

Proceeding Paper

The Role of Biopsychosocial Factors on Elderly Depression in Indonesia: Data Analysis of the Indonesian Family Life Survey Wave 5[†]

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Abstract: Many factors trigger depression in the elderly; therefore, the role of biopsychosocial factors is considered a holistic study that is interrelated. We examined the relationship between sex, marital status, attachment, affect, religiosity, and social support with depression in the elderly using data from the Indonesian Family Life Survey wave 5 (n = 2.605). The results of the multivariate analysis with multiple logistic regression showed that mood and social support were significantly related with depression in the elderly. Elderly individuals, with a tendency for negative moods are 1.122 times at risk of becoming depressed, and the elderly who lack social support are 0.763 times at risk of becoming depressed. From a policy perspective, these results call for important attention to social support in the community for the maintenance of mental health of the elderly.

Keywords: biopsychosocial; depression; elderly



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1. Introduction

The world's elderly population in the period 2015 to 2050 is predicted to increase from 12% to 22%. As a consequence of this, in addition to physical health problems, more than 20% of the elderly suffer from mental and neurological disorders. The most common mental disorder in this age group is depression, accounting for 7% of the world's elderly population. Mental health problems are poorly identified by health care professionals and the elderly themselves, and the stigma surrounding this condition discourages people from seeking help [1].

Indonesia's situation recorded an increase in the number of mental health disorders in the period 1990 to 2016. The measure of the burden of disease or Disability Adjusted Life Years (DALYs), calculated based on the sum of premature deaths and years of life with disabilities, recorded an increase in the ranking of psychological mental Depressive Disorders from rank 29 in 1990 to rank 19 in 2016 [2]. The overall calculation of DALYs for mental health disorders recorded an increase of 73.88% from 1990 to 2019 from position 16 to position 9 [3].

The biggest contributor to death in Indonesia in 2019 was cardiovascular disease (38.19%), followed by neoplasms, diabetes, digestive disease, respiratory infection, and tuberculosis. However, when viewed with disability conditions (YLDs), mental disorders (13.08%) ranked second, after musculoskeletal diseases [3]. According to the calculation of the burden of disease in 2017, several types of mental health disorders experienced by the Indonesian population included depression, anxiety, schizophrenia, bipolar, autistic behavior disorder, eating behavior disorder, intellectual disability, and Attention Deficit,

Hyperactivity Disorder (ADHD). The 1990–2017 range noted that depression was still the first ranked mental health disorder [4].

The Indonesian Basic Health Research (Riskesdas) in 2018 reported that depression could be experienced by all age groups, with a prevalence in the 15–24 age group recorded at 6.2%. The prevalence pattern increases with age, with the elderly group (>75 years) showing the highest prevalence at 8.9%, while in the 65–74 age group, the prevalence is 8.0%, and in those aged 55–64 years it is 6.5% [5].

Signs of depression in the elderly are often not visible but lead to a high-risk problems, if intervention is delayed. Appropriate preventive measures are needed to prevent mild depression from developing into major depression [6]. Depression in the elderly does not only cause problems for sufferers, but also for society. As a result, families lose a lot of time caring for individuals, and the elderly become an emotional and social burden, due to community stigma, resulting in economic losses due to loss of productivity [7].

National data records that the percentage population of elderly in Indonesia is 9.60%, or around 25.64 million people. The consequences of increasing the elderly population in the future have both positive and negative impacts. positive impacts can be seen if the elderly are in good health, are active, and productive. On the negative side, it becomes a burden if the elderly have health problems that result in increased health care costs, decreased income, and disability, due to physical and mental health disorders [4]. Therefore, depression as the most common mental health disorder in the elderly is the main focus of this study.

Previous research has stated that biological risk factors for depression include older age [8] and female gender [9]. Psychological risk factors that cause depression include mood [10]. Meanwhile, social risk factors that cause depression in the elderly are attachment [11], religiosity, and social support [12]. Based on this explanation, the question arises whether the same evidence occurs in the elderly in Indonesia? If the findings in Indonesia also corroborate previous research, it is hoped that it can become an advocacy material for policy makers regarding the importance of paying attention to biopsychosocial factors for the success of aging in Indonesia.

2. The Study Literature

2.1. Depression

The word Depression refers to Major Depressive Disorder (MDD) according to the code F32 on the ICD-X. MDD is defined by the American Psychological Association as a common and serious medical illness that negatively affects how you feel, think, and act. Depression causes feelings of sadness and/or loss of interest in activities you once enjoyed. It can cause a variety of emotional and physical problems, and can reduce the ability to function at work and at home. Meanwhile, according to the Guidelines for Classification and Diagnosis of Mental Disorders III, depression is a mood disorder characterized by the main symptoms of (1) depressive mood, (2) loss of interest and excitement, (3) loss of energy, characterized by rapid fatigue, and with symptoms of depression. Other symptoms include: reduced concentration or attention, reduced self-esteem or self-confidence, guilt or a sense of worthlessness, has a bleak and pessimistic view of the future, thoughts or actions of self-harm or suicide, disturbed sleep, and reduced appetite [13].

Mood fluctuations, in response to challenges in everyday life, are a common symptom of depression. However, when mood fluctuations persist with moderate or severe intensity, it can become a serious health condition. Individuals who experience such mood changes suffer greatly, and are unable to carry out daily activities according to their roles and functions. This condition, if prolonged, can lead to depression. During a depressive episode, the individual experiences a depressed mood (feeling sad, irritable, and empty) or a loss of pleasure and interest in activities, for most of the day, most days, for at least two weeks. Symptoms of depression vary from mild to severe and include:

1. Feeling sad or having a depressed mood.
2. Loss of interest or pleasure in activities you once enjoyed.

3. Changes in appetite (weight loss or gain not related to diet).
4. Difficulty sleeping or sleeping too much.
5. Loss of energy or increased fatigue.
6. Intentional increase in physical activity (e.g., inability to sit still, pacing, and wringing hands) or slowed movement or speech (these actions must be severe enough to be observable by others).
7. Feeling worthless or guilty.
8. Difficulty thinking, concentrating or making decisions.
9. Thoughts of death or suicide.

The criteria for the diagnosis of MDD are established when more than or equal to 5 symptoms have appeared for 2 weeks and must represent changes in the previous level of function. At least one of the symptoms must be depressed mood, or loss of interest or pleasure [13].

The severity of depression is said to be mild if the number of symptoms is slightly more than necessary to make a diagnosis, the intensity of the symptoms is sad but manageable, and the symptoms result in mild impairment in social or occupational functioning. It is said to be moderate if the number of symptoms, symptom intensity, and/or functional impairment is between those specified for “mild” and “severe”. It is said to be severe if the number of symptoms substantially exceeds those required to make a diagnosis, the intensity of the symptoms is severe, uncontrollable, and the symptoms significantly interfere with social and occupational functioning [13].

Signs of depression in the elderly are often invisible, and are often poorly identified by health care professionals and the elderly themselves, and can lead to high-risk medical emergencies, if intervention is delayed. In addition, the stigma surrounding this condition makes people reluctant to seek help [6].

2.2. Biopsychosocial Factors and Depression in the Elderly

Depression in the elderly or Late Life Depression (LLD) refers to Major Depressive Disorders (MDD) that occur in the elderly. Usually, older adults with depression do not report a depressed mood, but show less specific symptoms such as insomnia, anorexia, and fatigue. Older people sometimes overlook less severe depression as an acceptable response to life's stressors or a normal part of aging. Risk factors that contribute to LLD consist of biological factors such as genetics and psychosocial factors [11]. This approach that involves biological, psychological and social factors is called the biopsychosocial model. This approach is called holistic because it involves every dynamic entity with biological, psychological, and social components that are continuously interrelated and interacting.

Biological factors include the genetic material and processes by which individuals inherit traits from their parents. This includes the structure and function of a person's physiology, defects and allergies. The body consists of very complex physical systems. There are organs, bones, and nerves which are made up of tissues, cells, molecules, and atoms. The healthy, efficient and effective functioning of a system depends on the way these components operate and interact with each other [14].

Research has shown that older age is a risk factor for cognitive impairment [8], mental health [15], and quality of life [16]. Metabolic Syndrome is a biological factor that affects the health of the elderly, because several physiological functions are related to the mechanism of increasing age. Uniquely, female gender is one of the risk factors for depression in the elderly. Studies in Spain [9], Canada [17], and England [18] have shown that elderly women experience more psychological distress and depression than older men. Psychological distress and depression have a considerable impact on the social functioning of parents, and gender is a relevant predictor of psychological distress and depression.

The psychological factor involved in this research is mood. Some moods are positive or pleasurable, such as joy and affection, and others are negative, such as anger, fear, and sadness. Mood is related to health and illness in many ways. For example, people whose emotions are relatively positive are less prone to illness and more likely to maintain

their health and recover quickly from illness than people whose emotions are relatively negative [15].

One of the main social factors that influence depression is marital status. Research shows that married individuals have better mental health than those who are single, widowed, separated, and divorced. Being married is a protective factor for depression, whereas not being married is a significant risk factor for depression in later life [19]. Other studies have shown positive implications of marriage by increasing subject well-being, reducing loneliness, anger, chronic depressive symptoms, and stress. The moderating effect of partner support is an important factor in reducing depression among individuals and correlates with lower levels of loneliness. Marital role theory suggests that although women in marital bonds benefit economically, marriage is more socially and physiologically beneficial for men than women. One study reported that married men with functional limitations had lower depressive symptoms when they received care and assistance from their wives. However, such association was lost for women [20]. The unmarried and divorced elderly are more at risk of experiencing depression compared to the elderly who are married. Older people who are not married usually experience longer periods of loneliness, lack of social support, and lack of self-confidence, which may make them more prone to depression. Marital status affects the welfare of the elderly. The death of a spouse significantly changes the lifestyle and psychological state of the elderly, and is the reason why the risk of depression is higher in the elderly [21].

Attachment is an adaptive response related to parenting patterns that describe attachments in early life, and are considered to affect subsequent relationships. Attachment theory offers an important framework for understanding the etiology and development of depression throughout the ages. Insecure attachment is a risk factor for depression, illness, severity, and relapse. Longitudinal studies of children raised in orphanages have shown that insecure attachment during infancy increases the risk for depression in later life [14]. Attachment theory was first coined by John Bowlby (1907–1990). This theory explains how the relationship in early childhood acts as the prototype for all future social relationships. Any attachment disorders that occur during this period have very severe consequences. The beginning of a child's life is a critical period for developing a child's attachment to their caregiver. If at that age children experience events that cause disruption of attachment to their parents, such as neglectful behavior from parents, parental divorce, death, and separation, due to family conflicts, children's intelligence and aggressive behavior can be affected until adulthood [22].

Religiosity and spirituality are common phenomena in the life of the elderly. In the elderly population, seeking answers to the meaning of life through religiosity and spirituality provides a sense of well-being, reduces anxiety, helplessness, and increases resilience to problematic situations and difficulties associated with aging. Emotional and physical limitations make the elderly believe that illness is a process that they must go through, while increasing their understanding of the meaning of life and positive life experiences. Spirituality is considered a philosophical guide that is able to generate sympathy and behaviors such as hope, love, faith, as well as giving meaning to people's lives. Religiosity is the belief in a higher power with supernatural abilities to create and control the universe. Religiosity serves as a way of expressing individual spirituality based on values, beliefs, and ritual practices, thereby enabling the search for transcendence, self-reflection, and thoughts about existential relationships outside the objective world [23].

Social support supports humans living in a social world that involves relationships with other individuals such as family members, friends, or groups. When we interact with other people, we influence them, and they influence us. Social processes provide a strong motivation that can be used as an important predictor of future health. At a fairly broad level, society influences individual health by promoting certain cultural values such as being fit and healthy; however, individuals are also able to influence a larger social unit [15].

3. Materials and Methods

This study uses secondary data from the fifth edition of the Indonesia Family Life Survey (IFLS) taken by RAND Corp in 2014. The Indonesia Family Life Survey (IFLS) or the Indonesian Household Life Aspects Survey (SAKERTI) is the only longitudinal survey on a national scale for Indonesia. Data can be downloaded for free via <http://www.rand.org/labor/FLS/IFLS/> after registration accessed on 15 August 2021. All respondents provided written informed consent, and the IFLS was approved by the Institutional Review Boards at RAND(US) and at the University of Gadjah Mada [24].

The survey was conducted in 2014 on approximately 50,000 individuals from 15,900 households living in 13 provinces in Indonesia. The dataset contains detailed information on demographics, economics, labor, health, household spending, and public insurance data. Our cohort consisted of 2605 individuals aged 60 years and over in 2014. The measurement of the dependent variable of depression was taken from the questionnaire book 3B in the Mental Health section with 10 questions regarding the psychological health conditions experienced by the individual in the past week. The questions in IFLS 5 are included in the indicators of depressive symptoms from the Center for Epidemiological Studies of Depression (CESD-10). Respondents rated their feelings from 1 to 4, where 1 = Rarely or never (≤ 1 day); 2 = Several days (1–2 days); 3 = Sometimes (3–4 days); and 4 = Most of the time (5–7 days). The Center for Epidemiological Studies-Depression 10-item (CES-D-10) screening tool, first developed in 1994 by Andersen et al., evaluated the CES-D 10 test in elderly populations and found the cut off for the best score is > 10 , so that at the cutoff point > 10 , respondents are said to be depressed [25].

4. Results

The empirical results of our analysis can be seen in Tables 1–4.

Table 1. Characteristics of Respondents.

Characteristics of the Elderly		Total	Percentage
Age Group	60–74	2267	87.0
	75–90	331	12.7
	>90	7	0.3
Sex	Male	1321	50.7
	Female	1284	49.3
Marital Status	Married	1752	67.3
	Not Married	853	32.7

Table 2. Results of Bivariate Selection of Independent Variables with Dependent Variables.

Variable	Sig.
Sex	0.242
Marital Status	0.237
Mood	0.000
Attachment	0.198
Religiosity	0.005
Social support	0.103

Table 3. Initial Logistic Regression Model (Full Model).

Variable	B	Sig.	OR	95% CI
Sex	0.009	0.881	1.010	0.892–1.143
Marital status	−0.043	0.744	0.958	0.738–1.242
Attachment	−0.200	0.601	0.819	0.550–1.219
Mood	0.114	0.000	1.121	1.104–1.139
Religiosity	0.355	0.052	1.426	0.996–2.041
Social support	−0.272	0.019	0.762	0.607–0.957

Table 4. Final Results of Logistics Regression Modeling.

Variable	B	Sig.	OR	95% CI
Mood	0.115	0.000	1.122	1.105–1.139
Social support	−0.271	0.018	0.763	0.609–0.955

The elderly group in Indonesia is dominated by the age group 60–74 years. This finding shows that the 2014 data is still in accordance with the life expectancy in 2021, namely 69.67 years for men and 73.55 years for women [26].

The six independent variables were eligible for multivariate analysis (Sig. < 0.25).

One by one the variables with the largest *p*-values were excluded starting from sex, marital status, attachment, and religiosity by paying attention to changes in the Odd Ratio value, so that the final modeling was obtained, as shown in Table 4.

The results of multiple logistic regression analysis showed that mood and social support were significantly related to depression in the elderly. Elderly individuals with a tendency for negative moods are 1.122 times at risk of depression and the elderly who lack social support are 0.763 times at risk of becoming depressed.

5. Discussion

Positive Mood refers to positive emotions and expressions, including joy, pride, enthusiasm, and energy. Negative mood, on the other hand, is associated with negative emotions and expressions, including sadness, disgust, lethargy, fear, and depression. Positive and negative moods not only play a large role in everyday experiences and pleasures, but can also affect opinions, thoughts, performance, abilities, and even brain activity. Several previous studies corroborate the findings in this study. Research in Afghanistan revealed that negative mood or aggression is associated with mental distress [15]. Meanwhile, another study in Italy reported that there was a weak relationship between positive mood and subject well-being [10]. Temperament is a basic characteristic that is retained. Meta-analysis data show that in the temperament dimension, harm avoidance (behavioral inhibition) is associated with a greater risk of MDD. Behavioral inhibition is a temperament associated with a tendency to withdraw from unfamiliar social situations or environments. In contrast, positive emotions (positive mood, extraversion, and behavioral activation) decrease the risk of depression. Longitudinal research has shown that the capacity to experience positive emotions such as gratitude, interest, and love is a mechanism of psychological resilience to the risk of depression after trauma [14].

Behavior and mental processes are the focus of psychology involving cognition, emotion, and motivation. Cognition is a mental activity that includes perception, learning, remembering, thinking, interpreting, believing, and problem solving. Emotions are subjective feelings that affect, and are influenced by, thoughts, behaviors, and physiology. Emotions can also be important in people’s decision to seek treatment. People who are afraid to see a doctor may avoid getting the health care they need. Motivation is a process within an individual to initiate activity, choose its direction, and persist in it. A person who is motivated to live a healthy life is more likely to follow a physical exercise program, set goals to achieve, and persist. Another example is parents who quit smoking because they are motivated to protect their children’s health [15].

Social support is described as a collection of norms, networking, and trust that can increase efficiency in society. It refers to the relationships and norms that shape the quality and frequency of social interaction. The mechanisms by which social support affects health are complex, but it is generally believed that it can provide informal insurance against health risks, through cooperative norms or informal networks. The results of this study are in line with several previous studies which found that social support enables a better response to health problems, through reduced information costs and the distribution of health norms. The idea is that social support, through increased interaction with others, creates and develops social norms, environmental reciprocity, and social trust, which in turn encourages communication and cooperation among community members. Other

studies have also shown that social support has a positive relationship with the physical and mental health of the elderly in eastern Indonesia [27]. Research in Ireland has shown that lack of community involvement is associated with depression and anxiety in the elderly [28]. This is in line with another study in South Africa, which showed that elderly people who find it difficult to join the community are more likely to experience depression and lose interest [29].

6. Conclusions

The association of various biopsychosocial factors with depression in the elderly is well documented in the literature from western countries. However, there is different empirical evidence for countries in the east such as Indonesia. Aspects of attachment and religiosity, which are often significant in western countries, have no relationship with depression in Indonesia. In this paper we examine a range of biopsychosocial factors including attachment and religiosity. However, what does associate with depression in the elderly in Indonesia is mood and social support. This shows that aspects of religiosity and attachment tend to be homogeneous in Indonesia, while aspects of mood and social support are more heterogeneous according to the cultural diversity in Indonesia.

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