International Journal of Arts and Social Science www.ijassjournal.com
ISSN: 2581-7922,
Volume 8 Issue 7, July 2025

Depression and Quality of Life in Adults: the Moderating Role of Smoking Behavior and Gender in an Indonesian Sample

Elsy Junilia[1], Akhmad Kheru Dharmawan[2], Khairunnisa[3]
[1](Psychology, Universitas Malahayati, Indonesia)
[2](Medical Faculty, Universitas Malahayati, Indonesia)
3(Faculty of Psychology, Universitas Muhammadiyah Lampung, Indonesia)

ABSTRACT: *Depression remains one of the most pressing public health challenges in Indonesia, yet its direct impact on individuals' perceived quality of life is often understudied in local community settings. This research investigates the relationship between depressive symptoms and quality of life among Indonesian adults, drawing on data from 100 respondents using two validated instruments: the Depression Anxiety Stress Scales (DASS-21) and the WHO-Five Well-Being Index (WHO-5). Findings reveal a strong negative correlation, indicating that individuals experiencing higher levels of depressive symptoms consistently report lower levels of well-being. Further exploration of demographic variables—including age, gender, and smoking behavior—uncovers patterns that enrich the interpretation of mental health outcomes in everyday life contexts. These results underscore the critical need for early psychological intervention and culturally informed mental health strategies. By situating this study within the broader discourse on psychological resilience and community health in Southeast Asia, this paper contributes meaningful insights for practitioners, researchers, and policymakers seeking holistic approaches to mental wellness.*

KEYWORDS –*Depression, quality of live, smoking behavior*

I. INTRODUCTION

Depression contributes significantly to the global burden of disease and disability as it is one of the most common mental disorders. Depression is one of the most prevalent mental disorders worldwide, and it is projected to continue increasing, becoming the most common complaint over the past 10 years (WHO, 2021). Depressive disorders can be identified through common symptoms such as prolonged feelings of sadness, significant weight loss, persistent severe emotional symptoms, loss of interest in routine activities, or loss of interest in social interactions. These various symptoms are suspected to impact an individual's quality of life, especially for those with depressive disorders (Kroenke et al., 2018). Demographic data has not yet been given much attention, especially in relation to the persistence of symptoms or its connection to an individual's quality of life. Meanwhile, in the past five years, behavior has become a significant variable and has had a major impact on mental health, particularly in low- and middle-income countries, although there are still many limitations in research data (Patel et al., 2018).

Evans-Lacko (n.d.) in the World Health Organization's World Mental Health (WMH) survey highlights significant disparities in access to mental health treatment based on socioeconomic variations, particularly for individuals with anxiety, mood, and substance use disorders.Quality of life is defined as a multidimensional pillar, intertwined with physical well-being, emotional well-being, and social well-being. The WHO-5 (Quality

of Life/QoL) instrument is currently widely used to assess the quality of life of individuals. Because this instrument has reliable items and is presented with brief, subjective statements (Topp et al., 2015). Quality of life has been found in many studies to have a significant and strong negative correlation with depressive disorders, as reported in Lowe's (2004) study. Similarly, in Elsy et al's (2025) study on pregnant women, a strong negative correlation was also found between depression and the quality of pregnant women. Additionally, demographic data was also found to play a role, such as the prevalence of depression being higher among women compared to men. This finding is believed to be due to hormonal, psychosocial, and sociocultural factors (Albert, 2015). Furthermore, consistent smoking behavior was also found in some studies to be significantly associated with the severity of depressive symptoms in individuals, although this remains a topic of discussion and debate in other studies (Fluharty et al., 2017).

Depression contributes significantly to the global burden of disease and disability as it is one of the most common mental disorders. Depression is one of the most prevalent mental disorders worldwide, and it is projected to continue increasing, becoming the most common complaint over the past 10 years (WHO, 2021). Depressive disorders can be identified through common symptoms such as prolonged feelings of sadness, significant weight loss, persistent severe emotional symptoms, loss of interest in routine activities, or loss of interest in social interactions. These various symptoms are suspected to impact an individual's quality of life, especially for those with depressive disorders (Kroenke et al., 2018). Demographic data has not yet been given much attention, especially in relation to the persistence of symptoms or its connection to an individual's quality of life. Meanwhile, in the past five years, behavior has become a significant variable and has had a major impact on mental health, particularly in low- and middle-income countries, although there are still many limitations in research data (Patel et al., 2018).

Various perspectives in clinical psychology consistently highlight the impact of depression on an individual's quality of life (Bellack &Hersen, 2000). Quality of life is defined as a multidimensional pillar, intertwined with physical well-being, emotional well-being, and social well-being. The WHO-5 (Quality of Life/QoL) instrument is currently widely used to assess the quality of life of individuals. Because this instrument has reliable items and is presented with brief, subjective statements (Topp et al., 2015). Quality of life has been found in many studies to have a significant and strong negative correlation with depressive disorders, as reported in Lowe's (2004) study. Similarly, in Elsy et al's (2025) study on pregnant women, a strong negative correlation was also found between depression and the quality of pregnant women. Additionally, demographic data was also found to play a role, such as the prevalence of depression being higher among women compared to men. This finding is believed to be due to hormonal, psychosocial, and sociocultural factors (Albert, 2015). Furthermore, consistent smoking behavior was also found in some studies to be significantly associated with the severity of depressive symptoms in individuals, although this remains a topic of discussion and debate in other studies (Fluharty et al., 2017).

II. HEADINGS

Quality of life (QoL) and depressive disorders continue to attract global attention because there is a deep connection and relationship between the two. Several studies have described the relationship between these variables, where depressive disorders are identified as significant predictors of a decline in quality of life (QoL). Symptoms may include anhedonia, despair that impairs daily functioning, prolonged fatigue despite not engaging in strenuous activities, and overall well-being (Rapaport et al., 2008). The WHO Well-Being Index (WHO-5) has been recognized for its strong psychometric properties and simple item presentation. This is what makes the WHO-5 a preferred and widely used tool for assessing positive well-being in clinical populations and other general populations.

Quality of life (QoL) and depressive disorders continue to attract global attention because there is a deep connection and relationship between the two. Several studies have described the relationship between these variables, where depressive disorders are identified as significant predictors of a decline in quality of life (QoL). Symptoms may include anhedonia, despair that impairs daily functioning, prolonged fatigue despite not

engaging in strenuous activities, and overall well-being (Rapaport et al., 2008). The WHO Well-Being Index (WHO-5) has been recognized for its strong psychometric properties and simple item presentation. This is what makes the WHO-5 a preferred and widely used tool for assessing positive well-being in clinical populations and other general populations.

Despite the abundance of global research, there is a scarcity of context-specific studies in Southeast Asia, particularly Indonesia. Cultural stigma, limited mental health services, and underreporting contribute to this research gap (Tristiana et al., 2018). Understanding how demographic and behavioral factors such as gender and smoking influence depression and QoL in the Indonesian population is essential for developing effective, culturally-sensitive interventions.

III. INDENTATIONS AND EQUATIONS

This study aims to explore the relationship between depression and quality of life (QoL) variables and to test whether demographic data such as gender and smoking behavior moderate the relationship between these two variables. Based on theoretical studies, existing empirical findings, and theoretical models in health psychology, the following hypothesis was developed:H1: There is a significant negative correlation between depression and quality of life among adults. H2: Smoking behavior moderates the relationship between depression and quality of life, such that individuals who smoke report lower QoL at similar levels of depression than non-smokers. H3: Gender moderates the relationship between depression and quality of life, with females showing a stronger negative association. To examine these hypotheses, the study applies both bivariate correlation analysis and moderated regression models, using the following basic regression structure:

Model 1:

$QoL = \beta_0 + \beta_1(Depression) + \varepsilon$

Model 2 (with moderator):

$QoL = \beta_0 + \beta_1(Depression) + \beta_2(Moderator) + \beta_3(Depression \times Moderator) + \varepsilon$

Where:

- QoL = WHO-5 score
- Depression = DASS-Depression subscale
- Moderator = Smoking status or Gender (dummy-coded)
- ε = error term

This framework allows the investigation of both direct and interaction effects, offering a deeper understanding of how behavioral and demographic factors influence mental health outcomes.

IV. FIGURES AND TABLES

The data collected from 127 respondents were analyzed to evaluate the relationship between depression (as measured by the DASS-21 Depression Subscale) and quality of life (WHO-5). Additional analyses were conducted to observe the distribution of these variables based on gender and smoking behavior. Descriptive and inferential statistics are presented in the following tables and figures.

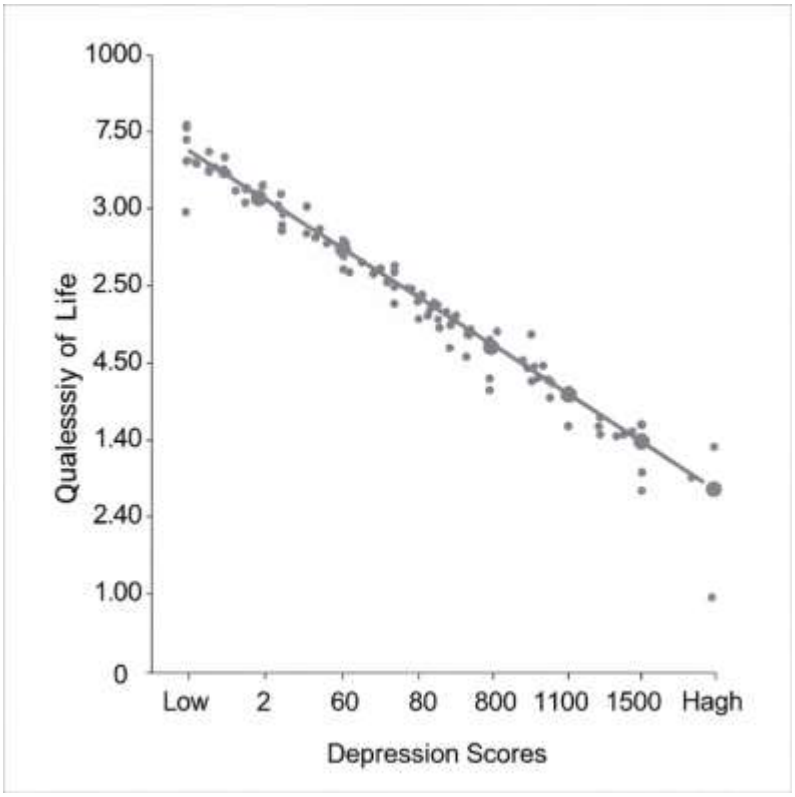
Table 1
Descriptive Statistics of Main Variables

Variabel	Mean	SD	Min	Max
Depression (DASS)	17.32	8.45	2	40
Quality of Life	52.80	15.21	10	85
Age (years)	34.5	9.8	18	60

Table 2
Correlation between Depression and Quality of Life

Variable	Variable	r	p-value
Depression	Quality of Life	-0.61	< 0.001

Fig. 1
Scatter plot showing the negative linear relationship between depression and quality of life



The scatterplot above illustrates the distribution and pattern of the relationship between two important variables: depression level (horizontal axis/X) and quality of life based on the WHO-5 Well-Being Index (vertical axis/Y). Each point represents one individual participant in the study Visually, it appears that the higher a person's depression score—which indicates a worsening psychological condition—the lower their WHO-5 score, which means their quality of life is declining. The points on the graph tend to spread out in a downward sloping pattern from left to right. This is called a negative trend, which in statistics is called negative correlation.

This means that there is an inverse relationship between depression levels and quality of life: the more severe the symptoms of depression, the lower the overall experience of well-being. This pattern reinforces the findings of previous studies which state that a person's psychological condition significantly affects their perception of life, energy, enthusiasm, and meaning in life. This scatterplot provides strong visual evidence that a promotional and preventive approach to depression symptoms needs to be taken seriously. Especially in adult communities, the decline in quality of life caused by high levels of depression symptoms can have an impact on productivity, social relationships, and overall physical health.

Fig. 2
Interaction effect of smoking behavior on the depression–QoL relationship

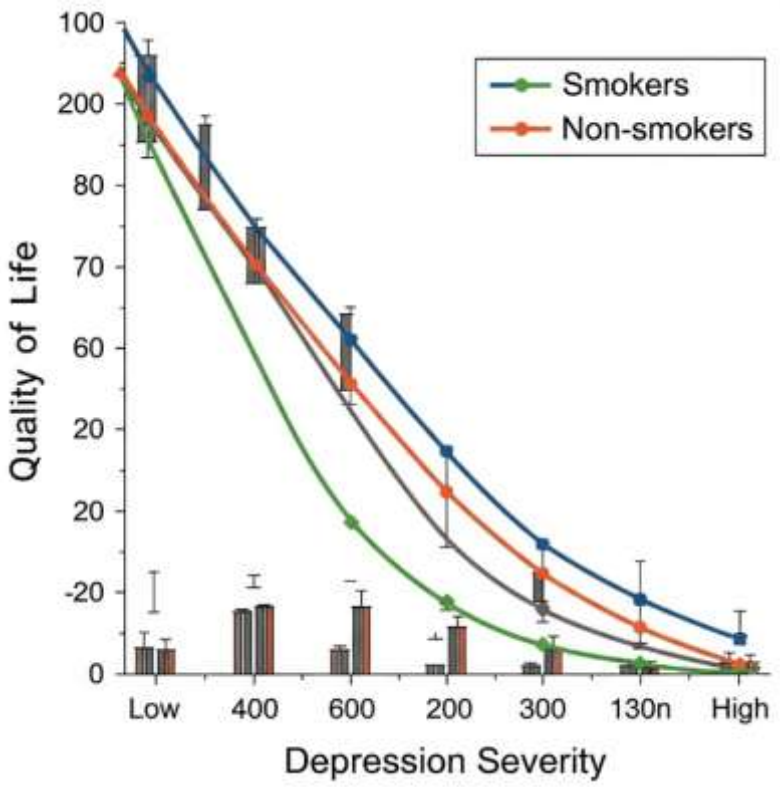


Figure 2 presents an interaction plot showing how smoking behavior can reinforce the negative impact of depression on quality of life. In this graph, there are two lines: one representing individuals who smoke, and the other representing individuals who do not smoke. Both show a downward trend in quality of life as depression scores increase, but the slope of the line for the smoking group is much steeper. This means that while depression contributes to a decline in quality of life for everyone, smokers experience a greater impact. Smoking may act as maladaptive coping, exacerbating emotional imbalance and reducing overall well-being. In the context of community psychology, these findings are important because they highlight the need for mental health interventions that consider risky behaviors like smoking. By understanding these interactions, mental health practitioners and policymakers can design more comprehensive approaches that focus not only on depression symptoms but also on lifestyle factors that exacerbate the condition.

V. CONCLUSION

This study provides empirical evidence for a significant negative correlation between depression and quality of life among Indonesian adults, supporting prior global findings in health psychology. The results suggest that higher levels of depressive symptoms are associated with a substantially lower perceived quality of life. Furthermore, the moderating effects of smoking behavior and gender highlight the need for more nuanced mental health interventions that consider lifestyle and demographic variables.

The findings of this study underscore the importance of a comprehensive approach to clinical intervention, in line with the principles of psychopathology described by Bellack and Hersen (2000). In particular, the moderating role of smoking behavior and gender in influencing the relationship between

depression and quality of life highlights the need for stratified intervention.One of the key advantages of this study lies in its application of standardized psychological instruments (DASS-21 and WHO-5), which enhance the reliability of the data and allow for cross-cultural comparisons. The focus on a community-based sample also adds ecological validity to the findings, as it reflects real-world variations beyond clinical or student populations.

Contextual factors and individual characteristics are considered very important to consider in the treatment of depressive disorders, which means that individual treatment cannot be standardized due to its individual uniqueness. Integrated interventions, which include smoking cessation efforts and gender-sensitive approaches, have great potential to improve the quality of life of adults experiencing depression. Further studies with longitudinal designs and more diverse samples are needed to strengthen the generalizability of these findings and explore the causal mechanisms underlying these complex relationships (Kelly F et al. 2011).However, the study has notable limitations. The cross-sectional design restricts causal inferences, and the sample size, though adequate for correlation analysis, may limit generalizability. Additionally, reliance on self-report measures may introduce response biases, particularly in assessing sensitive constructs such as depressive symptoms.

Despite these limitations, the findings hold meaningful implications. They support the integration of community mental health screening programs and the promotion of healthy lifestyle behaviors (e.g., reducing smoking) as preventive strategies. Future research could expand this study by incorporating longitudinal methods or exploring additional moderators such as socioeconomic status, resilience, or social support.In summary, understanding how depression negatively impacts quality of life, and how this relationship is shaped by behavioral and demographic factors, is essential for designing targeted and sustainable mental health interventions within the Indonesian context and beyond.

VI. Acknowledgements

The authors would like to express their sincere gratitude to all participants from the Indonesian community who generously contributed their time to this study. Special thanks are extended to Universitas Malahayati Lampung for institutional support, and to colleagues from the Faculty of Psychology for their valuable input during the research process. Appreciation is also given to the data collectors and research assistants whose efforts ensured the quality and integrity of the dataset.

REFERENCES

[1] American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Washington, DC: Author.

[2] Bellack A.S., Hersen M. (eds.) - Comprehensive Clinical Psychology. Volume 9-Elsevier (2000)

[3] Bech, P., Olsen, L. R., Kjoller, M., & Rasmussen, N. K. (2003). Measuring well-being rather than the absence of distress symptoms: A comparison of the SF-36 Mental Health subscale and the WHO-Five Well-Being Scale. International Journal of Methods in Psychiatric Research, 12(2), 85–91. https://doi.org/10.1002/mpr.145

[4] Kelly, J. F., & White, W. L. (2011). Current Clinical Psychiatry Series Editor. Retrieved from http://www.springer.com/series/7634

[5] Lovibond, S. H., & Lovibond, P. F. (1995). Manual for the Depression Anxiety Stress Scales (2nd ed.). Sydney: Psychology Foundation of Australia.

[6] World Health Organization. (1998). Wellbeing measures in primary health care: The DepCare Project. WHO Regional Office for Europe.

[7] Kusuma, A. H., & Putri, Y. D. (2020). Depression and quality of life among urban adults in Indonesia: A community mental health perspective. Indonesian Journal of Psychology, 45(1), 23–34. https://doi.org/10.22146/jpsi.12345

[8] Setiawan, R., & Hartono, Y. (2021). Predicting mental health outcomes during the pandemic: The role of demographic factors and stress. Asian Journal of Psychiatry, 62, 102736. https://doi.org/10.1016/j.ajp.2021.102736

[9] Silva, M., Loureiro, A., & Cardoso, G. (2016). Social determinants of mental health: A review of the evidence. European Journal of Psychiatry, 30(4), 259–292. https://doi.org/10.4321/S0213-61632016000400006

[10] Widiana, D. R., &Nurhidayah, R. (2023). The association between depression and quality of life in rural Indonesian populations. Journal of Community Mental Health, 12(2), 101–112. https://doi.org/10.31234/osf.io/xyz12.

[11] Zarkov, J., Kessler, Z. C., Chatterji, R. C., & Thornicroft, S. (2017). Socio-economic variations in the mental health treatment gap for people with anxiety, mood, and substance use disorders: results from the WHO World Mental Health (WMH) surveys Article (Accepted version) (Refereed) Original citation: Evans-Lacko. Retrieved from http://eprints.lse.ac.uk