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Family Palliative Care Exposure and Psychological Well-Being Among Senior High School Students

Farida Nur Qomariyah[1], Lutfiasih Rahmawati[1]

[1] *Faculty of Nursing, Universitas Jember, Indonesia*

Correspondence should be addressed to:
Farida Nur Qomariyah
faridanur@unej.ac.id

Abstract:
Adolescents supporting family members with serious, chronic, or life-limiting illnesses face unique psychosocial challenges, yet empirical evidence from low- and middle-income countries remains scarce. This study examined the psychological well-being of senior high school students and its association with exposure to family palliative care. A cross-sectional study was conducted at a public high school in Jember from March to April 2026. Using consecutive sampling, 100 students (mean age 16.81 years, SD = 0.95; 61.0% female) were recruited from a population of 348. Psychological well-being was assessed via the validated Indonesian WHO-5 Well-Being Index, with scores below 13 indicating poor well-being. Data were analyzed using descriptive statistics, exact tests, and crude odds ratios (OR). Notably, 66.0% of respondents exhibited poor well-being overall. However, family palliative care exposure was significantly associated with WHO-5 status (p = 0.004). Counterintuitively, exposed students were nearly 4 times more likely to report adequate well-being than their unexposed peers (OR = 3.91, 95% CI = 1.62–9.41). This positive association likely reflects psychological resilience, benefit finding, and robust communal family support, rather than a direct protective effect of the illness itself. Given the multidimensional nature of family illness exposure, educational institutions must implement subtle, non-stigmatizing screening protocols and targeted referral pathways to support adolescents navigating hidden home-care responsibilities effectively.

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INTRODUCTION

Adolescent psychological well-being is a critical global public health priority, as this developmental period fundamentally shapes future adult health, social participation, and family life (Suppiej et al., 2025). youth mental health has notably worsened across many settings over the past two decades, with mental health conditions affecting a substantial proportion of adolescents aged 10–19 years and interfering with education and daily functioning (Von Simson et al., 2022). The second Lancet Commission on adolescent health and well-being emphasizes that urgent investment in this demographic is essential (Baird et al., 2025).

The school environment serves as a crucial vantage point for detecting early signs of declining well-being, particularly for students navigating hidden external stressors (Khan et al., 2024). Changes in well-being often manifest first in everyday student life, such as low mood, poor concentration, or social withdrawal, which teachers may notice before formal help is sought (Bosacki et al., 2023). This school-based perspective is especially relevant when students face compounding stressors outside the classroom, including family illness, shifting household routines, and emerging caregiving responsibilities (Haight et al., 2023).

Contemporary literature recognizes that the experiences of "young carers" are highly heterogeneous. While recent reviews indicate that young carers are generally more likely to report poorer mental health and lower well-being than their non-caring peers (Alfonzo et al., 2022), the strength of this association varies significantly based on caregiving intensity and available support (Grangel et al., 2025). Qualitative syntheses reveal that beyond burden and invisibility, young carers frequently experience empathy, responsibility, and a strengthened sense of family connection (Saragosa et al., 2022).

Grounded in the Stress Process Model and Family Systems Theory, recent research emphasizes that positive adaptation can occur when robust protective systems remain available during adversity (Wang, 2022). Studies on parental illness demonstrate that while caregiving and stress affect youth adjustment, psychological flexibility can buffer these effects (Landi et al., 2021). While illness unpredictability is linked to unmet needs and lower quality of life (Landi et al., 2022), recent evidence suggests that benefit finding may explain why some young people in family illness contexts report better adaptation than others (Landi et al., 2025).

Despite these theoretical and empirical insights, evidence regarding adolescent well-being in the context of family illness remains heavily skewed toward high-income countries. This leaves a significant knowledge gap regarding low- and middle-income countries (LMICs), where evidence remains limited and culturally uneven (Raji et al., 2025). In Southeast Asia, adolescent mental health is uniquely shaped by help-seeking barriers, stigma, family expectations, and variable access to school-based support (Octavia et al., 2025).

This study introduces novelty by examining family palliative care exposure in suburban Jember Regency, Indonesia, using the brief, positively worded WHO-5 Well-Being Index, which has been rigorously validated for Indonesian respondents (Latifa et al., 2023) and supported for school-based assessments globally (Doumit et al., 2025). Jember offers a distinct cultural context where adolescents live within close family networks, and illness-related responsibilities are often shared among extended relatives and neighbors, potentially altering how adolescents appraise family illness compared to individualistic settings.

The urgent purpose of this research is to examine whether family palliative care exposure in a suburban Indonesian school context is associated with WHO-5 psychological well-being, while distinguishing general exposure from direct caregiving burden. Understanding this dynamic is critical for developing targeted, non-stigmatizing school-based interventions, as early identification, trusted contacts, and flexible academic support are vital for protecting adolescents with hidden caring responsibilities (Casu et al., 2021).

METHOD

Study Design and Setting

This study used a quantitative cross-sectional design to examine psychological well-being among senior high school students and its association with having a family member with a condition requiring palliative or long-term care. The study was conducted at a public senior high school located in a suburban area of Jember Regency, East Java, Indonesia. The suburban school context was selected because students in this setting may experience both formal educational demands and close family-based care arrangements that are typical of semi-urban Indonesian communities. To maintain institutional confidentiality, the school is referred to as SMAN X Jember. Data collection was conducted from March to April 2026.

Population and Sample

The study population consisted of all students enrolled at SMAN X Jember during the study period. The total population was 348 students. The sample size was estimated using the single-population proportion formula with a finite population correction. Since no previous estimate of the proportion of poor well-being among senior high school students with family members requiring palliative or long-term care in this setting was available, the expected proportion was set at 50% to obtain the maximum sample size. With a 95% confidence level, a margin of error of 8.5%, and a finite population of 348 students, the minimum required sample size was 97 students. The final sample was rounded up to 100 students.

Sampling Technique

A non-probability consecutive sampling technique was used. Students who met the eligibility criteria and were available during the data collection period were invited to participate until the required sample size was reached. This approach was selected because probability sampling was not feasible given the school timetable, classroom access arrangements, and a limited data-collection window. The use of consecutive sampling allowed recruitment during scheduled school sessions but may introduce selection bias and limit the generalizability of the findings beyond the study school.

Eligibility Criteria

The inclusion criteria were students who were officially enrolled at SMAN X Jember during the 2025/2026 academic year, who were present during the data collection period, who could read and understand the questionnaire, and who were willing to participate voluntarily. Students were included only if they provided complete responses to the main study variables, namely the WHO-5 well-being and family palliative care exposure. Students were excluded if they were absent during data collection, declined to participate, submitted incomplete questionnaire responses, withdrew before completing the questionnaire, or were unable to complete the questionnaire independently due to physical, cognitive, or communication barriers.

Study Variables

The outcome variable was psychological well-being, measured using the WHO-5 Well-Being Index. The main exposure variable was family palliative care exposure, defined as having at least one family member with a serious, chronic, life-limiting, disabling, neurological, terminal, or long-term condition requiring continuing care, symptom management, or family support. This variable was categorized as yes/no based on the student self-report. The term did not measure direct caregiving burden, caregiving hours, task intensity, illness severity, or whether the student was the primary caregiver. Additional sociodemographic variables included gender, age, family member affected, and duration of the family member's illness.

Instrument Validity and Reliability

Psychological well-being was measured using the Indonesian version of the WHO-5 Well-Being Index. The WHO-5 consists of five positively worded items that assess subjective well-being during the previous two weeks. The Indonesian version has been psychometrically validated by Latifa et al. (2023) using Confirmatory Factor Analysis and Item Response Theory. Their study showed that all five items were valid indicators of psychological well-being, with factor loadings ranging from 0.72 to 0.91. It supported the WHO-5 as a brief, non-invasive instrument for Indonesian respondents. Broader evidence also supports the WHO-5 as a practical and reliable measure of current mental well-being across populations.

WHO-5 Scoring and Categorization

Each WHO-5 item is scored from 0 to 5, with higher scores indicating more frequent positive well-being experiences. The raw score is calculated by summing the five item scores, resulting in a total score ranging from 0 to 25. The raw score can also be multiplied by 4 to obtain a transformed score ranging from 0 to 100. In this study, the raw WHO-5 score was used for categorization. A score below 13 was categorized as poor well-being, while a score of 13 or higher was categorized as adequate well-being. This cut-off is consistent with the Indonesian WHO-5 validation study, which identified a score of 13 as the threshold between low and high well-being (Latifa et al., 2023).

Data Collection Procedure

Data were collected using a structured self-administered questionnaire. Before data collection, the researchers explained the study's purpose, the voluntary nature of participation, and the confidentiality of responses. Family palliative or long-term care exposure was explained to students in simple language as the presence of a family member who had a serious or long-lasting illness or disability that required regular care, monitoring, assistance, or support from the family. Students who agreed to participate completed the questionnaire during the scheduled data collection period. The questionnaire consisted of two sections. The first section collected sociodemographic data and family palliative care exposure. The second section contained the WHO-5 Well-Being Index. Completed questionnaires were checked for completeness before data entry and analysis.

Data Analysis

Data were analyzed using IBM SPSS Statistics. Descriptive statistics were used to summarize respondent characteristics and WHO-5 well-being status. Categorical variables were presented as frequencies and percentages. Numerical variables were summarized using mean, standard deviation, median, minimum, and maximum values where appropriate. The association between family palliative care exposure and WHO-5 well-being category was analyzed using the chi-square test, and the crude odds ratio with 95% confidence interval was calculated for the primary 2x2 association. Additional associations between WHO-5 well-being and gender, age, and duration of illness were analyzed using chi-square tests, the Fisher-Freeman-Halton exact test, or the Mann-Whitney U test, depending on the data characteristics and test assumptions. Expected cell counts were reviewed before selecting chi-square or exact tests. Because the study was exploratory, single-school-based, and included a modest number of exposed students, the analysis remained primarily bivariate; therefore, possible confounding by age and illness duration was considered cautiously in interpretation rather than treated as fully adjusted evidence. A p-value of less than 0.05 was considered statistically significant.

Ethical Considerations

This study strictly adhered to established ethical guidelines for research involving human participants, with formal approval obtained from the Faculty of Nursing at Universitas Jember. Given that the study population consisted of adolescents, voluntary participation was ensured through a dual-consent process that required both documented student assent and informed consent from parents or legal guardians. Participants were explicitly informed of their right to decline or withdraw from the study at any time without facing any academic repercussions. Furthermore, strict anonymity and confidentiality were maintained throughout the research process; no personal identifiers were included in the dataset or manuscript, and the participating institution was anonymized as "SMAN X Jember" to safeguard institutional privacy.

RESULT

A total of 100 students were included in the final analysis. The results are presented in a sequence that aligns with the study's aim. First, respondent characteristics and WHO-5 well-being status are described. The primary analysis then focuses on the association between family palliative care exposure and WHO-5 well-being. Additional sociodemographic analyses are presented after the primary finding.

Table 1 showed that the respondents were adolescents aged 15 to 19 years, with a mean age of 16.81 years (SD = 0.95). Female students accounted for 61.0% of the sample. Nearly half of the respondents reported having a family member with a condition requiring palliative or long-term care.

Table 1. Sociodemographic characteristics of respondents (n = 100)

Variable	Category/Statistic	n (%) or value
Age, years	Mean ± SD	16.81 ± 0.95
	Median (min-max)	17 (15-19)
Age group, years	15	10 (10.0)
	16	22 (22.0)
	17	49 (49.0)
	18	15 (15.0)
	19	4 (4.0)
Gender	Male	39 (39.0)
	Female	61 (61.0)
Family member with a condition requiring palliative or long-term care	No	54 (54.0)
	Yes	46 (46.0)
Family member affected	No family member reported	54 (54.0)
	Father	10 (10.0)
	Mother	10 (10.0)
	Sibling	8 (8.0)
	Grandparent	12 (12.0)
	Uncle/aunt	6 (6.0)
Duration of the family member's illness	No family member reported	54 (54.0)
	<1 year	15 (15.0)
	1-5 years	19 (19.0)
	>5 years	12 (12.0)

The WHO-5 results showed that students had a mean raw score of 10.60 (SD = 4.03) on a 0-25 scale and a mean transformed score of 42.40 (SD = 16.12) on a 0-100 scale. Using the WHO-5 cut-off score of 13, 66 students (66.0%) were classified as having poor well-being, while 34 students (34.0%) were classified as having adequate well-being. The WHO-5 score distribution and categorization are presented in Table 2.

Table 2. WHO-5 well-being score and categorization

Measure	Statistic/category	Value
WHO-5 raw score, 0-25	Mean ± SD	10.60 ± 4.03
	Median (min-max)	10 (3-22)
WHO-5 transformed score, 0-100	Mean ± SD	42.40 ± 16.12
	Median (min-max)	40 (12-88)
WHO-5 well-being category	Poor well-being (<13)	66 (66.0)
	Adequate well-being (≥13)	34 (34.0)

The primary analysis found a significant association between family palliative care exposure and WHO-5 well-being status (χ^2 = 8.443, p = 0.004). Among students who had a family member with a condition requiring palliative or long-term care, 50.0% were categorized as having adequate well-being. In contrast, only 20.4% of students without such exposure were categorized as having adequate well-being. Students with family palliative care exposure were more likely to be in the adequate well-being group than students without exposure (OR = 3.91, 95% CI = 1.62-9.41). The primary association is shown in Table 3.

Table 3. Primary association between family palliative care exposure and WHO-5 well-being

Family member with a condition requiring palliative or long-term care	Poor well-being n (%)	Adequate well-being n (%)	Total	p-value	OR for adequate well-being (95% CI)
No	43 (79.6)	11 (20.4)	54	0.004	Reference
Yes	23 (50.0)	23 (50.0)	46		3.91 (1.62-9.41)

This result indicates a statistically significant relationship between the main exposure variable and the WHO-5 well-being scale. Because the study used a cross-sectional design, the findings should be interpreted as an association rather than a causal effect. The direction of this finding also requires careful interpretation, as the exposure variable measured the presence of a family member requiring palliative or long-term care, not the intensity of the student's caregiving burden. Thus, the result should not be interpreted as evidence that exposure to illness improves well-being.

Additional sociodemographic analyses showed that gender was not significantly associated with WHO-5 well-being status (p = 0.446). Age differed significantly between the WHO-5 groups (p = 0.021); students in the adequate well-being group had a slightly higher mean age than those in the poor well-being group. Duration of illness was also significantly associated with WHO-5 well-being (p = 0.010). Students whose family members had a longer illness duration showed a higher proportion of adequate well-being. Because the category "no family member reported" overlaps with the absence of family palliative care exposure, the illness-duration analysis should be interpreted as descriptive and exploratory rather than as an independent exposure model. These additional associations are presented in Table 4.

Table 4. Additional association between sociodemographic characteristics and WHO-5 well-being

Variable	Category/statistic	Poor well-being	Adequate well-being	p-value	Test
Gender	Male	28 (71.8)	11 (28.2)	0.446	Chi-square
	Female	38 (62.3)	23 (37.7)		Chi-square
Age, years	Mean ± SD	16.65 ± 0.95	17.12 ± 0.88	0.021	Mann-Whitney U
	Median (min-max)	17 (15-19)	17 (15-19)		Mann-Whitney U
Duration of the family member's illness	No family member reported	43 (79.6)	11 (20.4)	0.010	Fisher-Freeman-Halton exact
	<1 year	10 (66.7)	5 (33.3)		Fisher-Freeman-Halton exact
	1-5 years	9 (47.4)	10 (52.6)		Fisher-Freeman-Halton exact
	>5 years	4 (33.3)	8 (66.7)		Fisher-Freeman-Halton exact

DISCUSSION

This study reveals a dual reality among senior high school students in suburban Jember Regency: a highly concerning prevalence of poor psychological well-being, alongside a counterintuitive positive association between exposure to family palliative care and adequate well-being. Based on the validated WHO-5 cut-off, two-thirds of respondents were classified as having poor well-being, underscoring the urgent need for stronger school, family, and community responses. Recent international evidence emphasizes that adolescent mental health problems profoundly disrupt learning, interpersonal relationships, and long-term psychosocial functioning, necessitating targeted public health interventions (McGorry et al., 2024). Within this vulnerable population, however, students who reported having a family member requiring palliative or long-term care were significantly more likely to be categorized in the adequate well-being group than their unexposed peers, presenting a finding that demands careful contextual interpretation.

The direction of this primary association initially appears contradictory to the prevailing young carer literature, which predominantly reports diminished mental health and well-being among adolescents with caregiving responsibilities. For instance, recent evidence consistently demonstrates that young carers face elevated risks of psychological distress and poorer health outcomes compared to their non-caring peers (Lacey et al., 2022). Furthermore, systematic reviews indicate that these adverse effects are particularly pronounced when caregiving duties are intense and social support networks are fragmented (Janes et al., 2022). While empirical evidence from low- and middle-income countries (LMICs) remains sparse, existing syntheses emphasize that young caregiving in these regions is deeply embedded within complex socio-cultural expectations, poverty, educational disruptions, and highly variable family support systems (Raji et al., 2025).

This apparent discrepancy can be reconciled by carefully distinguishing between mere exposure to family illness and the assumption of a high-burden, primary caregiving role. The present study measured general exposure to a family member requiring care, but it did not quantify caregiving intensity, hours spent, or the physical heaviness of the tasks performed. As Janes et al. (2022) argue, the psychosocial effects of caring are highly context-dependent, varying significantly depending on the specific responsibilities carried and the support available to the family unit. In the Indonesian context, collectivistic family structures and gotong royong (communal cooperation) norms often distribute illness-related responsibilities across extended kin, including parents, siblings, grandparents, aunts, uncles, and neighbors. This communal insulation likely reduces the probability that a single adolescent bears the full weight of caregiving alone, suggesting that the exposed students in this sample may have benefited from protective family resources rather than experiencing an isolated, overwhelming burden.

A compelling theoretical explanation for these findings lies in the concepts of psychological adaptation and benefit finding within a resilience framework. Students living with a family member who requires long-term care may gradually adjust to altered family routines, in which daily proximity to illness can foster empathy, emotional maturity, a strengthened sense of role identity, and deeper family cohesion. This interpretation aligns with resilience theory, which posits that positive adaptation is achievable when protective systems remain intact despite adversity. Empirical studies on young carers corroborate this mechanism; for example, benefit finding has been shown to enhance mental well-being by promoting active coping strategies and reducing feelings of helplessness (Wepf et al., 2021). Moreover, benefit finding can actively moderate the relationship between young carer experiences and mental well-being (Wepf et al., 2022), and distinct profiles of benefit finding and caregiving have been identified among youth navigating parental illness (Landi et al., 2025). These psychological mechanisms help elucidate why some adolescents exposed to family illness demonstrate remarkable resilience rather than uniform distress.

The significant association between a longer duration of family illness and adequate well-being further supports this nuanced, resilience-oriented interpretation. Students whose family members experienced prolonged illness demonstrated a higher proportion of adequate well-being, which may reflect individual psychological adaptation over time. Alternatively, a longer illness duration often indicates that family routines have stabilized, role distributions have become clearer, understanding of the disease has improved, and access to informal support has been optimized. Previous research on parental cancer highlights that illness unpredictability and unmet needs are primary drivers of poor adjustment among adolescents and young adults (Landi et al., 2022). Consequently, a chronic but predictable illness may be psychologically easier to navigate than a shorter, highly unpredictable condition that causes acute emotional disruption and destabilizes the household.

Demographic variables, specifically age and gender, also provided valuable insights into how adolescents appraise and manage family-related stressors. Older adolescents in this study were slightly more likely to belong to the adequate well-being group, suggesting that advancing developmental stages confer better emotional regulation, more sophisticated coping skills, and a clearer cognitive understanding of family illness. Although the narrow age range warrants cautious interpretation, this aligns with developmental theories of stress appraisal. Conversely, gender was not significantly associated with well-being in this sample. This contrasts with broader adolescent mental health literature that frequently reports poorer well-being or distinct emotional symptom profiles among girls (Doumit et al., 2025). The possibility that family illness-related variables exerted a stronger, overriding influence on well-being than gender norms in this specific context.

These findings carry critical practical implications for educational institutions aiming to support students navigating hidden family health crises. Because students with family members requiring palliative care may not voluntarily disclose their situation and can appear academically functional while harboring private worry, schools must adopt proactive yet sensitive strategies. Practical responses should include non-stigmatizing screening questions about family responsibilities, targeted teacher training to recognize subtle changes in attendance or classroom engagement, and the establishment of a trusted counseling contact person. Furthermore, schools should provide psychoeducation on coping and help-seeking, offer flexible academic arrangements during family health crises, and maintain clear referral pathways to school counselors or community mental health services. Crucially, these actions must avoid deficit-based labels such as "problem caregiver" and instead focus on identifying each student's specific role, burden, and support needs. Such approaches align with recent European intervention research supporting young carers in schools (Hlebec et al., 2024; Kaiser et al., 2024), while simultaneously addressing Southeast Asian evidence that help-seeking behaviors are heavily mediated by health literacy, stigma, and community trust (Octavia et al., 2025).

Despite its contributions, this study must be interpreted in light of several methodological limitations that constrain the generalizability and causal inference of its findings. First, the cross-sectional design inherently prevents the determination of causal relationships between family palliative care exposure and psychological well-being. Second, the use of consecutive sampling within a single suburban school limits the external validity of the results to broader Indonesian adolescent populations. Third, the modest sample size and reliance on self-reported exposure introduce the risk of exposure misclassification, as students may interpret "palliative or long-term care" differently based on their subjective understanding. The study lacked detailed assessments of caregiving intensity and hours, illness severity, specific diagnoses, socioeconomic status, family support dynamics, coping mechanisms, benefit finding, social desirability bias, and unmet needs.

The absence of clinical mental disorder screening and multivariable logistic regression means that residual confounding by age, illness duration, socioeconomic context, and family support cannot be definitively excluded. Future research should prioritize larger, multi-school samples, longitudinal designs, and comprehensive, validated measures of caregiving burden, family functioning, social support, and mental health symptoms to clarify the precise mechanisms driving resilience versus distress in this vulnerable population.

CONCLUSION

This study reveals a high prevalence of poor psychological well-being among senior high school students in suburban Jember, Indonesia, alongside a counterintuitive yet significant association between exposure to family palliative care and adequate well-being. Rather than suggesting that family illness inherently benefits adolescent mental health, this finding underscores that illness exposure constitutes a multidimensional psychosocial context wherein vulnerability dynamically coexists with adaptation, family cohesion, and benefit finding. Family illness should not be conceptualized as a uniform psychiatric risk factor, but rather as a complex catalyst whose psychological outcomes are heavily mediated by caregiving intensity, developmental stage, illness duration, and culturally embedded support systems. To effectively safeguard this population, educational institutions and healthcare professionals must implement subtle, non-stigmatizing identification and referral pathways that recognize the nuanced, often hidden realities of students managing family health crises. Moving forward, longitudinal and multi-site research is essential to elucidate the precise causal pathways, caregiving burdens, and mechanisms of post-traumatic growth and psychosocial adaptation among adolescents navigating serious family illness within Indonesia and broader low- and middle-income country settings.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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