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OVERVIEW OF ADOLESCENTS MENTAL HEALTH STATUS DURING THE COVID-19 PANDEMIC IN INDONESIA: A CROSS-SECTIONAL STUDY

Khoiriyah Isni[1*], Winda Yulia Nurfatona[2], Khairan Nisa[3], Riris Diana Rachmayanti[4], Nurul Qomariyah[5], Nur Hasmalawati[6]

[1] Department of Public Health, Faculty of Public Health, Universitas Ahmad Dahlan, Indonesia
[2] Reban Primary Health Care, Indonesia
[3] Sungai Pua Primary Health Care, Indonesia
[4] Department of Health Promotion and Behavioral Sciences, Faculty of Public Health, Universitas Airlangga, Indonesia
[5] Faculty of Medicine, Universitas Ahmad Dahlan, Indonesia
[6] Faculty of Psychology, Universitas Muhammadiyah Aceh, Indonesia

Corresponding Author: khoiriyah.isni@ikm.uad.ac.id

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ABSTRACT

Background: There has been a steady rise in the number of teenagers who are reporting mental health issues. Empirical evidence confirms a significant increase in mental health services in Yogyakarta between 2018 and 2022. The efforts to prevent and control mental health issues are extensive and all-encompassing, with one approach being the early identification of mental health problems in teenagers. **Purpose:** The purpose of this study is to assess the mental health levels of teenagers during the COVID-19 epidemic. **Methods:** This study used a quantitative descriptive methodology, encompassing a sample of 64 adolescents residing in Warungboto Village, Yogyakarta City, aged between 15 and 24 years. The participants were chosen according to the prevalence of adolescents in the research area. The utilised instruments included the Depression Anxiety and Stress Scale (DASS-21) and the Perceived Stress Scale (PSS-10), which were subjected to descriptive processing. **Results:** 56% of participants identified as male, while 61% fell within the age bracket of 19-24 years. Furthermore, a significant majority (97%) of respondents actively pursued education beyond the secondary level. The DASS-21 assessment revealed a highly pronounced level of anxiety (26.6%), a typical level of depression (35.9%), and a moderate degree of stress (18.8%). In addition, the PSS-10 findings indicated that 59% of adolescents encountered stress. **Conclusion:** Adolescents are a very susceptible demographic to mental health issues, particularly anxiety. Regular and timely screenings are necessary to prevent the progression of severity, especially in mild or moderate conditions.

Keywords: adolescent, COVID-19, early detection, mental health, pandemic

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INTRODUCTION

According to the Regulation of the Minister of Health of the Republic of Indonesia, adolescents are residents aged 10-18. The Population and Family Planning Agency states that the age range for adolescents is 10-24 years old and unmarried (Ministry of Health Republic of Indonesia, 2014). Adolescence is a time of transition in one's life and the stage of development that occurs between childhood and adulthood and involves cognitive, social, and biological changes. Biological changes include height growth, hormonal changes, and sexual organ maturation, marked by puberty; mental maturation includes thinking and intelligence changes. It is characterized socially by the desire to achieve independence and change interpersonal relationships (Santrock, 2007). In this transitional period, adolescents become very sensitive, easily anxious, cry, frustrated, and easy to laugh. Adolescents are vulnerable to emotional and mental disorders due to emotional instability.

Currently, mental health disorders are still considered taboo by society. Someone who experiences mental health disorders will be considered as someone who is lacking in their religious beliefs and does not remember their God. Because of this, individuals feel reluctant to share their problems with others, due to fear and shame. In addition, the cost of going to a psychologist is also quite expensive and makes a person increasingly close to their problems alone. Therefore, it is important for every human being, especially adolescents, to know the condition of their mental health, because the condition of an individual's mental health greatly affects how he will live his life. Mood swings, hopelessness, lack of trust in anyone, indicate that one's mental state is not good. It will have an impact on other aspects such as education, social, and moral (Purnomosidi *et al*., 2023).

There are three types of mental disorders that most often occur in adolescents. Teenagers frequently suffer from mental illnesses that impact their thoughts, moods, emotions, and behaviour, such as anxiety, depression, bipolar disorder, and schizophrenia (Emilda *et al*., 2016; El-Sherbiny & Elsary, 2022). WHO described that anxiety and depression are the most common severe mental health disorders in adolescents, so mental health disorder is one of the biggest health challenges today (World Health Organization (WHO), 2021). Depression is regarded as the primary contributor to both the global burden of disease and disability (World Health Organization (WHO), 2020). Anxiety disorder, the prevalence of which is estimated at 15% and 20%, respectively (Zhou *et al*., 2019). Anxiety also often comorbid with other illnesses and causes significant disability (Alonso *et al*., 2018). The National Health Basic Survey in 2018 states that seven out of 1000 households have family members who have schizophrenia or psychosis. More than nineteen million people over fifteen years are affected by mental and emotional disorders, and more than twelve million people over fifteen are thought to have experienced depression (Ministry of Health Republic of Indonesia, 2018). More than 264 million people suffer from depression, including teenagers (Desouky *et al*., 2015). Half of all mental disorders begin at the age of 14 and are usually preceded by a non-specific psychosocial disorder that has the potential to develop into a significant mental disorder. These health conditions account for 45% of the global disease burden in the age range of 0-25 years (Colizzi *et al*., 2020). In Indonesia, 2.39% of Indonesian adolescents have attempted suicide at least once, with boys attempting 2.59% and girls attempting 2.20%. Meanwhile, 1.80% of boys and 1.16% of girls attempted suicide more than once as adolescents (Center for research and development of public health efforts, 2015).

As the center of the economy, 84.30% of people in Yogyakarta City work in trade, transportation, corporate services and individual services (Work Plan of Yogyakarta City, 2015). The education level of women is higher than that of men (Health Profile of Yogyakarta City, 2013). Social changes have caused many women to work to help fulfill the family's economic needs. This leads to less ability of parents to provide attention and togetherness (Andayani, 2014). Therefore, interpersonal stress that occurs in family relationships can increase the risk of depression in adolescents (Sheets & Craighead, 2014).

With 10%, the Special Region of Yogyakarta comes in second, and 6% of people over the age of 15 report having depression (Ministry of Health Republic of Indonesia, 2018). Warungboto, a city in Yogyakarta, has

seen four instances of severe mental problems. Anxiety and depression usually occur in adolescents who have poor health status. In addition, those who experience impaired functioning in the family, community, and school or work (Bandelow & Michaelis, 2015; Miranda-Mendizabal *et al*., 2019). Disasters, such as the COVID-19 pandemic, have a gradual and cumulative effect, posing numerous challenges for young people and their families, particularly in terms of mental health (Masten & Motti-Stefanidi, 2020).

The traumatic effects of the COVID-19 pandemic have resulted in an increase in psychological disorders or symptoms in children and adolescents, such as depression, anxiety, post-traumatic stress disorder (PTSD), and sleep disturbances (Golberstein *et al*., 2019). Depression and anxiety are prevalent in 34.5% and 41.7% of the participants, respectively; additionally, approximately 22.5% of the participants were terrified of COVID-19. Another study found that depression and anxiety symptoms ranged from 21.2% to 29.7% and 17.2% to 24.4%, respectively (Panda *et al*., 2021; Racine *et al*., 2021). Adolescents in low- and middle-income countries (LMICs) have experienced a greater incidence of anxiety, sadness, stress, and other mental health disorders during the COVID-19 pandemic. The combined prevalence (with 95% confidence intervals) of anxiety, depression, and stress was determined to be 43.69% (18.58–68.80%), 47.02% (31.72–62.32%), and 39.97% (30.53–49.40%), respectively. There was significant variation among the investigations. There were no studies that documented mental health interventions conducted within the community (Saha *et al*., 2023). Several factors that contribute to the exacerbation of these impacts include social isolation, excessive screen time and social media usage, parental stress, strained parent-child relationships, low socioeconomic position, and prior mental health disorders and/or impairments (Caffo *et al*., 2021). School closures and social restrictions have been shown to increase depressive symptoms and Anxiety among adolescents (Courtney *et al*., 2020; Loades *et al*., 2020). Of course, this uncertain condition may affect mental health in those vulnerable groups suffering from mental health issues, including adolescents (Panchal *et al*., 2021). This explains that during the pandemic many adolescents experience mental health disorders, such as depression, anxiety and sleep disorders. Therefore, this study aimed to assess the mental health status of adolescents during the early period of the pandemic.

METHOD

Study Design

The study design is descriptive quantitative with a cross-sectional study. This study design was chosen in accordance with the research objective, namely, to photograph the mental health status of adolescents at one time. The study was conducted in the Warungboto Village, City of Yogyakarta, at the start of the COVID-19 pandemic, around August-October 2020.

Participants

A total of 64 adolescents were taken by total sampling. As for the criteria for teenagers who were participants, they were aged 15-24 years and single. They are members of the Adolescent Information and Counseling Center of Haningwito since all the adolescents in this area are a member of Haningwito.

Instruments

The assessment of adolescents' mental health status used the Depression Anxiety and Stress Scale (DASS) and the Perceived Stress Scale (PSS). Researchers used the DASS because the scale has high validity and reliability, both in non-clinical and clinical samples and can be administered both individually and in groups. DASS can also describe a person's level of depression, anxiety and stress categories.

The questionnaire's contents are based on the Depression, Anxiety, and Stress Scale - 21 Items (DASS-21) and the Perceived Stress Scale (PSS-10). DASS-21 is a set of three self-report scales used to assess emotional states such as depression, anxiety, and stress. Each of the three DASS-21 scales has seven items divided into subscales with comparable content. Dysphoria, hopelessness, life devaluation, self-deprecation, lack of interest, anhedonia, and inertia are all evaluated using the depression scale. The autonomic arousal, musculoskeletal effects, situational anxiety, and the subjective perception of the effects of anxiety are all evaluated by the anxiety scale. The stress scale can detect persistent, non-specific levels of

arousal. It evaluates impatience, overpowering/ overreactive behaviour, anxiety, restlessness, and difficulty relaxing. The scores for the pertinent items are added to determine the scores for stress, anxiety, and depression. There are three categories of recommended limiting scores for containment labels: normal, moderate, and severe

Meanwhile, PSS-10 contains ten questions. Questions on this scale ask about the feelings and thoughts of the respondent during the past month. For each question, the respondent is asked to indicate how often the respondent feels or thinks a certain way. Categorization is based on the total score filled by the respondent. The PSS-10 category is divided into three types. First, a score ranging from 0 to 13 is considered low stress. Second, a score between 14 and 26 is considered moderate stress. Finally, a score of 27-40 indicates a high level of perceived stress. All primary data were analyzed univariately, including both DASS-21 and PSS-10 data, as follows:

DASS-21

DASS-21 is not a clinical instrument for diagnosing anxiety, stress and depression disorders. However, identify the level of the disorder based on the symptoms experienced by the individual. The answer choices for each question item include four types. First, it did not apply to me (score 0). Second, it applied to me to some extent, or at least some of the time (score 1). Third, it applied to me to a significant extent or for a significant portion of the time (score 2). Finally, it frequently or almost consistently applied to me (score 3). Then, in the data analysis, all the scores in each sub-scale (Depression, Anxiety, and Stress) were added up. Before interpreting the score, add the sum of the numbers in each sub-scale and multiply by two (DASS 21 is the shortened version of the scale). After that, look at the results of the categories in Table 1.

The results are indicative of whether one of the mental health problems has a significant effect on an individual's current life. If the person scores high on any of the issues, it means he or she needs further intervention to explore what can happen through conversation and thinking. Where necessary it may be advisable to obtain a referral to a specialist who can then conduct a clinical interview.

PSS-10

PSS-10 is appropriate for children aged 12 and up. The PSS questions inquire about feelings and thoughts from the previous month. Respondents were asked how frequently they had felt in a certain way in the previous month on a five-point scale ranging from 'never" to "very often' in each case. The answers are then scored as follows: never = 0, almost never = 1, sometimes = 2, quite frequently = 3, and very frequently = 4. The responses to the four items that tested positive (items 4, 5, 7, and 8) must then be reversed to calculate the total PSS score (i.e. 0→4; 1→3; 2→2; 3→1; 4→0). The PSS score is then calculated by adding all the items together. Higher scores indicate higher stress levels. The outcomes are classified into three levels. First, a score ranging from 0 to 13 is considered low stress. A score of 14-26 is considered moderate stress on the second level. A score of 27-40 will be considered high perceived stress at the third level.

Table 1. DASS Severity Ratings (Multiply summed scores by 2)

Severity	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

Data Analysis

The data was analysed using univariate tests to assess the frequency distribution of mental health levels. The data was classified based on the DASS-21 and PSS-10 questionnaires' level of mental health. This study used IBM SPSS Statistics version 20 as a data processing tool.

Ethical Clearance

On September 4, 2020, the Universitas Ahmad Dahlan Research Ethics Committee approved this research protocol, Number

012008035. Research explanations and consent from participants have been carried out before the study. This was an anonymous survey and participation was voluntary. All the data of participants were strictly kept confidential. Participant's willingness or inform consent was requested in writing through a questionnaire distributed via google form.

RESULT

The characteristics of participants are presented in frequency distribution and percentage. There is a consist of age, gender, education level, occupation, and the community that followed (Table 2). Men experience more stress than women and young people between 12-24 years of age are very susceptible to depression. The study shows that most of the respondents did not follow the community or organization as 56%.

Anxiety describes a brief period of nervousness or fear when experiencing difficult experiences resulting in displeasure, insecurity, insecurity, restlessness and tension. Table 3 shows that most participants indicated moderate and severe anxiety (26.6%) and 23 participants indicated not depressed (Table 4), also 40 adolescents not stressed (Table 5). Moreover, DASS-21 shows that most respondents indicated they were not depressed.

Table 2. Characteristics of Respondents (n=64)

Characteristics	Category	n	Per cent.
Sex	Boy	36	56
	Girl	28	44
Age	15-18 years old	25	39
	19-24 years old	39	61
Education Level	Elementary – Junior high school	2	3
	Senior – High Education	62	97
Job	Students	44	69
	Workers	20	31
A community followed by adolescent	Yes	32	50
	No	32	50

Table 3. Anxiety Levels of Respondent (n=64)

Variable	Category	n	Per cent.
Anxiety	Normal	14	21,9
	Mild	9	14,1
	Moderate	17	26,6
	Severe	7	10,9
	Very Severe	17	26,6

Table 4. Depression Levels of Respondents (n=64)

Variable	Category	n	Per cent.
Depression Levels	Normal	23	35,9
	Mild	15	23,4
	Moderate	13	20,3
	Severe	10	15,6
	Very Severe	3	4,7

This study also uses an instrument from the Perceived Stress Scale (PSS-10), to see the factors that cause stress (stressors) in participants. Most respondents in this study experienced stress, as many as 38 respondents (59%). Some of the respondents indicated that they were stressed. Also, severely stressed, as many as 27% of respondents felt severe stress (Table 6). This study shows that during the pandemic, adolescents experienced mental health disorders, including Anxiety, stress, and depression, with moderate to severe level.

Table 5. Stress Level of Respondent (n=64)

Variable	Category	N	Per cent.
Stress Level	Normal	40	62,5
	Mild	6	9,4
	Moderate	12	18,8
	Severe	4	6,3
	Very Severe	2	3,1

Table 6. Stress Level of Respondent Based on PSS-10 Questionnaire (n=64)

Variable	Category	N	Per cent.
Stress	Low Stress	9	14
	Moderate Stress	38	59
	High Stress	17	27

DISCUSSION

This study demonstrated the level of mental health among adolescents in Yogyakarta during the COVID-19 pandemic. The measurement tools used are DASS-21 and PSS-10, so that the types of mental health disorders detected include anxiety, stress, and depression and their levels. Of the 64 respondents studied 56% were male and students with an age range of 19-24 years. Respondent characteristic data is presented in frequency distribution and percentage. There is a consist of age, gender, education level, occupation, and the community that followed (Table 2).

The conditions of the COVID-19 pandemic are one of the factors that affect adolescent mental health. History records that pandemic conditions will have a negative impact on the psychological condition of the community, especially on children and adolescents who are generally more vulnerable to psychological problems (Akat & Karataş, 2020). This is because the immaturity of cognitive and emotional functions makes it difficult for them to understand the situation and express their emotions appropriately (Akat & Karataş, 2020).

Men experience more stress than women and young people between 12-24 years of age are very susceptible to depression. Depression at a young age is triggered by events related to personal problems and family conflicts (Wuon *et al*., 2016). It is not uncommon for students to experience stress due to their inability to adapt to existing school programs. Not a few students cannot face academic demands and perceive that these academic demands are a disturbance, so they are at risk of experiencing mental disorders (Barseli & Ifdil, 2017). Furthermore, the study shows that most of the respondents did not follow the community or organization as 56%. Individuals who do not follow organizations do not have hardy personalities because they lack experience in solving problems (problem-solving). So adolescents who do not participate in organizations/communities are very susceptible to mental health disorders (Wicaksono *et al*., 2016). Engaging in social activities or joining the community to help others is good stress management (Ministry of Health Republic of Indonesia, 2018).

Depression Anxiety and Stress Scale (DASS-21) is a valid and reliable questionnaire for screening or early detection of mental health. DASS is a twenty-one-item questionnaire related to depression, anxiety, and stress symptoms during the past week. This questionnaire is not a diagnostic aid but only a tool to determine the severity of stressful conditions. This study stated that most respondents indicated moderate and severe anxiety. Anxiety describes a brief period of nervousness or fear when experiencing difficult experiences resulting in displeasure, insecurity, insecurity, restlessness and tension. Anxiety, or what is commonly referred to as feeling anxious, is a feeling of unexplained fear that is very strong, followed by a physical sensation of pressure, restlessness, increased heart rate, sweaty palms, dizziness, and difficulty breathing. Adolescent age is an extensive range to experience Anxiety (Sarwono, 2012). Table

3 shows that most respondents indicated moderate and severe anxiety (26.6%) and 23 participants indicated that they were not depressed (Table 4), 40 adolescents not stressed (Table 5).

Furthermore, this study also uses a questionnaire instrument, Perceived Stress Scale (PSS-10), to see the factors that cause stress (stressors) in respondents. Perceived Stress Scale is a standardized questionnaire that can provide information about stress-causing conditions that can affect physical or pathological conditions and can be used to assess stress levels. Most respondents in this study experienced stress, as many as 38 respondents (59%). Some of the respondents indicated that they were stressed. Also, severely stressed, as much as 37% felt depressed (Table 6).

Stuart and Laraia stated that individual maturity would affect a person's coping ability. Individuals who are more mature or are adults have more difficulty experiencing Anxiety than those who are not yet ripe, namely adolescence. It is because mature age has a more extraordinary ability to adapt to anxiety (Vellyana *et al*., 2017). Anxiety is influenced by anxiety-supporting factors, which include both internal and external factors. Internal factors that help stress arise from within the individual himself, such as comparing body shape, comparing dress styles, perceiving an ideal body, and perception of ideal body weight. While external factors that support anxiety arise from outside the individual, such as other people comparing body shape, ridicule and criticism, and physically oriented mothers or parents (Kurniawati & Suarya, 2019).

Moreover, DASS-21 shows that the most respondents indicated not depressed. Depression is a mood disorder that causes people to feel sad all the time. Unlike ordinary sadness, which usually lasts a few days, feelings of sadness in depression can last weeks or even months (Ministry of Health Republic of Indonesia, 2018). Depression symptoms in adolescents are often characterized by irritability, fear, prolonged sadness, depression, lack of enthusiasm, conflict with friends and fighting with family (Rahmayanti & Rahmawati, 2018). In addition, the cause of depression in a person is due to disruption of brain function. They are associated with mood regulation, medications, medical indications, genetic susceptibility, and stressful life events. Adverse life events, one of which is the experience of being bullied, are also thought to be one of the factors that cause depression (Dianovinina, 2018).

Another type of mental health disorder identified in the DASS-21 is Stress, which is a condition in which a person is subjected to extreme emotional and mental strain. An anxious, restless, and irritable person is stressed. Stress can impact not only the sufferer's psychology but also their attitude and physical health (Ministry of Health Republic of Indonesia, 2018). However, stress does not always cause people to become insane, so they must be admitted to a mental hospital because stress has different levels. So, as long as the individual is still experiencing mild stress, he or she only thinks about it infrequently and attempts to solve the problems that cause stress. As a result, everyone may be stressed right now (Musradinur, 2016). Stress is felt when the balance in oneself is disturbed. It means that we can only experience stress when we perceive the pressure from the stressor beyond the endurance we have in dealing with the existing force. So if we consider ourselves to sustain the pressure, the stress risk is not accurate. However, if the pressure gets bigger, the risk of being exposed to stress becomes real (Musradinur, 2016). A stressor is a condition or stress factor (Wijaya *et al*., 2015).

Furthermore, this study also uses a questionnaire instrument, Perceived Stress Scale (PSS-10), to see the factors that cause stress (stressors) in respondents. This standardized questionnaire has a high level of validity and reliability. Perceived Stress Scale is a standardized questionnaire that can provide information about stress-causing conditions that can affect physical or pathological conditions and can be used to assess stress levels. Most respondents in this study experienced stress (59%) and 37% felt depressed. Problems related to parents are also often experienced by adolescents who experience depression or who still have the potential to experience depression. The treatment by harsh parents, limiting, and controlling is one of the disturbing problems in their life. Most adolescents who experience depression experience violence from their parents (Dianovinina, 2018).

This study shows that during the pandemic, adolescents experienced mental health disorders, including Anxiety, stress, and depression, with moderate to severe levels. To get a comprehensive and sustainable picture of adolescent mental health problems, it is necessary to carry out early detection regularly. On the other hand, a massive early detection program will result in enormous stigma, regardless of whether the youth is identified as a true positive or false positive "case." Positive screening has a more subtle effect on intra-family relationships. If a child tests positive, even if professionals are cautious about reporting the results, this event may be recorded in the family history. The incident may resurface much later, for example, as a teenager, when there is a conflict with parents. Another challenge is that many countries, including Indonesia, have a shortage of professionals capable of dealing with mental health problems among adolescents (Falissard, 2016). Awareness is needed for each teenager to visit mental health services in the context of preventing and treating mental health problems. At least adolescents carry out early detection of mental health routinely.

The limitations of this study were unable to find trigger factors for respondents with these mental health disorders, so it was suspected that social restrictions and school closures or perhaps pressure from parents were triggers of mental health problems in adolescents. When they also experience anxiety about threats to their health and work or family income, they are already at a higher risk of developing mental health problems than adults (Deighton *et al.*, 2019). Adolescents' behavioural manifestations of anxiety include clinginess, distraction, fear of asking about the pandemic, and irritability (Jiao *et al.*, 2020). Afterwards, this study cannot describe the causes of adolescents experiencing anxiety, stress, and depression in detail. The questions asked to respondents were limited to the symptoms of the mental health disorder. interpretation of the respondent's answer has been determined theoretically. Therefore, if a more in-depth study is needed regarding the factors that cause mental health disorders, further study can conduct a qualitative study.

This study uses two standard questionnaires to provide a descriptive picture of adolescent mental health during the pandemic. As a result, this study cannot establish statistical causal correlations or delve into the factors that contribute to mental health illnesses in adolescents at various levels.

CONCLUSION

During the COVID-19 pandemic, adolescents in the urban area experienced mental health problems in the form of moderate and very severe anxiety.

SUGGESTION

Awareness of adolescents accessing mental health services to self-examine needs to be increased.

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CONFLICT OF INTEREST

The authors declare there is no conflict of interest.

DECLARATION OF ARTIFICIAL INTELLIGENCE (AI)

The authors acknowledge the use of Grammarly for language refinement in preparing this manuscript. All AI-generated content was rigorously reviewed, edited, and validated to ensure accuracy and originality. Full responsibility for the manuscript's final content rests with the authors.

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AUTHOR CONTRIBUTION

Authors Khoiriyah Isni, Winda Yulia Nurfatona, Khairan Nisa, Riris Diana Rachmayanti, Nurul Qomariyah, and Nur Hasmalawati performed data collection and did formal analysis, research handling, resource management, visualization, original draft composition, review, and editing, while a qualified statistician carried out statistical analysis and methodological assessment.

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