

INVESTIGATING THE ROOT CAUSES OF THE RISING MENTAL HEALTH ISSUES AMONG GENERATION Z**MENELISIK AKAR PENYEBAB PENINGKATAN KASUS GANGGUAN MENTAL PADA GENERASI Z**

Daffa Hegian Abiy Ahmed¹, Tias Sekar Sari², Rizqina Ritnaning Febriyanti³, Najwa Aulia Zahra⁴
Muhammadiyah University of Magelang^{1,2,3,4}

*davva604@gmail.com^{1,2,3,4}

**Corresponding Author*

ABSTRACT

This study aims to examine the root causes of the increase in cases of mental disorders in Generation Z, a demographic group born between 1997 and 2012, and known to be very familiar with the digital world. Mental disorders are defined as health conditions that affect a person's thoughts, feelings, or responses, including anxiety, depression, and stress that can cause physical symptoms. Determinants of mental health include socioeconomic, biological, and environmental aspects. Compared to previous generations, Gen Z shows higher levels of stress, anxiety, and depression. This study uses a literature review method, analyzing and summarizing previous studies from trusted academic databases such as Google Scholar, Sinta, and Garuda with keywords such as "causes of mental disorders", "mental disorders of Gen Z", and "generation Z". The results of the analysis indicate that the increase in mental disorders in Gen Z is caused by several main factors, namely intensive digital media use and internet addiction, family environment and parenting styles, unhealthy living environments, and negative peer influence. In addition, socioeconomic status also contributes to mental vulnerability. Gen Z's increased awareness and openness in discussing mental health issues has also made these cases more visible and documented. The 2018 RISKESDAS data shows that the prevalence of mental health disorders in adolescents aged 15 and above reached 6.1%, equivalent to 11 million people in Indonesia. Globally, one in seven children aged 10 to 19 experiences a mental disorder, yet most do not receive adequate treatment. Therefore, a thorough understanding of these factors is crucial for developing effective prevention and treatment strategies.

Keywords: Generation Z, Mental Disorders, Digital Media, Family Environment, Socioeconomic Status, Youth Mental Health

ABSTRAK

Penelitian ini bertujuan untuk menelisik akar penyebab peningkatan kasus gangguan mental pada Generasi Z, sebuah kelompok demografi yang lahir antara tahun 1997 dan 2012, dan dikenal sangat akrab dengan dunia digital. Gangguan mental didefinisikan sebagai kondisi kesehatan yang mempengaruhi pemikiran, perasaan, atau respons seseorang, mencakup kecemasan, depresi, dan stres yang dapat menyebabkan gejala fisik. Faktor-faktor penentu kesehatan mental meliputi aspek sosial ekonomi, biologis, dan lingkungan. Dibandingkan generasi sebelumnya, Gen Z menunjukkan tingkat stres, kecemasan, dan depresi yang lebih tinggi. Penelitian ini menggunakan metode literature review, menganalisis dan merangkum studi-studi terdahulu dari database akademik terpercaya seperti Google Scholar, Sinta, dan Garuda dengan kata kunci seperti "penyebab gangguan mental", "gangguan mental gen Z", dan "generation Z". Hasil analisis menunjukkan bahwa peningkatan gangguan mental pada Gen Z disebabkan oleh beberapa faktor utama, yaitu penggunaan media digital yang intensif

dan adiksi internet, lingkungan keluarga dan pola asuh orang tua, lingkungan tempat tinggal yang tidak sehat, serta pengaruh teman sebaya yang buruk. Selain itu, status sosial ekonomi juga berkontribusi terhadap kerentanan mental. Peningkatan kesadaran dan keterbukaan Gen Z dalam membahas isu kesehatan mental juga membuat kasus-kasus ini lebih terlihat dan terdokumentasi. Data RISKESDAS 2018 menunjukkan prevalensi gangguan kesehatan mental pada remaja usia 15 tahun ke atas mencapai 6,1% atau setara 11 juta orang di Indonesia. Secara global, satu dari tujuh anak berusia 10 hingga 19 tahun mengalami gangguan mental, namun sebagian besar tidak menerima perawatan yang cukup. Oleh karena itu, pemahaman mendalam tentang faktor-faktor ini krusial untuk mengembangkan strategi pencegahan dan penanganan yang efektif.

Kata Kunci: *Generasi Z, Gangguan Mental, Media Digital, Lingkungan Keluarga, Status Sosial Ekonomi, Kesehatan Mental Remaja*

1. INTRODUCTION

A mental disorder is a mental health condition in which a person finds it difficult or even impossible to manage their thoughts, feelings, or responses and can include anxiety, depression, and life stress that causes sleep deprivation, headaches, or other physical symptoms. Mental health is determined by various socioeconomic, biological, and environmental factors (Deloitte, 2022; World Health Organization, 2017). Mental, behavioral, and neurodevelopmental disorders are syndromes characterized by clinically significant disturbances in an individual's cognition, emotion regulation, or behavior that reflect dysfunction in the psychological, biological, or developmental processes underlying mental and behavioral functioning. These disorders are usually associated with distress or impairment in personal, family, social, educational, occupational, or other important areas of functioning (ICD-11, 2022). According to Kartini Kartono, "mental disorders are forms of disturbance and disruption of mental function (mental health) caused by the failure of the adaptive mechanisms of mental or mental functions to respond to external stimuli and tensions, resulting in functional or structural disturbances in one part, one organ, or mental system."

Generation Z (Gen Z) is a demographic group that lived before Generation Alpha and after the millennial generation was born. According to Dimock (2019) from the Pew Research Center, Generation Z are those born between 1997 and 2012, a phase that marked more stable socioeconomic progress and rapid development of information technology. This generation is also known as the iGeneration because they are very familiar with the digital world (Hardey, 2007). This year, the oldest generation is 26 years old and the youngest is 11 years old. This means they are in the age range of early adolescence and early adulthood. Generation Z is a generation that has very high connectivity and dependence on technology. They are a generation born when personal computers have become an inseparable necessity of life. This generation cannot let go of the online and offline worlds, they are very dependent on the internet 24/7. According to Henderson (2023), there are at least seven characteristics of Generation Z that make them a digital native generation, namely being money-oriented and ambitious, enjoying adventure, being prone to anxiety, liking to set firm boundaries, being skilled online game players (gamers), liking nostalgia, and using social media in various ways.

According to Karl Menninger (Dewi, 2012), individuals with mental health are those who have the ability to restrain themselves, demonstrate intelligence, tolerance towards others, and have a happy attitude towards life. Furthermore, the World Health Organization (WHO) adds the term health as a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity (Amalia & Suryakencana, 2020), which is also stated in its slogan, "there is no health without mental health." This statement reinforces that a person's mental state is also included in the aspects of health that need to be considered and maintained in addition to the importance of physical health.

We chose this title because in recent years, various studies have shown a significant increase in mental health issues among Generation Z—an age group generally encompassing individuals born between the mid-1990s and early 2010s. Compared to previous generations, such as Millennials or Generation X, Gen Z is known to have higher levels of stress, anxiety, and depression. This phenomenon is not without cause, but is influenced by various interrelated factors. One of the main factors contributing to the rise in mental health issues among Gen Z is their extensive use of social media. While social media offers many benefits, such as ease of communication and access to information, it also has negative impacts. Gen Z often feels pressured by the seemingly perfect standard of living on platforms like Instagram or TikTok, triggering feelings of low self-esteem, envy, and self-dissatisfaction. Furthermore, cyberbullying and the pressure to consistently perform well online also add to their psychological burden.

The rapidly changing times have also impacted the mental health of Gen Z. They grew up in an era of technological disruption, climate change, global crises, and other uncertainties. This creates a sense of insecurity about the future and triggers deep concerns about the direction of their lives. Furthermore, because Gen Z tends to be more open about their feelings and mental health issues, these cases are more visible and documented than in previous generations. It's also worth noting that the rise in mental health issues among Gen Z may also be due to increased awareness and openness in discussing these issues. This generation is more likely to seek professional help, be open about their feelings, and actively advocate for the importance of psychological support. This is certainly positive, but it also demonstrates the seriousness and depth of the stress they experience.

The 2018 Basic Health Research (RISKESDAS) data shows that the prevalence of mental health disorders manifesting as symptoms such as depression and anxiety in adolescents aged 15 and above reached 6.1% of the total Indonesian population, equivalent to 11 million people. According to a sample registry conducted by the Health Research and Development Agency in 2016, there were 1,800 suicide cases per year, or 5 cases per day, of which 47.7% of suicide victims were children aged 10-39, who are teenagers and those of productive age. Globally, one in seven children aged 10 to 19 years (about 14%) experiences a mental disorder, including aggressive behavior, anxiety, and depression; the prevalence rate is around 10-20%, but unfortunately, most of those experiencing these conditions do not receive adequate treatment and support (WHO, 2019).

The World Health Organization (WHO) states that approximately 1 billion people worldwide suffer from mental health disorders, and every 40 seconds someone dies by suicide (Inggrid et al., 2020). Global Burden of Disease data (2020) also shows an increase, with 52 million cases of women experiencing anxiety disorders in 2020, and more than 35 million cases of major depression the previous year (Santomauro et al., 2021). According to data from the 2018 Basic Health Research, approximately 11 million people, or 9.8% of the Indonesian population, experience emotional mental health disorders or symptoms of anxiety or depression, and 6.2% of adolescents experience severe stress.

2. METHODS

This study used a literature review method, analyzing and summarizing various previous studies on the causes of the increase in mental disorders in Gen Z. This study focused on collecting and synthesizing information from research reports, journal articles, and other relevant academic sources. Several previous studies have used this method, for example, Monay et al., 2022; Muawanah & Muhid, 2021; Peristera & Wijono, 2021; and Sari et al., 2021. The study began by searching for relevant literature through trusted academic databases, such as Google Scholar, Sinta, and Garuda. Using specific keywords such as "causes of mental disorders," "mental disorders of Gen Z," or "generation Z" to conduct searches, we identified articles that examined the influence of digital minimalism on technology usage habits and efforts to prevent internet addiction in Generation Z. The subjects analyzed in this study are

articles and previous studies that discuss the impact of digital minimalism on technology use, as well as overcoming internet addiction in the context of Generation Z. This study filters relevant articles based on inclusion criteria, such as methodological quality, year of publication, and contribution to understanding related to the research topic.

The data collection method was carried out by collecting relevant articles, journals, and research reports from various academic sources. The collected data were obtained through a systematic search strategy in the various databases mentioned above. The instruments used in data collection were keyword-based searches in databases, as well as the use of filters to ensure the retrieved articles were relevant and had high scientific credibility. The data analysis method used was thematic analysis, in which researchers identified key themes that emerged from the collected literature. The analysis steps included categorizing key findings into several themes, such as the influence of digital minimalism on technology usage behavior, efforts to prevent internet addiction, and the positive and negative impacts of this approach on Generation Z. This analysis aims to identify significant patterns and evaluate the effectiveness of digital minimalism as an internet addiction prevention strategy. Through this method, this study is expected to provide new insights into the application of digital minimalism as a strategy to reduce the negative impacts of internet addiction, as well as offer more sustainable and relevant solutions in the context of Generation Z.

3. RESULTS

Table 1.
Analysis of articles on factors of mental disorders in generation Z

Researcher (year)	Title	Types of research	Subject	Results
Purnamasari, Fitri, Mardiana. (2023)	Factors Influencing Mental Disorders High School Teenagers' Emotions	Analytical survey research with cross-sectional survey research design	Senior High School 1 Sungaiselan 2022.	There is an influence of family and peer environmental factors on mental disorders. emotional in adolescents of SMA Negeri 1 Sungaiselan in 2022.
Reza1, Ananda, Ivanca, Fadilah, Jonathan. (2022)	Factors Affecting Mental Health of Adolescents in Batam City	Research methods <i>slamesho</i> w using techniques <i>purposive sampling</i>	200 respondents were teenagers aged 10-19 years and living in the Batam City area.	Parenting styles, environmental health, and social conditions significantly influence the mental health of adolescents in Batam City. Based on the results of this study, it is hoped that the government will pay attention to addressing adolescent mental health issues in Batam City by addressing the factors that influence mental health.

Researcher (year)	Title	Types of research	Subject	Results
Haniyah, Novita, Ruliani.	The Relationship Between Parenting Styles, Peers, Living Environment and Socioeconomic Factors with Adolescent Mental Health	Descriptive research with research design <i>cross-sectional</i>	This research was conducted at SMKN 62 South Jakarta with a population of 178 10th grade students.	The results of the frequency distribution of respondents based on mental health showed that 11 respondents (9.1%) were normal and 110 respondents (90.9%) were identified as having mental health.
Nisa, Fitriani	Digital Minimalism: A New Paradigm for Addiction Prevention Internet in Generation Z	This research uses the literature review method. with a qualitative approach	Generation Z	the importance of a digital minimalism approach in facing the challenges of using technology in the digital era, especially for Generation Z who are vulnerable to internet addiction.
Abas, Boekoesoe, Tarigan. (2023)	Analysis of Determinants of Emotional Mental Health Disorders in Adolescents at SMA Negeri 1 Limboto	Observational analysis research through an approach <i>cross sectional</i>	289 respondents were students of Limboto 1 State Senior High School.	From the research results, it was found that gender factors (p-value=0.001), parenting patterns (p-value=0.000), parental marital status (p-value=0.03) and history of bullying (p-value=0.013) were factors that were significantly and meaningfully related to adolescent mental health disorders based on the results of the chi-square test with a p-value (<0.05).

4. DISCUSSION

4.1. Mental Health

Adolescent mental health is known as a state of psychological and emotional well-being for an individual adolescent. It encompasses the state of thoughts, feelings, and behaviors that enable adolescents to cope with stress, handle the pressures of daily life, interact positively with their surroundings, and contribute productively to society. Adolescent mental health encompasses more than the absence of mental disorders, but also the ability to develop healthy relationships, understand and manage emotions, and confidently pursue personal potential. It also involves an understanding of self-identity, acceptance of the changes that occur during puberty, and the ability to respond adaptively to stresses and challenges.

Maintaining adolescent mental health is crucial because adolescence is often a period of vulnerability to various stresses and changes that can impact psychological well-being. According to Blakeslee et al., 2021, analysis of adolescent mental health highlights the complexity and diversity of challenges faced by young people in maintaining their psychological well-being. Risk factors, such as academic pressure, bullying experiences, and family conflict, are identified, along with protective factors, including social support and positive engagement in activities. Behavioral patterns and habits, such as sleep patterns, physical activity, and substance use, are analyzed to evaluate their impact on mental health. Evaluation of the social environment provides insight into the level of support adolescents receive from various sources, as well as the social pressures that may impact their mental health.

4.2. Parenting Factors

Indonesia ranks fourth in the world for mental health and anxiety disorders. This issue requires attention because mental health disorders can worsen if the underlying cause is not addressed promptly. This study examined how parents care for their children significantly impacts their mental health. Hoskins found that democratic parents showed high levels of caring during childhood, which declined slightly as children entered adolescence. These findings align with research showing that democratic parenting has a significant impact on adolescent mental health. Mental health problems in adolescents increased as democratic parenting decreased.

The percentage of people experiencing mental disorders is still quite high due to unhealthy and substandard environments, as well as poor parental care. This is because slum environments make them feel unsafe, uncomfortable, and unfit for habitation. As a result, they experience stress, anxiety, panic, and depression. Therefore, it can be said that a person's environment can influence their mental health. The results of this study indicate that environmental health influences the mental health of adolescents in Batam City. This is in line with the findings of Zainal et al., Barners et al., and Liddell & Guiney, who found that environmental health conditions impact anxiety and depression, which are associated with mental health. If this condition persists, mental health problems can lead to job loss, difficulty paying for living expenses, and even homelessness. Ultimately, multiple losses can occur: mental health problems, poor housing conditions, and job loss.

Environmental health conditions are related to the socioeconomic conditions of the community. People with low socioeconomic status generally live in slums and unhealthy settlements. The image of slum settlements is closely related to uninhabitable settlement conditions, high density levels, and quality buildings with facilities and infrastructure that do not meet standards. The results of this study indicate that socioeconomic conditions have a significant influence on the mental health of adolescents in Batam City. These results are in line with research conducted by Andina and Evans, which states that groups at risk of experiencing mental health disorders include the poor. These results are also in line with research that a person's involvement in a social group can begin with educational level, and this social group can play a role in a person's mental health.

4.3. Digital Media Use Factors

The digital world has brought about a major transformation in human life, with the internet becoming an essential part of everyday life (Chandrika & Lovita, 2024; Harahap et al., 2023). The way humans interact with each other, not only in cyberspace but also in direct social life, has been transformed by the existence of the internet as a communication medium and source of information. The internet is now not only a tool for communication, but also a place for work, study, shopping, and even entertainment. Other researchers have presented data demonstrating this phenomenon, showing that the number of internet users has reached 5.4 billion people worldwide, indicating a very high level of internet penetration. In Indonesia, the

number of active internet users increased by 1.4% from the previous year (Sunu Setiawan Utama et al., 2024; Zulfahmi & Fuaddi, 2024). This shows that the internet has become an essential need for Indonesian society and has impacted various fields, such as education, work, and entertainment. In the field of education, the internet has changed the way students and college students access lessons. On the other hand, many people in the workforce now rely on the internet for remote work and digital collaboration (Muttaqin et al., 2021; Setyo et al., 2024).

Although the internet has many benefits, this phenomenon has also given rise to new problems, namely internet addiction, one of the negative effects of the advancement of digital technology. There is a term "internet addiction" which refers to a pattern of excessive internet use, which disrupts an individual's life balance physically, socially, and emotionally (Putri & Romli, 2021; Yuris, 2023). Generation Z, who are most vulnerable to digital addiction, sees this phenomenon increasing. This generation has begun to use technology and social media in their daily lives and spends 6 hours and 35 minutes every day on online activities. This indicates a high dependence on the internet (Budiarti et al., 2024; Irfan, 2024). Research shows that internet addiction, a contemporary psychosocial disorder, where individuals, especially members of Generation Z, are more likely to use the internet as a way to escape the stressful realities of life. The impact of excessive exposure to technology is increasingly worrying because it can cause various psychological problems such as social anxiety, decreased academic ability, and physical health disorders such as obesity due to lack of physical activity. Other studies show that internet addiction often leads to sleep disturbances, obesity, depression, and social isolation, which impact mental health (Fathin et al., 2021; Setyo et al., 2024).

4.4. Residential Environmental Factors

According to Ika Dharmayanti et al. (2018), more people live in poor neighborhoods than in good neighborhoods. The results of this study align with these findings. The conditions, situations, and circumstances surrounding the location where a person lives, works, raises a family, studies, and socializes are referred to as the residential environment. These conditions significantly impact the student's learning process and the appropriate learning environment for them. They also influence students' ability to pay attention, observe, and solve problems encountered by adolescents both at school and at home. Housing and mental health are always intertwined, as there are both positive and negative aspects. A good living environment will almost certainly have a positive impact on adolescents, while a poor living environment will almost certainly have a negative impact. The living environment has a significant impact on the lives of Gen Z, especially in their character development. It can also harm mental health if something negative happens in their environment, creating feelings of insecurity and discomfort when left behind. Gen Z experiences can cause anxiety, restlessness, fear, and sadness.

4.5. Peer Factors

While the role of parents and family is diminishing, peers are becoming a crucial part of the immediate environment. The number of Gen Zs with mental health issues and those with negative peer relationships continues to increase. This is because teens lack the social and emotional support of their peers. As a result, they are unable to control their emotions and struggle to resolve issues constructively when arguments arise. This situation can arise from unresolved issues, which is what is causing Gen Z's mental health to suffer.

Gen Z's social interactions with peers are heavily influenced. Many social skills are developed through social contact and friendships. Young people rely heavily on their homes, and their world revolves around education. During adolescence, children develop attachments to people outside their families, such as teachers, friends' parents, athletes, and others. Gen Z strives to become independent from their parents due to the influence of their classmates.

Problematic Gen Z friendships can arise from poor peer relationships. Gen Z who experience peer pressure, such as being excluded from a group or lacking a shared purpose, will withdraw. This can impact Gen Z's mental health due to hormonal fluctuations that alter mood. If a teenager provides moral, emotional, and social support to other teenagers, their friendships will thrive. Furthermore, Gen Z has the ability to control their negative desires. A Gen Z, for example, can actively resolve problems without talking to others during an argument.

4.6. Socioeconomic Factors

Research by Ika Dharmayanti et al. (2018) found that Indonesians with low socioeconomic status outnumber those with high socioeconomic status. Every individual's socioeconomic status is different. It is possible that a person's attitude toward certain things is determined by their socioeconomic status, as differences in socioeconomic status often lead to differences and inequalities in how people view the world. Conversely, individual and family income levels are strongly influenced by social influences, both in terms of profession and education. On the other hand, good social status can also result from strong economic conditions.

The negative behaviors of Gen Z are linked to parenting practices in low socioeconomic households. As a result, their children experience behavioral and mental disorders. Consequently, Gen Z living with their parents is more susceptible to mental illness because parents who experience financial stress or are unable to manage their finances are more likely to be unhappy and have family problems, which can lead to mental health problems for Gen Z.

5. CONCLUSION

This study shows that the increase in cases of mental disorders in Generation Z is influenced by various interrelated factors. These main factors include parental parenting styles, living conditions, peer influence, socioeconomic status, and excessive use of digital media. Authoritarian or inattentive parenting styles, unhealthy and slum environments, peer pressure, and low family economic conditions can trigger stress, anxiety, and even depression. Furthermore, high dependence on technology and social media also worsens Gen Z's mental health by creating social pressure, sleep disturbances, and social isolation. Although Generation Z tends to be more open about mental health issues and seeking professional help, the stress they face remains significant. Therefore, collaborative efforts are needed from families, communities, educational institutions, and the government to create a supportive environment for mental health, provide appropriate education, and provide access to affordable and effective psychological services.

6. REFERENCES

- Abas, Boekoesoe, Tarigan. (2023). Analisis Determinan Gangguan Kesehatan Mental Emosional Remaja di SMA Negeri Limboto. Health Information : Jurnal Penelitian. Vol 15 No 2. Diakses pada tanggal 10 Juli 2025. <https://myjurnal.poltekkes-kdi.ac.id/index.php/hijp/article/view/1302>
- Nisa, Fitriani. (2024). Digital Minimalism: Paradigma Baru Pencegahan Adiksi Internet pada Generasi Z. Jurnal Ilmiah Bimbingan Konseling Undiksha. Vol 15, No 03. Diakses pada tanggal 10 Juli 2025. <https://ejournal.undiksha.ac.id/index.php/JIBK/article/view/86021>
- Reza, Ananda, Ivanca, dkk. (2022). Faktor-faktor yang Mempengaruhi Kesehatan Mental Remaja di Kota Batam. Jurnal Sintak. Vol 01, No 01. Diakses pada tanggal 10 Juli 2025. <https://journal.iteba.ac.id/index.php/jurnalsintak/article/view/21/21>
- Haniyah, Novita, dkk. (2022). Hubungan Antara Pola Asuh Orangtua, Teman Sebaya, Lingkungan Tempat Tinggal dan Sosial Ekonomi Dengan Kesehatan Mental Remaja. Open Access

- Jakarta Journal of Health Sciences. Vol 01, No 07. Diakses pada tanggal 10 Juli 2025. <https://jakartajournals.net/index.php/oajjhs/article/view/51/38>
- Wandira, Fitriana, Agusdianita. (2024). Dampak Media Sosial Terhadap Karakter Gen Z. Prosiding Temu Ilmiah Nasional Guru XVI. Vol. 16, hal. 296-301. Diakses pada tanggal 10 Juli 2025. <https://conference.ut.ac.id/index.php/ting/article/download/5008/1970>
- Sari, Mandagi & Dwiyaniti. (2024). Analisis Gejala Emosional dan Gangguan Mental Emosional Pada Remaja Menurut Aspek Teman Sebaya. Hang Tuah Medical Journal. Vol. 21, No. 2. Diakses pada tanggal 10 Juli 2025. <https://www.m3yapindo.com/jurnal/1424/articles/65170>
- Shofiyyah, Komarudin, Muharram, dkk. (2024). Characteristics of Generation Z and Its Impact on Education: Challenges and Opportunities. Jurnal Pendidikan Tambusai. Vol 8, No. 1. Diakses pada tanggal 10 Juli 2025. <https://jptam.org/index.php/jptam/article/view/13298>
- Ardiyansyah, Tribakti, Suprpto, dkk. (2023). KESEHATAN MENTAL. Padang: PT Global Eksekutif Teknologi. Hal 1-3.
- Thahir, Hajarini, Nasution, dkk. (2023). Kesehatan Mental di Era Generasi Z Dalam Studi Kasus SMP Negeri 36 Medan. Jurnal Media Akademik. Vol 1, No 1. Diakses pada tanggal 10 Juli 2025. <https://jurnal.mediaakademik.com/index.php/jma/article/view/18>