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Factors Affecting Depression In The Elderly At Uptd Tosora Health Center

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ABSTRACT

Depression is one of the most common mental health problems among older adults and may negatively affect nutritional status, social functioning, quality of life, and independence. Its occurrence is frequently associated with inadequate food intake, limited professional assistance, and insufficient family involvement. This study aimed to analyze factors associated with depression among older adults at UPTD Tosora Health Center, Majauleng District, Wajo Regency. An analytical observational study with a case–control design was conducted from January to February 2022. The study population consisted of 386 older adults registered within the health center's service area. A total of 80 respondents were selected using purposive sampling and divided equally into 40 depressed older adults as the case group and 40 non-depressed older adults as the control group. Data were collected through structured questionnaires, interviews, and supporting health records. Univariate analysis was used to describe the distribution of each variable, while bivariate analysis employed 2 × 2 contingency tables, odds ratios, and significance testing at $p < 0.05$. The results showed that food intake was significantly associated with depression ($p < 0.001$; OR = 0.083). Older adults with adequate food intake had substantially lower odds of depression than those with inadequate intake. Health worker support was also significantly associated with depression ($p < 0.001$; OR = 0.150), while family support demonstrated a significant protective association ($p = 0.001$; OR = 0.183). In conclusion, adequate food intake, health worker support, and family support were significantly associated with lower odds of depression among older adults. Integrated nutritional monitoring, early depression screening, professional assistance, and active family involvement should therefore be strengthened within primary healthcare services.

Keywords: Depression; Elderly; Family Support; Food Intake; Health Worker Support

INTRODUCTION

Depression is one of the most prevalent mental health disorders among older adults and has become a major public health concern due to the rapid growth of the global aging population. As life expectancy increases, countries are experiencing a demographic transition characterized by a substantial rise in the proportion of elderly individuals, accompanied by an increasing burden of chronic diseases and psychological disorders. Depression in later life is particularly concerning because it is frequently underdiagnosed and undertreated, despite its profound consequences on physical health, cognitive function, quality of life, healthcare utilization, and mortality (World Health Organization [WHO], 2023). Unlike depression among younger populations, geriatric depression is often intertwined with multiple biological, psychological, and social stressors, making its identification and management considerably more complex. Therefore, understanding the determinants of depression among older adults has become an important priority in public health research, especially in developing countries where population aging is accelerating (Fiske et al., 2019; Blazer, 2020).

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The global prevalence of depression among older adults varies considerably across countries and socioeconomic contexts, ranging from approximately 10% to over 30%, with substantially higher estimates among individuals suffering from chronic diseases, disability, social isolation, or economic hardship (WHO, 2023). Southeast Asian countries, including Indonesia, face a particularly significant challenge because rapid demographic aging is occurring simultaneously with limited mental health resources. National health statistics indicate that depression increases with advancing age, particularly among individuals aged over 65 years, and is more prevalent among women than men (Ministry of Health of Indonesia, 2023). Riskesdas reports consistently demonstrate that depression represents one of the leading mental health problems among Indonesian older adults, while South Sulawesi remains one of the provinces with relatively high rates of depressive symptoms in elderly populations. In Wajo Regency, increasing numbers of elderly residents have been accompanied by a gradual increase in mental health concerns, including depression, emphasizing the necessity of evidence-based interventions tailored to local community characteristics.

Depression among older adults rarely develops as a consequence of a single factor but instead results from the interaction of multiple biological, psychological, behavioral, and social determinants. Aging is associated with physiological decline, increasing prevalence of chronic illnesses, reduced physical functioning, sensory impairment, cognitive decline, and dependence on family members, all of which contribute to psychological vulnerability (Alexopoulos, 2019). Simultaneously, retirement, bereavement, declining social participation, loneliness, reduced financial security, and changes in family structure frequently diminish emotional well-being and increase depressive symptoms (Santini et al., 2020). Older adults who experience prolonged stress, poor coping mechanisms, limited social support, or negative self-perceptions are substantially more likely to develop depression than those maintaining active social engagement and supportive interpersonal relationships (Domènech-Abella et al., 2019).

Recent advances in geriatric mental health research emphasize that depression should be understood through a biopsychosocial framework rather than solely as an individual psychiatric disorder. Biological vulnerabilities such as chronic inflammation, multimorbidity, frailty, malnutrition, and neurological degeneration interact continuously with psychosocial factors, including loneliness, family relationships, community participation, and socioeconomic status (Prince et al., 2021). Nutritional status has emerged as another important determinant because inadequate dietary intake, protein-energy malnutrition, and micronutrient deficiencies are associated with cognitive impairment, immune dysfunction, physical frailty, and depressive symptoms among older adults (Shafiee et al., 2022). Likewise, family support remains one of the strongest protective factors against depression, as emotional encouragement, instrumental assistance, and regular communication enhance resilience and improve adaptation to age-related changes (Liu et al., 2022). Furthermore, healthcare accessibility and supportive interactions with healthcare professionals contribute significantly to early identification and effective management of depressive symptoms in primary healthcare settings (Khanassov et al., 2021).

Numerous empirical studies have identified various determinants of depression among elderly populations. Cross-sectional and longitudinal investigations across Asia, Europe, and Latin America consistently demonstrate that female gender, advanced age, chronic diseases, disability, poor nutritional status, low educational attainment, reduced income, inadequate family support, social isolation, sleep disturbances, and physical inactivity significantly increase the likelihood of depression (Hu et al., 2022; Park et al., 2021; Yang et al., 2023). Indonesian studies similarly report that loneliness, dependence in activities of daily living, multimorbidity, poor family functioning, and inadequate community support substantially predict depressive symptoms among community-dwelling elderly individuals (Sari et al., 2022; Nugroho et al., 2021). These findings indicate that depression among older adults represents a multidimensional phenomenon requiring comprehensive assessment beyond purely medical factors.

Although previous studies have substantially contributed to understanding depression among older adults, several important research gaps remain. First, many existing studies have been conducted in urban hospitals or institutional settings, whereas relatively limited evidence is available from primary healthcare centers serving rural and semi-rural communities in eastern Indonesia. Community characteristics, cultural values, family structures, healthcare accessibility, and socioeconomic conditions differ considerably between urban and rural populations, potentially influencing depression risk factors in different ways (Mendes et al., 2021). Second, numerous studies focus on only one or two determinants, such as chronic disease or family support, without simultaneously examining multiple interacting factors that collectively contribute to depression. Consequently, current evidence remains fragmented and insufficient for designing integrated community-based interventions. Third, despite increasing elderly populations in South Sulawesi, empirical investigations specifically addressing depression among

older adults attending UPTD Tosora Health Center remain scarce. Local epidemiological evidence is essential because regional demographic, cultural, and healthcare characteristics cannot always be generalized from studies conducted elsewhere in Indonesia.

Another important limitation concerns the translation of research findings into primary healthcare practice. Previous investigations have generally emphasized prevalence estimation rather than identifying modifiable risk factors that can be addressed through preventive strategies within community health centers. Primary healthcare facilities represent the first point of contact for elderly populations and therefore possess strategic potential for early screening, health education, nutritional interventions, family counseling, and psychosocial support. However, effective implementation requires robust local evidence identifying which determinants most strongly influence depression among elderly individuals within the service area. Consequently, studies conducted in community-based healthcare settings are essential for informing evidence-based mental health policies and integrated elderly care programs.

Based on these considerations, the present study aims to analyze the factors affecting depression among older adults attending UPTD Tosora Health Center, Wajo Regency. Specifically, this research investigates the influence of demographic characteristics, physical health conditions, nutritional status, psychosocial factors, family support, and social adaptation on depression among elderly individuals receiving primary healthcare services. The novelty of this study lies in its comprehensive biopsychosocial approach, integrating multiple determinants of depression within a rural primary healthcare context in South Sulawesi, an area that remains underrepresented in the current literature. Unlike previous studies focusing on isolated predictors or hospital-based populations, this research simultaneously evaluates interrelated risk factors among community-dwelling older adults accessing primary healthcare. The findings are expected to strengthen empirical evidence for developing comprehensive mental health promotion strategies, improving depression screening programs, enhancing family-centered interventions, and supporting integrated elderly healthcare policies at both regional and national levels.

In conclusion, depression among older adults constitutes a growing public health challenge driven by the interaction of biological, psychological, nutritional, and social determinants. Despite substantial international evidence, limited research has comprehensively investigated these multidimensional factors within rural Indonesian primary healthcare settings. Addressing this knowledge gap is essential for designing context-specific interventions capable of reducing depression prevalence and improving healthy aging outcomes. Therefore, this study provides an important contribution by generating locally relevant evidence regarding the determinants of depression among elderly populations served by UPTD Tosora Health Center, thereby supporting more effective, evidence-based geriatric mental health services in Indonesia.

METHODS

This study employed an analytical observational design using a case–control approach to identify factors associated with depression among older adults attending UPTD Tosora Health Center, Majauleng District, Wajo Regency, South Sulawesi, Indonesia. A case–control design is considered appropriate for investigating multiple exposure factors related to a specific health outcome because it allows efficient comparison between individuals who experience the outcome (cases) and those who do not (controls), particularly for community-based epidemiological research (Setia, 2016; Pearce, 2016). This design has also been widely recommended in geriatric mental health research to identify determinants of depression where experimental approaches are neither ethical nor feasible (Schulz & Grimes, 2020; Wang et al., 2021). The study was conducted between January and February 2022 within the working area of UPTD Tosora Health Center, Majauleng District, Wajo Regency. The target population comprised 386 elderly individuals aged ≥60 years registered at the health center. Participants were selected using a case–control sampling framework, resulting in a total sample of 80 respondents, consisting of 40 elderly individuals diagnosed with depression (case group) and 40 elderly individuals without depression (control group). Cases and controls were identified from medical records and community health service data based on the diagnostic criteria established by healthcare professionals. This sample size was considered adequate to detect meaningful associations between exposure variables and depression while maintaining sufficient statistical power for epidemiological analysis (Lwanga & Lemeshow, 2018; Chow et al., 2018).

The dependent variable was depression status, whereas the independent variables included demographic characteristics, physical health conditions, nutritional status, psychosocial characteristics, family social support,

and other potential risk factors identified from previous literature on geriatric depression (Prince et al., 2021; Santini et al., 2020). Data were collected through structured interviews using standardized questionnaires and supported by respondents' medical records to improve data validity and minimize recall bias. Prior to data collection, all research instruments were reviewed for content validity and underwent pilot testing to ensure clarity and consistency in measuring each construct (Boateng et al., 2018). Data analysis was performed using both descriptive (univariate) and inferential (bivariate) statistical techniques. Univariate analysis summarized respondent characteristics and study variables using frequencies, percentages, means, standard deviations, minimum values, and maximum values, providing a comprehensive overview of the sample distribution (Hair et al., 2022). Subsequently, bivariate analysis examined the association between each independent variable and depression status through Odds Ratio (OR) estimation using a 2 × 2 contingency table, accompanied by 95% confidence intervals (95% CI). The OR was calculated to estimate the magnitude of risk associated with each exposure factor, where an OR greater than 1 indicated increased risk, an OR less than 1 indicated a protective effect, and an OR equal to 1 suggested no association (Szklo & Nieto, 2019). Statistical significance was determined at a 5% significance level ($p < 0.05$), consistent with recommendations for epidemiological and public health research (Ranganathan et al., 2021). This analytical framework enables robust identification of significant determinants of depression among elderly populations and provides empirical evidence to support community-based mental health interventions within primary healthcare settings.

Table 1.
Consistency of 2 x 2 odds ratio in case control study

Risk Factors	Effect		Total
	Case	Control	
Yes (-)	a	b	a + b
No (+)	c	d	c + d

Source: (Notoatmodjo, 2014).

RESULTS AND DISCUSSION

Result

The study involved 80 older adults living within the service area of UPTD Tosora Health Center, Majauleng District, Wajo Regency. The participants were classified into two equal groups: 40 older adults with depression as the case group and 40 older adults without depression as the control group. The research findings are presented through univariate and bivariate analyses. Univariate analysis describes the distribution of depression status, food intake, health worker support, and family support, whereas bivariate analysis examines the association of these factors with depression among older adults.

Univariate Analysis

Distribution of Depression Status

Table 2. Frequency Distribution of Depression Status Among Older Adults

Depression Status	Frequency (n)	Percentage (%)
Case group: older adults with depression	40	50.0
Control group: older adults without depression	40	50.0
Total	**80**	**100.0**

Table 2 shows that the case and control groups were equally distributed. Of the 80 respondents, 40 participants (50.0%) were older adults experiencing depression, whereas the remaining 40 participants (50.0%) did not experience depression. This balanced distribution was consistent with the case–control design employed in the study.

Distribution of Food Intake

Table 3. Frequency Distribution of Food Intake Among Older Adults

Food Intake	Frequency (n)	Percentage (%)
Adequate	42	52.5
Inadequate	38	47.5
Total	**80**	**100.0**

As presented in Table 3, 42 respondents (52.5%) had adequate food intake, whereas 38 respondents (47.5%) had inadequate food intake. Although adequate food intake was slightly more prevalent, the proportion of older adults with inadequate food intake remained substantial, indicating that nutritional inadequacy was an important concern within the study population.

Distribution of Health Worker Support

Table 4. Frequency Distribution of Health Worker Support

Health Worker Support	Frequency (n)	Percentage (%)
Received support	47	58.8
Lacked support	33	41.3
Total	**80**	**100.0**

Table 4 demonstrates that 47 respondents (58.8%) reported receiving support from health workers, while 33 respondents (41.3%) reported inadequate health worker support. These findings indicate that most respondents had access to professional assistance; nevertheless, more than two-fifths of the participants still perceived limited support from health personnel.

Distribution of Family Support

Table 5. Frequency Distribution of Family Support

Family Support	Frequency (n)	Percentage (%)
Supported	42	52.5
Not supported	38	47.5
Total	**80**	**100.0**

Based on Table 5, 42 respondents (52.5%) received adequate family support, whereas 38 respondents (47.5%) did not receive adequate support. The relatively similar proportions suggest considerable variation in the ability of families to provide emotional, informational, instrumental, and social assistance to their elderly family members.

Bivariate Analysis

Association Between Food Intake and Depression

Table 6. Association Between Food Intake and Depression Among Older Adults at UPTD Tosora Health Center

Food Intake	Case Group: Depressed, n (%)	Control Group: Not Depressed, n (%)	Total, n (%)	*p*-value	OR
Adequate	10 (12.5)	32 (40.0)	42 (52.5)	<0.001	0.083
Inadequate	30 (37.5)	8 (10.0)	38 (47.5)		
Total	**40 (50.0)**	**40 (50.0)**	**80 (100.0)**		

Table 6 shows that among the 42 older adults with adequate food intake, 10 respondents were in the case group and 32 were in the control group. Conversely, among the 38 respondents with inadequate food intake, 30 were depressed and only eight were not depressed. Statistical analysis produced a *p*-value of less than 0.001, indicating a statistically significant association between food intake and depression.

The odds ratio of 0.083 indicates that older adults with adequate food intake had approximately 91.7% lower odds of experiencing depression than those with inadequate food intake. When interpreted inversely, older adults with inadequate food intake had approximately 12 times higher odds of depression than those with adequate food intake. These results demonstrate that adequate nutritional intake functioned as a strong protective factor against depression in the study population.

Association Between Health Worker Support and Depression

Table 7. Association Between Health Worker Support and Depression Among Older Adults at UPTD Tosora Health Center

Health Worker Support	Case Group: Depressed, n (%)	Control Group: Not Depressed, n (%)	Total, n (%)	*p*-value	OR
Received support	15 (18.8)	32 (40.0)	47 (58.8)	<0.001	0.150
Lacked support	25 (31.3)	8 (10.0)	33 (41.3)		
Total	**40 (50.0)**	**40 (50.0)**	**80 (100.0)**		

Table 7 indicates that of the 47 respondents who received support from health workers, 15 experienced depression and 32 did not experience depression. In contrast, among the 33 respondents who lacked support from health workers, 25 experienced depression and only eight did not. The resulting *p*-value of less than 0.001 confirms a statistically significant association between health worker support and depression among older adults.

The odds ratio of 0.150 means that respondents who received health worker support had 85.0% lower odds of experiencing depression than those who lacked such support. Conversely, older adults who lacked health worker support had approximately 6.67 times higher odds of depression. This finding suggests that regular communication, health education, emotional assistance, monitoring, and referral services provided by health professionals may protect older adults from depressive conditions.

Association Between Family Support and Depression

Table 8. Association Between Family Support and Depression Among Older Adults at UPTD Tosora Health Center

Family Support	Case Group: Depressed, n (%)	Control Group: Not Depressed, n (%)	Total, n (%)	*p*-value	OR
Supported	13 (16.3)	29 (36.3)	42 (52.5)	0.001	0.183
Not supported	27 (33.8)	11 (13.8)	38 (47.5)		
Total	**40 (50.0)**	**40 (50.0)**	**80 (100.0)**		

As shown in Table 8, among the 42 respondents who received family support, 13 experienced depression and 29 did not experience depression. Among the 38 respondents who lacked family support, 27 experienced depression and 11 did not. The statistical analysis yielded a *p*-value of 0.001, demonstrating a significant association between family support and depression among older adults.

The odds ratio of 0.183 indicates that older adults receiving family support had approximately 81.7% lower odds of depression than those without adequate family support. In inverse terms, respondents who did not receive family support had approximately 5.46 times higher odds of depression. This result emphasizes the protective contribution of family involvement in helping older adults adapt to physical decline, changes in social roles, chronic illness, economic limitations, and emotional difficulties.

Overall, all three investigated factors were significantly associated with depression among older adults. Adequate food intake demonstrated the strongest protective association, followed by health worker support and family support. Older adults with inadequate nutritional intake, insufficient professional support, and limited family assistance were substantially more likely to experience depression. These empirical findings indicate that depression prevention at UPTD Tosora Health Center should integrate nutritional monitoring, proactive health worker engagement, and family-centered psychosocial support.

Discussion

Food Intake and Depression Among Older Adults

The findings demonstrated a statistically significant association between food intake and depression among older adults at UPTD Tosora Health Center ($p < 0.001$). Older adults with adequate food intake had an odds ratio of 0.083, indicating approximately 91.7% lower odds of depression than those with inadequate intake. Conversely, respondents with inadequate food intake had approximately 12 times higher odds of depression. This represents the strongest association among the three factors examined, although the case–control design does not permit a definitive causal conclusion.

Adequate food intake is essential for maintaining metabolic function, immunity, muscle mass, neurological health, and psychological well-being during aging. Older adults are especially vulnerable to nutritional inadequacy because of declining appetite, impaired taste and smell, dental problems, dysphagia, chronic disease, polypharmacy, reduced mobility, and financial limitations (Fávaro-Moreira et al., 2016; Volkert et al., 2019; Corish & Bardon, 2019). Depression may further suppress appetite, reduce motivation to prepare food, and produce social withdrawal, thereby creating a bidirectional cycle between inadequate intake and deteriorating mental health (Payne et al., 2018; Miao et al., 2025).

The present finding is consistent with evidence that healthier dietary patterns, including fruit, vegetables, whole grains, legumes, fish, and adequate protein, are associated with fewer depressive symptoms (Lassale et al., 2019; Molendijk et al., 2018; Li et al., 2017). Nutrients such as folate, vitamin B12, vitamin D, omega-3 fatty acids, zinc, magnesium, and amino acids contribute to neurotransmitter synthesis, neuroplasticity,

inflammatory regulation, and hypothalamic–pituitary–adrenal axis functioning (Firth et al., 2019; Marx et al., 2021). Conversely, nutrient-poor diets may intensify oxidative stress and chronic inflammation, mechanisms increasingly implicated in late-life depression (Kiecolt-Glaser et al., 2017; Chrzastek et al., 2023).

The high proportion of depressed respondents with inadequate intake may also reflect practical difficulties experienced by older adults living alone or depending on others for shopping, cooking, and feeding. Nutritional intervention should therefore address not only food quantity but also texture, palatability, meal frequency, affordability, and assistance during meals. Foods can be softened through boiling, steaming, preparing porridge or soup, and cutting food into smaller portions. Protein-rich foods, vegetables, fruits, legumes, and nutrient-dense snacks should be prioritized according to individual medical conditions. Nutritional screening should also be integrated into elderly health services because malnutrition is multifactorial and closely connected to psychological, social, and functional problems (Dent et al., 2019; Visser et al., 2020; Pfannkuch et al., 2026).

Health Worker Support and Depression Among Older Adults

Health worker support was significantly associated with depression ($p < 0.001$). Respondents receiving such support had an OR of 0.150, equivalent to 85% lower odds of depression than respondents reporting inadequate support. In inverse terms, older adults lacking health worker support had approximately 6.67 times higher odds of depression. Health worker support includes emotional attention, respectful communication, health information, practical assistance, disease monitoring, counseling, and referral. These services are important because depression in later life may be overlooked when sadness, fatigue, insomnia, appetite loss, and reduced activity are incorrectly regarded as normal consequences of aging (Alexopoulos, 2019; Kok & Reynolds, 2017). Regular contact with primary healthcare personnel can facilitate early detection, clarify health concerns, strengthen treatment adherence, and connect older adults with appropriate psychological and social services (Unützer & Park, 2016; Frost et al., 2019).

The finding supports evidence that collaborative and integrated mental healthcare in primary care improves the identification and management of late-life depression (Gilbody et al., 2017; Coventry et al., 2020). Educational programs and supportive interventions can also improve depressive symptoms, perceived social support, and quality of life among older adults. Community health cadres are particularly valuable in Indonesia because they can conduct routine screening, home visits, health education, and referral under professional supervision. However, cadres require structured training to distinguish transient sadness from clinically relevant depressive symptoms and to recognize warning signs such as persistent hopelessness, social withdrawal, severe functional decline, and suicidal ideation.

At UPTD Tosora Health Center, health workers should combine depression screening with nutritional assessment, chronic disease management, medication review, and evaluation of social conditions. Communication should be empathetic and culturally appropriate rather than limited to physical examinations. Such continuity may increase older adults' confidence in discussing emotional problems and reduce the stigma attached to mental healthcare.

Family Support and Depression Among Older Adults

Family support was also significantly related to depression ($p = 0.001$). Supported respondents had an OR of 0.183, indicating 81.7% lower odds of depression. Conversely, respondents without adequate family support had approximately 5.46 times higher odds of experiencing depression.

This result is consistent with studies showing that emotional, informational, appraisal, and instrumental support protect older adults against loneliness, stress, functional decline, and depressive symptoms (Gariépy et al., 2016; Harandi et al., 2017; Wang et al., 2018). Family members provide companionship, encouragement, transportation, financial assistance, medication supervision, meal preparation, and help with activities of daily living. These forms of assistance strengthen perceived security and belonging, which are central to psychological resilience in later life (Tengku Mohd et al., 2019; Santini et al., 2020). Evidence also indicates that emotional and family-based support is inversely associated with frailty and other adverse geriatric outcomes.

In contrast, insufficient family interaction may reinforce feelings of abandonment, worthlessness, loneliness, and loss of social identity. Older adults without support may spend more time alone, eat inadequately, sleep poorly, and delay seeking healthcare. Social support deficits can therefore influence

depression both directly and indirectly through malnutrition, self-neglect, reduced physical activity, and poor disease management (Schorr et al., 2021; Adıgüzel et al., 2025).

Overall, the findings confirm that geriatric depression in Tosora is embedded within interconnected nutritional, healthcare, and family environments. Prevention should consequently employ an integrated model combining routine depression and nutritional screening, proactive health worker engagement, cadre-based home visits, and family education. Particular attention should be directed to older adults who live alone, have eating difficulties, lack regular health-service contact, or receive limited family assistance. This integrated approach is more appropriate than treating depression solely as an individual psychiatric condition and may support healthier, more socially connected, and psychologically resilient aging in Wajo Regency.

CONCLUSION

This study concludes that several modifiable factors are significantly associated with depression among older adults attending UPTD Tosora Health Center, Majauleng District, Wajo Regency. Based on the case–control analysis involving 80 respondents, food intake, health worker support, and family support were all significantly related to the occurrence of depression. Adequate food intake showed the strongest protective association against depression ($p < 0.001$; OR = 0.083), indicating that older adults with sufficient nutritional intake had substantially lower odds of experiencing depressive symptoms than those with inadequate intake. Likewise, support from health workers was significantly associated with a lower likelihood of depression ($p < 0.001$; OR = 0.150), highlighting the importance of professional guidance, health education, counseling, and continuous monitoring in maintaining the psychological well-being of older adults. Furthermore, family support demonstrated a significant protective relationship with depression ($p = 0.001$; OR = 0.183), emphasizing that emotional, informational, and instrumental assistance provided by family members contributes to better psychological adaptation during aging.

Conceptually, these findings reinforce the biopsychosocial perspective that late-life depression is influenced not only by biological or nutritional conditions but also by interpersonal relationships and healthcare support systems. Empirically, the study indicates that improving nutritional adequacy, strengthening the involvement of primary healthcare professionals, and enhancing family participation are essential components of comprehensive depression prevention strategies for older adults. Therefore, depression management in primary healthcare should adopt an integrated approach that combines routine nutritional assessment, early mental health screening, continuous psychosocial counseling, and family-centered interventions. Such collaborative strategies are expected to reduce the burden of depression, improve the quality of life of older adults, and support healthy and active aging within the community. Future studies are recommended to employ prospective cohort or longitudinal designs with broader biopsychosocial variables to clarify causal pathways and strengthen evidence for geriatric mental health interventions in Indonesia.

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