al. (2021)	✓												
9.	Scott et al. (2021)	✓	✓	✓				✓						
10.	Tang et al. (2021)	✓	✓	✓										
11.	X. Zhang et al. (2021)	✓												
12.	T. Hou, Xie, et al. (2021) and T. Hou, Mao, et al. (2021)		✓						✓					
13.	Pinchoff et al.(2021)		✓											
14.	Thorisdottir et al. (2021)		✓	✓										
15.	H. Xu et al.(2021) and Q. Xu et al. (2021)			✓										
16.	Jester and Kang (2021)			✓			✓							
17.	Ng et al. (2021)			✓										
18.	Qin et al. (2021)			✓										
19.	Schwartz et al. (2021)			✓										
20.	Shepherd et al. (2021)			✓										
21.	Villaume et al. (2021)			✓										
22.	Fazeli et al. (2020)						✓							
23.	Genta et al. (2021)								✓					
24.	Socarrias et al. (2021)										✓			

3.2 | Feeling worried

Research showcases that about one in four teenagers is worried about the COVID-19 pandemic (Gazmararian et al., 2021). Teenagers' level of concern about the COVID-19 pandemic is higher among minority teenagers. In addition, teenagers are worried if their friends or family members are infected with COVID-19 (Gazmararian et al., 2021). Anxiety in adolescents is also caused by the impact of the COVID-19 pandemic on the financial condition of the family, where female adolescents have higher worries (Gazmararian et al., 2021). In addition, teenagers who want to continue their education to college and need good academic grades to prepare for university are worried and have difficulties related to learning (AlAteeq et al., 2020). Listening to music, watching television and movies, talking with friends and family, sleeping, and using social media are coping strategies used by teenagers to deal with worries during the pandemic, whereas these coping strategies are used mainly by female teenagers (Gazmararian et al., 2021).

3.3 | Loneliness

During this pandemic, high school teenagers face the challenge of feeling lonely (Scott et al., 2021). Compared to children at the elementary and junior high school levels, high school students are reported to have higher levels of loneliness (Han et al., 2021). Loneliness is the leading cause of emotional reactions, namely, feeling sad in adolescents (Esposito et al., 2021). The social support adolescents receive can reduce the prevalence of loneliness and depression (T. Hou, Xie, et al., 2021). Loneliness is a mediator in the relationship between social support received by high school adolescents with depressive symptoms (T. Hou, Xie, et al., 2021).

3.4 | Anxiety

A significant mental health problem experienced by adolescents during a pandemic is anxiety (Chen et al., 2021). Female adolescents have higher anxiety scores than male ones (AlAzzam et al., 2021; Bilginer et al., 2021; Z. Zhang et al., 2020). A significant mental health problem experienced by adolescents during a pandemic is anxiety. In addition, junior high school teenagers have a higher level of anxiety (Z. Zhang et al., 2020). Anxiety protective factors are teenagers who have a father with a high level of education (AlAzzam et al., 2021).

Meanwhile, the risk factors that are positively related to high anxiety in adolescents are lack of rest, having difficulty with online education, having too much schoolwork, focusing too much on graduation, where adolescents live, and low physical activity (AlAzzam et al., 2021; Andreas & Brunborg, 2021; Liu et al., 2021). Adolescents who participate in sports activities have a lower risk of anxiety and depression than adolescents who do not do sports (McGuine et al., 2021). The residence of adolescents also can increase the risk of anxiety. Adolescents who live in rural areas have a higher level of

anxiety than adolescents who live in urban areas. This is related to the higher socioeconomic status of their parents (Q. Xu et al., 2021). In addition, adolescents who do not work are associated with higher anxiety scores than adolescents who work (AlAzzam et al., 2021). Increased anxiety in adolescents is associated with improved sleep disturbances and vice versa (X. Zhang et al., 2021).

3.5 | Depression

Similar to anxiety, depression is a problem that is increasing and worsening in high school teenagers during this pandemic (Scott et al., 2021; Thorisdottir et al., 2021). Female high school adolescents have a higher risk of depression scores than males (AlAzzam et al., 2021; Bilginer et al., 2021; Chen et al., 2021; Z. Zhang et al., 2020). In addition, junior high school adolescents and working adolescents were found to have lower levels of depression than second and third-grade adolescents and adolescents who did not work (AlAzzam et al., 2021; Z. Zhang et al., 2020). Compared to middle school teenagers, high school teenagers are also more likely to experience depressive symptoms (Pinchoff et al., 2021).

Parental education is also associated with depression in adolescents (AlAzzam et al., 2021). A high level of education in the father is a protective factor for depression in adolescents. In contrast, a high level of education in the mother is a risk factor for high depression scores in high school adolescents (AlAzzam et al., 2021). In addition, following and having difficulties in online education is also a risk factor for adolescent depression (AlAzzam et al., 2021; Chen et al., 2021). The existence of uncertainty about the future, family and social expectations, and academic pressure significantly influence anxiety and depression in high school adolescents (Giannopoulou et al., 2021). Depression has a strong positive relationship with anxiety so that the prevalence of depression is found to be more common in adolescents who experience high levels of anxiety (Andreas & Brunborg, 2021; Z. Zhang et al., 2020). Likewise, previous research showcases that high school adolescents who are depressed are more prone to suffer from anxiety.

3.6 | Traumatic symptoms

The COVID-19 pandemic provides a traumatic experience for high school teenagers (Z.-R. Ma et al., 2021). Female adolescents are reported to have higher PTSD symptoms than males (Hu et al., 2021). Adolescents who live in rural areas have a higher risk of PTSD than adolescents in urban areas (Z.-R. Ma et al., 2021). Lower parental education level is associated with lower PTSD risk (Z.-R. Ma et al., 2021). PTSD in high school adolescents is associated with excessive fear of the COVID-19 pandemic and the presence of someone in their environment which is infected with COVID-19. Both of these relationships are mediated by problematic smartphone use (Hu et al., 2021). Increased trauma symptoms related to the COVID-19 pandemic are associated with increased psychological symptoms

(Karaman et al., 2021). Adolescents experience feelings of insecurity, fear of death, risk contracting COVID-19, feel distant from school and friends, and the uncertainty of the future triggers high school teenagers to experience psychological symptoms (Karaman et al., 2021).

3.7 | Other psychological symptoms

The pandemic causes teenagers to experience increased emotional reactions. Teenagers often report boredom, sadness, and fatigue (Esposito et al., 2021; Forte et al., 2021). Emotional reactions occur more frequently in female adolescents than in male adolescents. Meanwhile, adolescents living in rural areas experience fewer emotional reactions than adolescents in urban areas (Esposito et al., 2021; Forte et al., 2021). Interestingly, teenagers who were out of the homeless were significantly more likely to feel angry (Forte et al., 2021). Relationships between adolescents and their families that are not good will increase the emergence of emotional reactions, whereas family support will reduce the emotional reactions of adolescents. The increased use of social media also impacts the possibility of experiencing boredom (Forte et al., 2021). During the COVID-19 pandemic, high school teenagers are also at risk of experiencing phobias, and females have a three times higher risk than males (Bilginer et al., 2021).

3.8 | Suicide risk

Although not statistically significant, about one in five high school teenagers commit suicide behaviors, including self-harm and suicide attempts, that are not and endanger their lives (Hermosillo-De-la-torre et al., 2021). Female adolescents are more likely to have suicidal ideation and suicide attempted than males (T. Hou, Mao, et al., 2021). Factors that influence the occurrence of suicidal ideation and attempted suicide in adolescents are high maladaptive coping in adolescents (T. Hou, Mao, et al., 2021). Meanwhile, the high level of parental education and family financial status below the average is a risk of suicidal ideation in adolescents (T. Hou, Mao, et al., 2021). Anxiety and depression are positively associated with suicidal ideation and attempted suicide in adolescents. Anxiety symptoms are strong predictors of attempted suicide in adolescents (T. Hou, Mao, et al., 2021).

3.9 | Sleep disorder

School closures and activity restrictions during the COVID-19 pandemic have significantly impacted high school teenagers' sleep patterns and quality. Being a high school teenager means having a risk of experiencing insomnia (S. J. Zhou, Wang, et al., 2020). High school adolescents have disturbances in sleep duration, which is less than 7 h per day (S. J. Zhou, Wang, et al., 2020). However, another study

states that during the lockdown period, students have increased sleep duration and sleep quality (Genta et al., 2021). Students can sleep 8 h/day compared to before the lockdown, which is 7 h/day. This is related to reduced activity at school during the lockdown (Jester & Kang, 2021). In addition, the COVID-19 pandemic has caused high school teenagers to experience sleep disorders such as sleep delays, changes in wake time, sleep onset, sleep duration, and changes in sleep quality (Socarras et al., 2021). Compared to junior high school teenagers, high school teenagers have shorter sleep durations and wake up later because teenagers do not need to do daily activities before school, such as going to school by transportation or having regular extracurricular activities in the morning (Weingart et al., 2021). Poor sleep quality in adolescents is caused by family worries about being infected, diet quality, exercise time per day, anxiety, time spent searching for information about COVID-19, and time spent on electronics (Zhai et al., 2021). In addition, internet gaming disorder also causes sleep disorders in adolescents, where this mechanism is mediated by stress, anxiety, and depression in adolescents (Fazeli et al., 2020).

3.10 | Psychosocial function

Adolescents reported changes in their psychosocial functioning and activities before and after the COVID-19 pandemic. Activities that high school youth tend to do during the COVID-19 pandemic during school closures are playing mobile and computer games, watching television, and socializing with family (Ranjbar et al., 2021). During the COVID-19 pandemic, teenagers stated less time to do outdoor activities and meet friends face-to-face (Kerekes et al., 2021). Thus, teenagers are prone to conflict with friends, miss their friends, and fear losing closeness (Scott et al., 2021). This pandemic is considered a threat to the social life of teenagers (Schwartz et al., 2021). Even so, teenagers stay in touch with their friends through social media and video games or chat with family and communicate with family via mobile phones or the internet (Esposito et al., 2021; Kerekes et al., 2021). Teenagers face challenges during this pandemic when family members do not provide support and debate with family members and relatives (Scott et al., 2021). Behind the negative impact of the COVID-19 pandemic on mental health, at this time, teenagers can do activities that they previously could not do due to lack of time. Besides, teenagers have the opportunity to be able to manage their daily lives (Kerekes et al., 2021). In addition, teenagers' use of illegal drugs and alcohol also experienced the highest decline during this pandemic (Miech et al., 2021).

4 | DISCUSSION

The COVID-19 which has been developing since 2019 is an unprecedented infectious disease that has caused mental health problems worldwide. Sudden overall lifestyle changes can have an impact on mental and emotional health. Although several previous

studies have tried to explain the extent to which mental health problems in adolescents occur during the COVID-19 pandemic (L. Ma et al., 2021; Octavius et al., 2020; Singh et al., 2020). However, there has been no specific systematic review focused on the impact of COVID-19 on the mental health of senior high school adolescents during the COVID-19 pandemic.

Adolescents are a population that needs to be a priority, and it is necessary to identify the long-term consequences of COVID-19. Adolescents are a phase where they need to struggle to deal with the future and its uncertainty, where is exacerbated by the COVID-19 pandemic, which causes teenagers' future planning to become increasingly uncertain (American Psychological Association, 2020). Two out of five Gen Z teens (ages 13–17) said their stress levels had increased over the past year, with about 50% of Gen Z teens (aged 13–17) saying that the pandemic had seriously disrupted their plans (American Psychological Association, 2020). Research showed that during the COVID-19 pandemic, 48%, 44%, 34%, and 29.1% of adolescents experienced posttraumatic stress symptoms, sleep disorders, depression, and anxiety, respectively (L. Ma et al., 2021). At the same time, loneliness, low-severe stress, perturbed about the pandemic, and attempted suicide were also found in adolescents with 59%, 26.9%, 24.5%, and 7.5%, respectively, during this pandemic (Al Omari et al., 2021; Gazmararian et al., 2021; T. Hou et al., 2020).

Our study revealed that psychological stress, anxiety, and depression were the most common health problems among high school seniors during the pandemic. Adolescent girls are 1.13 times more likely to feel stressed than boys (J. Wang et al., 2021). Likewise, with depression and anxiety, girls compared to boys experienced more depression and anxiety with a ratio of 50.7% versus 30.7% and 46.9% compared to 26.7%, respectively (AlAzzam et al., 2021). Anxiety and depression increased by 2.1 times and 2.3 times, respectively, if people were infected with COVID-19 in their environment (Octavius et al., 2020). Depression, anxiety, and stress are significantly correlated with life satisfaction, psychological well-being, and maladaptive coping (Lopes & Nihei, 2021). The impact of depression and anxiety can be prevented by having a positive and optimistic attitude in the COVID-19 pandemic (S. J. Zhou, Zhang, et al., 2020).

Globally, youth activities during the COVID-19 pandemic have changed drastically. During this pandemic, they have to go to school and learn online/remotely (Schwartz et al., 2021). This causes various health problems in high school seniors, such as distress, feeling socially disconnected, low learning motivation, and a more significant perceived negative impact on schooling (Magson et al., 2021). The psychological health problems of high school students, plus the demands for adolescents to prepare for the final year of high school and determine university enrollment, have become a burden for them (AlAzzam et al., 2021). School closures and concerns about academic achievement exacerbate the impact of mental health on adolescents (T. Hou et al., 2020). Even so, the pandemic also has a positive impact on adolescents, namely, closer and more discussions that can be carried out between adolescents and their parents during home quarantine (Jones et al., 2021). Adolescents have a high potential to experience a variety of mental health and psychosocial problems, and

the consequences can have a long-term adverse effect on their overall psychological well-being (Lee, 2020). Therefore, it is necessary to monitor the mental health status of adolescents in the long term, improve adolescent coping, increase resilience and mental health during the pandemic. In addition, as the pandemic continues, implementing interventions, increasing youth support, and planning health-related programs and policies in schools should be carried out to improve the psychological well-being of high school students.

5 | CONCLUSION AND RECOMMENDATIONS

COVID-19 is a significant challenge for the entire system of society worldwide. This pandemic is forcing people to make lifestyle changes. Adolescents who are currently in the final stages of senior high school have higher levels of stress, anxiety, and depression (Tang et al., 2021). In particular, high school adolescents experience significant challenges in their lives, including feelings of uncertainty about their future and preparation for transition to higher levels of education (Scott et al., 2021). The challenges faced by high school youth today (during the COVID-19 period) are partly challenges that have never been anticipated before. Management of mental health problems from an early age can potentially reduce morbidity and mortality and improve adolescents' quality of life. Anchored by the study's findings, this study implicates the review results for teachers and schools, health officials, policy stakeholders, and communities.

5.1 | Teachers and schools

It is imperative to ensure that the management of COVID-19 in schools is carried out properly, including risk assessment, transmission risk reduction, implementation of health protocols in schools, and COVID-19 testing (Lorenc et al., 2021). Paying attention to the online learning system in schools and to the complexity and volume of tasks assigned to students so that it is expected to reduce the stress intensity experienced by high school students should also be carried out (Buško & Bezinović, 2021). The learning process in the classroom should be intriguing by involving Information and Technology staff to provide an innovative and fun learning experience, besides creating an optimistic and positive atmosphere in the school (Camacho-Zuñiga et al., 2021). Increasing closeness with students by facilitating effective communication and providing psychological mentoring services is also encouraged (Camacho-Zuñiga et al., 2021). Finally, enacting job training to help youths cope with uncertainty in the future by providing several options (Scott et al., 2021).

5.2 | Health practitioners

There is a need for counselors/mental health practitioners in schools who provide services to students, families, and teachers to meet the

needs of mental health services in schools (Chi et al., 2021; Karaman et al., 2021). This can be done by conducting assessments on students, especially those who experience mental health problems, and communicating with their parents to provide appropriate interventions (Chi et al., 2021). There need to be intervention efforts to prevent and reduce the adverse effects of mental health problems experienced by students. Such intervention efforts are expected to be able to focus and adjust to the needs of each individual (Buško & Bezinović, 2021). Counselors at schools need to adapt to the COVID-19 pandemic situation by providing online intervention services to help students overcome the psychological problems they are experiencing (Karaman et al., 2021). For example, they can work with schools and governments to develop multilayered mental health intervention programs in the education system (e.g., multitiered approach) that includes universal mental health interventions (Tier 1), intervention services for small groups (social or academic groups; Tier 2), and individual and family therapy based on the students' needs to address the most significant mental health problems (Tier 3; Terepka et al., 2021).

5.3 | Policy stakeholders and communities

In this uncertain situation, it is hoped that policymakers can provide adequate and relevant information related to important issues quickly and practically (Buško & Bezinović, 2021), such as conducting programs that focus on providing interventions to families of high school teenagers to increase support, communication, and closeness between family members (Lee et al., 2021). Governments and communities can develop peer support groups for adolescents that support adolescents who experience mental health problems (Behisi et al., 2021).

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CONFLICT OF INTERESTS

The authors declare that there are no conflict of interest.

AUTHOR CONTRIBUTIONS

Heni D.Windarwati, Retno Lestari, Ahmad A. Supianto, and Satrio A. Wicaksono conceived of the presented idea and developed the theory and concept. Niken A. L. Ati and Mira W. Kusumawati carried out the research and wrote the manuscript with support from all authors. Atin Humayya and Dessy Ekawati verified the method and supervised the finding of this study. All authors discussed the results and contributed to the final manuscript. The manuscript has been seen and approved by all authors.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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