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RESEARCH

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Nuptiality of Ageing Population Affect the Mental Health: A Longitudinal Study

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Abstract

The phenomenon of increasing numbers of elderly people is a demographic challenge that has a wide impact, especially on their physical, mental, social and economic health. This study aims to trace changes in marital status and its relationship to the incidence of depression in the elderly in Indonesia. This study used secondary longitudinal data from the Indonesian Family Life Survey (IFLS) waves 4 and 5, with elderly respondents aged >60 years who had complete data on marital status, depression, and other covariates. The dependent variable is depression which assessed using the Centers for Epidemiologic Studies Depression Scale (CES-D 10). The main independent variable was changes in marital status, accompanied by control variables such as age, gender, place of residence, and religion. Data were analyzed in a wide format using univariate, bivariate (Chi-square and t-test), and binary logistic regression. The findings of this study showed that 9.07% of elderly people experienced depression at the time of the follow-up study. The changes in marital status, age, and place of residence were significantly related to depression, while gender and religion did not show a significant relationship. Elderly who changed their marital status from married to divorced/separated/widowed/widower had a lower risk of depression, higher age decreased the likelihood of depression, while living in rural areas increased the risk. Gender and religion were not significantly associated with the incidence of depression. Interventions such as psychosocial support and mental health-based programs that take into account factors such as changes in marital status, age, and place of residence are needed.

Keywords: Ageing Population, Depression, Elderly, Marital Status Change, Rural Residence.

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1. INTRODUCTION

Population ageing has emerged as a major demographic challenge globally, including in Indonesia, as a result of declining fertility rates and increasing life expectancy (Al Waroi et al., 2025). The rapid growth of the older population has profound implications across multiple domains, including physical health, mental well-being, social relationships, and economic security (Rony et al., 2024). As individuals age, they face a higher risk of chronic conditions and functional decline, yet mental health issues among older adults often receive insufficient attention compared to physical health concerns (Upasen et al., 2024).

Mental health problems among older adults represent a growing public health concern. In Indonesia, emotional mental disorders are reported more frequently among individuals aged 60 years and above compared to younger age groups (Badan Penelitian dan Pengembangan Kesehatan, 2019). Similar patterns have been observed in other Asian countries, where older adults living in rural areas and those with lower educational attainment experience a disproportionately higher burden of mental health disorders (Duan & Li, 2025). Depressive symptoms in later life, such as loneliness, helplessness, and a loss of meaning in life, are often underdiagnosed due to limited availability of geriatric mental health services and persistent social stigma surrounding mental illness. This situation underscores the need for stronger evidence to inform targeted prevention and intervention strategies for depression among older adults (Świtaj et al., 2025).

Within this context, marital status represents an important social determinant of mental health in older age. Marital status not only reflects social relationships but also serves as a key source of emotional, physical, and economic support for older adults (Dodds et al., 2024). Changes in marital status, including widowhood, divorce, or remarriage, constitute significant life-course transitions that may disrupt established social roles and support systems, thereby increasing vulnerability to psychological distress and depression in later life (Thodukayil et al., 2025; Zhang et al., 2024). Thus, nuptiality is closely linked to the psychological well-being and quality of life of older adults (Fergus et al., 2024).

Although numerous studies have examined the relationship between marital status and depression among older adults, findings remain inconsistent across countries and social contexts. These variations are often attributed to differences in cultural norms, family structures, and social support systems, suggesting that the mental health implications of marital status may not be universal. In Indonesia, empirical evidence on this topic remains limited, particularly studies employing longitudinal designs that allow for the examination of changes in marital status and mental health over time.

To address this gap, the present study utilizes data from the Indonesian Family Life Survey (IFLS), a nationally representative longitudinal dataset that follows the same households across survey waves. This study aims to examine the relationship between changes in marital status and the incidence of depression among older adults over a seven-year period, while controlling for key demographic factors including age, sex, place of residence, and religion. By adopting a longitudinal approach, this study seeks to provide a more comprehensive understanding of how marital transitions influence mental health in later life within the Indonesian context.

2. RESEARCH METHOD

This study used secondary longitudinal data from the Indonesian Family Life Survey (IFLS), which covered approximately 83% of the national population through stratified sampling techniques in 13 provinces. The analysis focused on IFLS waves 4 (2007) and 5 (2014–2015) and included individuals with complete data on marital status, depression, and other relevant covariates. Inclusion criteria included individuals aged 60 years or older who participated in both waves of the survey. Respondents who had missing data at either baseline

or follow-up were excluded from the analysis. Data were obtained from IFLS Books 3A, 3B, US, K, and T using the wide shape.

This current study used depression as the dependent variable. Psychological aspect using depression as the proxy. It was measured based on 10 statements related to mental health. There are including: I was bothered by things that usually don't bother me; I had trouble concentrating on what I was doing; I felt depressed; I felt everything I did was an effort; I felt hopeful about the future; I felt fearful; My sleep was restless; I was happy; I felt lonely; and I could not get going. Each statement has four categories of choices, including 0=rarely or none (≤ 1 day), 1=some days (1–2 days), 2=occasionally (3–4 days), and 3=most of the time (5–7 days). The scoring for each item is 3, 2, 1, 0 for questions 5 and 8 and the scoring is 0, 1, 2, 3 for other questions. The total score is calculated by summing each score of the 10 items. The scale was used to express the mental health problem as depression assessed using the Centers for Epidemiologic Studies Depression Scale (CES-D 10) question items. The possible range of the score is between 0 and 30, with the higher score implies more depressed. The measure will not be scored if more than 2 items are missing. In the analysis, the variable was coded 0 “not depressed” if the total score less than 10 and 1 “depressed” if total score equals to or higher than 10. Become depression means those who were not depression at the baseline and become depression at the follow-up study. The study focused on the new cases of depression, so those who remain depressed and no longer depressed were counted as “not become depression”.

The independent variables are including marital status changes. It was reshaping the categories into remain married in both waves, remain never married/divorced/separated in both waves, remain widowed in both waves, married and become separated/divorced/widowed, and divorced/separated/widowed and become married. Additionally, age of elderly is continuous variable, sex with male and female categories, place of residence with urban or rural, and religion with Islam as the majority and others. Except marital status changes and depression, all control variables were utilized from baseline data.

Longitudinal data in wide format were analyzed using univariate, bivariate, and multivariate approaches. Univariate analysis was conducted to describe the general characteristics of the research subjects using frequency distribution and percentage for categorical variables and mean and standard deviation for numeric variable. Bivariate analysis was conducted to evaluate the relationship between categorical independent variables and dependent variables using the Chi-square test, while age variables as continuous variables were analyzed using the t-test. Furthermore, multivariate analysis was conducted using the binary logistic regression method. The entire analysis process was carried out using STATA software version 18.0 with a significance level of 95%.

The IFLS is an open-access dataset available for academic research and public policy analysis, subject to appropriate citation and ethical use. IFLS data collection procedures underwent rigorous ethical review and were approved by the ethics committees of the RAND Corporation and partner institutions in Indonesia, including Survey METER, the Center for Population and Policy Studies at Universitas Gadjah Mada, and TNP2K, with support from the Poverty Reduction Support Facility and Australian Aid.

3. RESULTS AND DISCUSSION

The findings of this study consisted of univariate, bivariate, and multivariate. The univariate analysis was described in Table 1 below. It revealed that older persons become depression in follow-up study by 9.07%. According to their marital status, the highest proportion was older persons who remain married in both waves (50.36%), and following by remain widowed (30.14%). The mean aged was 67 years old with standard deviation was 5.44. More than half of them were female (57.28%), lived in rural area (55.02%). The majority of them were Muslim (88.87%).

Table 1. The general characteristics of the samples.

Predictors (n = 3.991)	Frequency	Percentage
Become depression		
No	3629	90.93
Yes	362	9.07
Marital status change		
Remain married	2010	50.36
Remain never married/divorced/separated	80	2.00
Remain widowed	1203	30.14
Married to separated/divorced/widowed	677	16.96
Divorced/separated/widowed to married	21	0.53
Age (mean and standard deviation)	67	5.44
Sex		
Male	1705	42.72
Female	2286	57.28
Place of residence		
Urban	1795	44.98
Rural	2196	55.02
Religion		
Islam	3547	88.87
others	444	11.13

The bivariate analysis using Chi-square and t-test revealed that marital status change, age, and place of residence have significant correlation with become depression. However, the predictors including sex and religion were found insignificantly associated with become depression.

Table 2. The bivariate analysis of correlation between predictors and become depression

Predictors	Become depression		Total	Chi-square value
	No	Yes		
Marital status change				12.7829*
Remain married	89.9	10.1	2.010	
Remain never married/divorced/separated	83.75	16.25	80	
Remain widowed	91.94	8.06	1.203	
Married to separated/divorced/widowed	93.06	6.94	677	
Divorced/separated/widowed to married	90.48	9.52	21	
Age (*t-test)				4.2547***
Sex				0.0226
Male	90.85	9.15	1.705	
Female	90.99	9.01	2.286	
Place of residence				10.1919**
Urban	92.53	7.47	1.795	
Rural	89.62	10.38	2.196	
Religion				2.9074
Islam	91.2	8.8	3.547	
others	88.74	11.26	444	

Note: ***p-value <0.001, **p-value<0.01, *p-value<0.05

The multivariate analysis of this study is presented in Table 3 below. It revealed that older persons who were married at the baseline study and become separated/divorced/widowed at the follow-up study decreased the probability of become depression by 35% compared to those who were married at both waves after adjusted to all independent variables. The analysis revealed that older adults who were married at baseline and transitioned to being separated, divorced, or widowed at follow-up exhibited a 35% lower probability of depression compared to those who remained married across both waves, after adjusting for all covariates. Although this finding contrasts with much of the existing literature, it may reflect unobserved selection processes, such as caregiving-related stress among those who remained married, or differential coping capacities, social support, and religiosity among individuals experiencing marital loss. These results therefore warrant cautious interpretation and highlight the need for further examination of potential selection bias and variable coding, including the specification of reference categories and marital status transitions in the IFLS data. Additionally, increasing the older person's age was decrease the odds of become depression by 5%. In terms of place of residence, compared to those lived in urban area, older person's residence in rural area is 1.50 more likely to become depression after adjusted to all predictors. However, sex and religion were insignificantly associated with become depression as $p\text{-value} > 0.05$.

The model produced an R^2 value of 0.0189, indicating that approximately 1.8% of the variance in depression among older adults is explained by the variables included in the analysis. This relatively low explanatory power is not unexpected in population-based mental health research, where depression is influenced by a complex interplay of psychosocial, biological, and environmental factors that are not fully captured in survey data. In this study, the focus on marital status transitions and selected sociodemographic covariates, together with the use of self-reported measures of depression, may have limited the proportion of variance explained, suggesting that unmeasured factors such as personality traits, caregiving burden, social networks, and life events likely play a substantial role.

Table 3. The binary logistic regression analysis of factors associated with become depression

Predictors	AOR	[95% conf. interval]	<i>p-value</i>
		Lower	Upper
Marital status change			
Remain married	<i>ref</i>		
Remain never married/divorced/separated	1.79	0.96	3.34
Remain widowed	0.82	0.62	1.10
Married to separated/divorced/widowed	0.65	0.46	0.92
Divorced/separated/widowed to married	1.09	0.25	4.75
Age	0.95	0.93	0.98
Sex			
Male	<i>ref</i>		
Female	1.05	0.82	1.36
Place of residence			
Urban	<i>ref</i>		
Rural	1.50	1.20	1.88
Religion			
Islam	<i>ref</i>		
others	1.35	0.98	1.87
cons	1.95	0.44	8.74

Note: Number of obs = 3,991, LR $\chi^2(8) = 45.93$, Prob > $\chi^2 = 0.0000$, Log likelihood = -1190.9523, Pseudo $R^2 = 0.0189$

The results of this study indicate that the prevalence of depression in the elderly during the follow-up period was 9.07%. Several factors were found to have a significant relationship to the onset of depression, namely changes in marital status, age, and place of residence. Meanwhile, gender and religion did not show a statistically significant relationship.

The findings showed that elderly people who changed their status from married to divorced, separated, or widowed/widowed were 35% less likely to experience depression than those who remained married. On the other hand, depression in older adults after divorce or separation may arise due to emotional stress from unresolved marital conflicts, loss of emotional support, and feelings of loneliness (Dzando et al., 2025). Before the divorce, individuals may have coped with a difficult marriage without experiencing depression (Hald et al., 2022; Pellón et al., 2024). However, the divorce itself can act as a trigger, bringing out feelings of loss, financial strain, and social changes that lead to depression. This suggests the possibility of a successful social or psychological adaptation process carried out by individuals in dealing with changes in status. However, these results are in line with most previous studies, which state that losing a spouse increases the risk of depression (Bae & Pachucki, 2024). Social support functions as a protector against psychological stress (Pontes et al., 2024). Elderly people who can form a new support system after losing a spouse may be successful in reducing the risk of depression (Sharma Nath & Patra, 2024). Psychosocial support is needed for elderly people who experience changes in marital status, in order to facilitate their adaptation to new conditions and prevent mental health disorders.

The analysis shows that with increasing age, the risk of experiencing depression actually decreases by 5% per year. This is in line with other studies showing that older adults tend to be more emotionally stable due to long life experiences and have gone through various crisis phases in an adaptive way (Muhonja et al., 2024). The socioemotional selectivity theory proposed also supports this finding, namely that as individuals age, they focus more on meaningful emotional relationships and tend to avoid psychologically disturbing situations (Whitmoyer et al., 2024). However, the result in other study showed that the greatest weight gain occurred among older adults and never-married females who became married, while the greatest weight loss was seen in younger adults who remained divorced/separated and females who remained widowed (Maretalinia et al., 2025). Mental health monitoring needs to be focused on young-old elderly people, who are at higher risk of depression than older age groups.

This study also found that elderly people living in rural areas are 1.5 times more likely to experience depression than those living in urban areas. This difference may be due to limited access to mental health services, social isolation, and less supportive economic conditions in rural areas. Depression is more common in the elderly population in rural areas due to the lack of infrastructure and supporting resources (Wang et al., 2024). In urban areas, depression in the elderly may be less about lack of resources but more about issues like social isolation, high living costs, and stress from city life (Naviganuntana et al., 2022; Purtle et al., 2019). While there are more healthcare services available, the fast-paced environment and lack of close community ties can still contribute to mental health challenges. Mental health promotion programs that focus on rural and urban areas need to be developed and expanded to reach the elderly group.

Gender was not found to be significantly associated with the risk of depression in this study. This finding is not entirely consistent with the bulk of the literature that suggests that women have a higher prevalence of depression than men, especially in older age groups (Du et al., 2024). This discrepancy may be due to cultural factors and social norms that influence the reporting of psychological symptoms among certain genders. Cultural norms shape how men and women experience and report depression. Men are often socialized to hide vulnerability, leading to underreporting of symptoms, while women are encouraged to express emotions, making them more likely to report depression (Gough et al., 2021; Zhu, 2023). Societal pressures, like caregiving roles for women, and expectations of stoicism for men, also

contribute to the differing risks (Shattuck et al., 2020). These factors, along with biological differences, influence how depression is experienced and diagnosed in each gender.

Mental health interventions should consider cultural factors that may influence emotional expression and help-seeking based on gender (Günaydin, 2024). There was no significant association between religion and depression in older adults in this study. However, some literature suggests that religiosity and involvement in religious activities can be protective factors against depression, especially in older adults (Abu Khait et al., 2024). Religiosity and involvement in religious activities can protect against depression in older adults by providing social support, meaning, and purpose (Khuzaimah et al., 2023). Religious practices foster positive coping strategies, emotional resilience, and a sense of belonging. Regular engagement in religious activities also creates a structured routine and combats isolation, helping to prevent depression (Bano et al., 2025). The role of religion in the local context may be homogeneous and therefore not cause significant variation in this population. Although not statistically significant, a religious community-based approach can still be utilized in promoting mental health for older adults (Gasteiger et al., 2024).

Several limitations should be noted. Living arrangements were excluded due to potential multicollinearity with marital status, which may limit interpretation of household context. Depression was assessed using self-reported measures rather than clinical diagnoses, and unobserved factors such as caregiving burden, social support, and life events could not be fully accounted for. Therefore, the findings should be interpreted with caution.

4. CONCLUSION

This study found that changes in marital status, particularly transitions from being married to separated, divorced, or widowed, older age, and rural residence are significantly associated with the onset of depression among older adults in Indonesia. These findings suggest that social transitions and structural disadvantages play an important role in shaping mental health in later life, beyond individual demographic characteristics. From a policy perspective, mental health promotion and depression prevention strategies should prioritize older adults experiencing marital transitions, those living in rural areas, and individuals in early old age by strengthening psychosocial support mechanisms and improving equitable access to mental health services. Targeted, community-based interventions that integrate social support, screening, and referral services are essential to reduce the burden of depression among vulnerable older populations.

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