

Coping and Spirituality in Relation to Quality of Life Among Patients Undergoing Hemodialysis

Access this article online
Quick Response Code :



DOI : 10.22487/htj.v12i4.2233

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Page : 670-681

Article History:

Received: 2026-04-09

Revised: 2026-09-28

Accepted: 2026-10-06

Published by:

Tadulako University,
Managed by Faculty of
Medicine.

Website :

<https://jurnal.fk.untad.ac.id/index.php/htj/index>



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Abstract

Background: Hemodialysis imposes substantial physical and psychosocial demands that may affect patients' quality of life. **Objectives:** To examine associations between coping mechanisms, spirituality, and quality of life among patients with chronic kidney disease at Sekarwangi Regional General Hospital, Sukabumi Regency. **Methods:** This quantitative cross sectional study recruited 100 patients through accidental sampling. Data were collected using the Brief COPE, Daily Spiritual Experience Scale, and Kidney Disease Quality of Life instruments. Descriptive statistics and exact contingency tests were applied, with approximate 95% confidence intervals for differences in proportions. **Results:** Adaptive coping was reported in 91 patients, high spirituality in 59, and good quality of life in 60. Good quality of life occurred in 60 of 91 patients with adaptive coping versus none of nine with maladaptive coping (difference 65.9 percentage points; 95% confidence interval 34.3–74.8; Fisher exact $p < 0.001$). Corresponding counts were 59/59 for high spirituality, 1/28 for medium spirituality, and 0/13 for low spirituality (overall exact $p < 0.001$). **Conclusions:** Coping mechanisms and spirituality were significantly associated with quality of life. Individualized nursing assessment and further evaluation of psychosocial and spiritual interventions are warranted, although causal relationships cannot be established.

Keywords: Chronic kidney disease; Coping; Hemodialysis; Quality of life; Spirituality.

Introduction

Chronic kidney disease (CKD) involves persistent abnormalities of kidney structure or function and requires management that considers clinical outcomes and patients' experience of illness¹. The Global Burden of Disease Study estimated 697.5 million cases of CKD worldwide in 2017, corresponding to a prevalence of 9.1%². This is a dated estimate of all stages of CKD, rather than the prevalence of dialysis dependence. For people receiving maintenance hemodialysis, repeated treatment, restricted activities, and symptoms can affect everyday functioning and perceived quality of life. A recent review of dialysis assessment

tools emphasizes the need to capture physical, psychological, and social concerns³.

Hemodialysis sustains life but does not remove every consequence of kidney disease. Patients manage treatment schedules alongside changing physical capacity and household or occupational responsibilities. A review published in Healthy Tadulako Journal examined ultrafiltration and intradialytic blood pressure, highlighting the physiological demands accompanying dialysis treatment⁴. These clinical demands provide a reason to assess how patients respond psychologically to illness, while keeping treatment complications distinct from coping and spiritual experience.

An assessment limited to clinical indicators can overlook concerns that patients consider central to living with dialysis.

Coping describes responses to stress and the efforts used to manage its emotional and practical consequences. The Brief COPE was developed to assess several coping responses rather than a single universally beneficial strategy⁵. Indonesian research involving three dialysis units found an association between affective coping and quality of life, but did not find significant associations for total coping or problem solving scores⁶. These results suggest that the meaning of coping depends on the strategies measured and the clinical context. Examining coping alongside spirituality can provide a more specific description of psychosocial experience than assuming that all forms of coping have equivalent relationships with wellbeing.

Spirituality concerns meaning, connection, and experiences that may include but are not restricted to formal religious participation. The Daily Spiritual Experience Scale (DSES) was developed to measure ordinary spiritual experiences⁷. A systematic review identified relationships between spirituality, religiosity, and quality of life in dialysis populations, with differences across measures and settings⁸. In *Healthy Tadulako Journal*, Na'imah and colleagues examined spiritual activity and cognitive function in older people⁹. Their outcome differs from dialysis quality of life, but the study illustrates the relevance of carefully defined spiritual constructs in Indonesian healthcare research. A uniform religious affiliation therefore does not imply identical spiritual experiences.

The specific question addressed here is whether recorded coping and spirituality categories are associated with contemporaneous quality of life among patients undergoing hemodialysis at Sekarwangi Regional General Hospital, Sukabumi

Regency. The objective was to describe these categories and evaluate their separate bivariate associations with quality of life. The local contribution is the joint consideration of two psychosocial dimensions in a hospital dialysis service. Indonesian HTJ research linking diabetes and hypertension with mortality in CKD further supports attention to clinical context¹⁰. The present study examines quality of life rather than mortality, and its findings are intended to inform patient assessment rather than demonstrate an intervention effect.

Materials and Methods

Study Design

This quantitative correlational study used a cross sectional design in the Dialysis Unit of Sekarwangi Regional General Hospital, Sukabumi Regency, West Java, Indonesia. Coping mechanisms, spirituality, and quality of life were evaluated as contemporaneous variables. The analysis concerns the recorded categories at the study assessment and does not establish which variable preceded another. The reporting structure separates participant selection, measurement, analysis, and ethical oversight in accordance with STROBE principles¹¹.

Sample

The study sample comprised 100 patients with CKD receiving hemodialysis in the hospital dialysis unit. Participants were selected through accidental sampling, a nonprobability approach based on access to patients at the study setting. The unit of analysis was the patient rather than the number of dialysis visits. Consequently, the sample represents the recruited patients and does not provide a probability estimate for all patients with CKD in Sukabumi Regency. Every table uses the 100 analyzed patients as its denominator unless a subgroup denominator is specified.

The recruitment approach and achieved sample size are reported separately from statistical inference. The sample size of 100 is the observed enrollment and is not described as a calculated minimum or a census of the service population. Age, sex, education, marital status, employment, religion, family living arrangement, dialysis duration, and treatment frequency characterize the recruited sample. Religion and family living arrangement had no variation in the reported data. These variables can describe the setting but cannot explain differences between participants through an exposure contrast.

Data Collection Technique

Questionnaires were used to assess coping mechanisms, spirituality, and quality of life. Demographic and treatment characteristics were recorded categorically. The analyzed psychosocial variables were adaptive or maladaptive coping, low, medium, or high spirituality, and good or lower quality of life. The term lower quality of life standardizes the original label not so good without changing membership of that category. The categories are retained as recorded analytical classifications, rather than diagnostic thresholds or independently established clinical states.

Coping was assessed with the instrument identified as the Brief COPE. The original instrument contains 28 items distributed across 14 two item subscales, with responses scored from 1 to 4 and larger subscale scores representing greater use of the corresponding coping response⁵. Its multidimensional structure is relevant: a binary adaptive or maladaptive classification requires a defined grouping and scoring rule. The analyses below concern the study's recorded coping classification; they do not interpret a single overall score as a validated universal measure of adaptive coping. Published item structure is

provided as instrument context, not as evidence that a particular translation or modified grouping was validated in this sample.

Spirituality was assessed with the DSES. The original scale has 16 items, including 15 frequency items and an item addressing closeness to God⁷. Its scoring direction depends on the chosen coding convention: in the original frequency coding, smaller values correspond to more frequent experiences. Underwood's overview discusses coding and interpretation, which are important when translating scores into ordered categories¹². Here, low, medium, and high designate the recorded spirituality groups. They are not equated with the frequency of formal worship or assigned numerical boundaries from an unrelated validation study.

Quality of life was assessed using an instrument identified as the Kidney Disease Quality of Life (KDQOL). The original KDQOL combines general health assessment with kidney disease concerns¹³. Indonesian validation studies support use of a specified KDQOL 36 version^{14,15}. That version comprises generic physical and mental components and kidney specific burden, symptom, and effect domains; higher kidney specific domain scores on a 0 to 100 scale indicate better quality of life¹⁵. These external findings support the importance of version specific assessment. They are not used to infer that the KDQOL 36 version, a particular total score, or a published cutoff was necessarily applied in the present study.

The reported outcome is the binary quality of life classification, and the analysis does not substitute domain scores for it. Published psychometric coefficients for one instrument version or population do not establish measurement properties in another sample. Accordingly, no new sample specific reliability coefficient, validity estimate, or clinically validated cutoff is asserted. This distinction

keeps the interpretation focused on the classifications actually analyzed and avoids attributing external validation results to the 100 study participants.

Data Analysis Technique

Frequencies and percentages summarize participant characteristics and psychosocial variables. Counts in Tables 5 and 6 are accompanied by row percentages, showing the proportion with each quality of life category within a coping or spirituality group. Pearson chi square statistics and expected counts were recalculated to evaluate contingency table assumptions¹⁶. For the 2×2 coping comparison, one expected count was below five, so a two sided Fisher exact test is used for inference. For the 3×2 spirituality comparison, all expected counts exceeded five; the Fisher Freeman Halton exact test is additionally reported to characterize the unusually concentrated distribution¹⁷. Zero observed cells alone are distinguished from inadequate expected counts.

The 3×2 exact test conditions on row and column margins and sums probabilities of feasible tables with probabilities no larger than that of the observed table. The significance threshold was 0.05. Statistical significance is reported as $p < 0.001$ rather than $p = 0.000$. Reporting includes cell counts, denominators, tests, and uncertainty in accordance with SAMPL priorities¹⁸. The original analysis used SPSS; the exact tests and intervals presented here were recalculated from the reported contingency counts using Python and SciPy, with enumeration for the 3×2 table.

The principal effect estimate for coping is the difference in the proportion classified as having good quality of life: the adaptive group proportion minus the maladaptive group proportion. An approximate 95% confidence interval was calculated using the Newcombe method based on separate Wilson intervals

without continuity correction¹⁹. This produces a finite, interpretable estimate despite a zero cell. An additional exploratory contrast compares high spirituality with the combined low and medium groups using the same method; it supplements, and does not replace, the overall three category test. These are differences in contemporaneous proportions, expressed in percentage points, rather than differences in incident risk.

The zero cells produce unbounded crude odds ratio estimates, so finite conventional logistic odds ratios are not reported as if estimable. Cramér $V = \sqrt{(\chi^2 / N)}$ for these tables, because the smaller table dimension is two. It summarizes association strength. Analyses are unadjusted. Separate marginal tables cannot identify joint distributions of coping, spirituality, demographics, and clinical covariates, so no adjusted regression coefficient is reconstructed. Separation would also require attention in any subsequent logistic model; penalized estimation is a relevant option when individual records and a justified covariate specification are available²⁰.

Ethical Consideration

Ethical approval was recorded under reference 001362/KEP STIKES SUKABUMI/2026 from the Sukabumi College of Health Sciences ethics committee. Results are presented as aggregated counts, and no participant name or personal identifier appears in the tables or figure. Ethical approval is distinguished from reporting of individual consent procedures. The analysis and interpretation retain the participants' reported classifications without adding unrecorded clinical or personal attributes.

Result

One hundred patients were analyzed. Women accounted for 69 patients (69.0%); 42 (42.0%) had elementary education, 93 (93.0%) were

married, and 88 (88.0%) were not working. All participants were recorded as Muslim and living with family. Ninety one had received hemodialysis for one to five years and nine for more than five years; all received treatment

twice weekly. Table 1 presents the characteristics. The two identically labeled older age rows are combined as 67 patients to avoid implying distinct age bands without defined boundaries.

Table 1. Respondent characteristics (N = 100)

Characteristic	Recorded category	n	%
Age group	Adolescent	1	1.0
	Adult	32	32.0
	Older age categories combined	67	67.0
Sex	Male	31	31.0
	Female	69	69.0
Education	Elementary school	42	42.0
	Junior high school	28	28.0
	High school	27	27.0
	College	3	3.0
Marital status	Unmarried	2	2.0
	Widowed	5	5.0
	Married	93	93.0
Employment	Working	12	12.0
	Not working	88	88.0
Religion	Muslim	100	100.0
	Other recorded religions	0	0.0
Living with family	Yes	100	100.0
	No	0	0.0
Dialysis duration	One to five years	91	91.0
	More than five years	9	9.0
Dialysis frequency	Once weekly	0	0.0
	Twice weekly	100	100.0

Percentages use N = 100. The combined older category sums the two original rows labeled elderly (65 and 2); no numerical age boundaries are assigned. Widowed combines one widower and four widows. Frequency counts correspond to the reported treatment percentages.

Adaptive coping was recorded in 91 patients (91.0%) and maladaptive coping in nine (9.0%), as shown in Table 2. Table 3 shows 59 patients (59.0%) with high spirituality, 28 (28.0%) with medium spirituality, and 13 (13.0%) with low spirituality. Table 4 reports 60 patients (60.0%) classified as having good quality of life and 40 (40.0%) in the lower category. These percentages describe the recorded categories within the recruited sample.

Good quality of life occurred in 60 of 91 patients (65.9%) with adaptive coping and none of nine (0.0%) with maladaptive coping. The two sided Fisher exact test gave $p < 0.001$ (Table 5). The difference was 65.9 percentage points, with an approximate 95% confidence interval of 34.3 to 74.8. Pearson $\chi^2(1)$ was 14.835, and Cramér V was 0.385. One expected count was 3.6; the exact test therefore provides the primary p value.

Table 2. Coping categories (N = 100)

Category	n	%
Adaptive	91	91.0
Maladaptive	9	9.0
Total	100	100.0

Table 3. Spirituality categories (N = 100)

Category	n	%
Low	13	13.0
Medium	28	28.0
High	59	59.0
Total	100	100.0

Table 4. Quality of life categories (N = 100)

Category	n	%
Good	60	60.0
Lower	40	40.0
Total	100	100.0

Tables 2 to 4 use the full sample denominator. Lower quality of life corresponds to the original not so good category.

Table 5. Coping and quality of life (N = 100)

Coping category	Good n (%)	Lower n (%)	Total n
Adaptive	60 (65.9)	31 (34.1)	91
Maladaptive	0 (0.0)	9 (100.0)	9
Total	60 (60.0)	40 (40.0)	100

Row percentages. Fisher exact $p < 0.001$ (calculated $p = 0.000144$). Difference in good quality of life proportions, adaptive minus maladaptive: 65.9 percentage points (approximate 95% CI 34.3 to 74.8). Pearson $\chi^2(1) = 14.835$; Cramér $V = 0.385$. Expected counts in row order: 54.6, 36.4, 5.4, 3.6.

Good quality of life was recorded in none of 13 patients (0.0%) with low spirituality, one of 28 (3.6%) with medium spirituality, and all 59 (100.0%) with high spirituality. The overall Fisher Freeman Halton exact test gave $p < 0.001$ (Table 6). Pearson $\chi^2(2)$ was 95.982, and

Cramér V was 0.980. All six expected frequencies were above five. The exploratory high versus combined low and medium contrast was 97.6 percentage points (approximate 95% CI 85.7 to 99.6).

Table 6. Spirituality and quality of life (N = 100)

Spirituality category	Good n (%)	Lower n (%)	Total n
Low	0 (0.0)	13 (100.0)	13
Medium	1 (3.6)	27 (96.4)	28
High	59 (100.0)	0 (0.0)	59
Total	60 (60.0)	40 (40.0)	100

Row percentages. Overall Fisher Freeman Halton exact $p < 0.001$ (calculated $p = 2.983 \times 10^{-27}$). Pearson $\chi^2(2) = 95.982$; Cramér $V = 0.980$. Expected counts in row order: 7.8, 5.2, 16.8, 11.2, 35.4, 23.6. Exploratory high versus combined low and medium contrast: 59/59 versus 1/41, difference 97.6 percentage points (approximate 95% CI 85.7 to 99.6).

Figure 1 displays the proportion with good quality of life within each coping and spirituality category. Numerators and denominators identify the unequal group sizes.

The figure represents separate bivariate comparisons and does not show jointly classified coping and spirituality groups or an adjusted relationship.

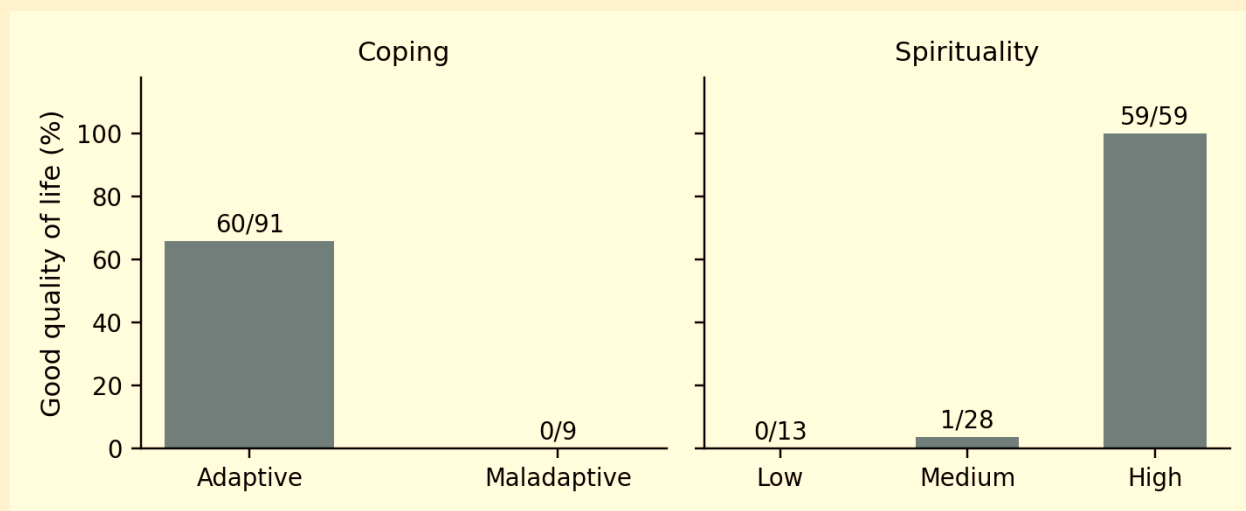


Figure 1. Good quality of life within coping and spirituality groups. Labels show the count with good quality of life divided by the group total.

Both recorded psychosocial variables were associated with quality of life in separate unadjusted comparisons. Adaptive coping was common in the sample, whereas good quality of life was recorded in 60.0%. The spirituality distribution showed a particularly strong association with the binary outcome. Exact tests and proportion differences describe these observed associations without establishing independent effects, temporal ordering, or benefit from a psychosocial intervention.

Discussion

Interpretation of Key Findings. The coping comparison answers the study question through an observed difference in quality of life between the recorded groups. Adaptive coping was associated with a greater proportion classified as having good quality of life, but 31 patients with adaptive coping remained in the lower category. Thus, adaptive coping and good quality of life were not interchangeable. Coping may help patients respond to practical demands or regulate distress, while physical

symptoms can continue despite effective coping. The multidimensional Brief COPE framework supports examining distinct responses rather than treating a broad label as a uniform psychological mechanism⁵.

The spirituality comparison was much more concentrated: every participant in the high group had good quality of life, and only one participant outside that group had good quality of life. This pattern warrants interpretation at the level actually measured. It indicates a strong relationship between two recorded classifications, but does not demonstrate that spirituality independently improves physical functioning or reduces dialysis complications. Shared response tendencies, score construction, dichotomization, or unmeasured wellbeing may contribute to the concentration. Research on categorizing continuous measures describes the loss of information associated with dichotomization²¹. Continuous and domain

scores would help distinguish gradations that binary categories cannot represent.

Meaning, hope, acceptance, and social connection are plausible pathways connecting spiritual experience with perceived wellbeing. These pathways remain interpretations rather than mediators demonstrated here. All respondents were Muslim, but spirituality varied across three categories, illustrating the distinction between formal religious affiliation and individual experience. DSES theory addresses ordinary experiences of connection rather than religious membership alone^{7,12}. Equally, better wellbeing may make spiritual participation or positive coping easier. The simultaneous assessment cannot distinguish these possible directions.

Comparison with Previous Studies. Wahyuningsih and Astuti described coping and quality of life in patients receiving hemodialysis²², while Luftia reported an association between coping categories and quality of life in another Sukabumi dialysis service²³. These studies provide Indonesian clinical context, but differences in sampling, instruments, and category rules mean that percentages are not directly interchangeable. The three unit study by Ibrahim and colleagues used the Jalowiec Coping Scale and a WHO quality of life instrument and found different relationships across coping dimensions⁶. That finding reinforces the importance of interpreting the construct actually measured rather than treating all coping scales as equivalent.

Patel and colleagues examined religious beliefs, perceived social support, depressive symptoms, and quality of life in hemodialysis patients, identifying associations across these psychosocial measures²⁴. The broader review by Burlacu and colleagues also describes relationships between spirituality, religiosity, and dialysis quality of life⁸. Such evidence supports studying spiritual experience within

comprehensive care, but does not establish the same effect magnitude across settings. The near complete separation in the present table should therefore not be presented as a universal pattern for patients receiving dialysis.

The relevant HTJ articles address complementary clinical questions. Sari and colleagues discuss ultrafiltration and blood pressure during dialysis⁴, Na'imah and colleagues assess spiritual activity and cognition in older people⁹, and Yonata and Islamy examine comorbidity and mortality in CKD¹⁰. These distinct outcomes support attention to physical treatment burden, spiritual experience, and clinical context. None directly validates the present category cutoffs or proves that changing coping or spirituality would change quality of life. Their relevance lies in informing a broader assessment rather than substituting external outcomes for the study's observations.

Clinical and Public Health Implications. Dialysis nurses can ask patients how they handle treatment demands, what concerns affect daily life, and whether spiritual or psychosocial support is desired. An adaptive coping label should not end the assessment because one third of that group still had lower quality of life. Support should respond to symptoms and patient priorities, with spiritual care offered according to individual preferences. Referral for persistent distress or practical difficulties can complement nephrology care. The present study identifies assessment priorities; it did not test a support program, and a low spirituality category is not a diagnosis or a reason to withhold care.

Intervention evidence helps place these recommendations in context. A 2024 review evaluated psychoeducational interventions for psychological distress and quality of life in maintenance hemodialysis, finding effects that varied by outcome and follow up²⁵. A 2025 review of spiritual interventions found

improvement in hope but did not establish benefits for anxiety or depression symptoms²⁶. These results support careful selection of goals and outcomes when considering support programs. Spiritual support should complement clinical and psychological care, with benefit evaluated through appropriate measures instead of assumed from an observational association.

Advantages and Limitations of the Research. The study provides a focused description of two psychosocial variables in 100 patients from a local dialysis service. Presenting complete contingency counts and group denominators allows the associations to be evaluated transparently. Exact testing addresses the small expected count in the coping table, and proportion differences provide finite estimates when zero cells prevent a conventional finite odds ratio. All reported contingency margins agree with the descriptive counts. These features improve interpretability while keeping conclusions tied to the recorded categorical measurements.

The study was conducted in one hospital and used nonprobability recruitment. Patients encountered during recruitment may differ from those not available or not recruited, limiting generalizability. The cross sectional design cannot establish temporality or causation. Self reported measures are susceptible to response tendencies and social desirability; administering related questionnaires within the same assessment can introduce shared method variation. The homogeneous religious affiliation and family living profile restrict comparison of different social settings. The combined older age category avoids duplicate labels, but cannot provide age specific inference without numerical age boundaries.

Measurement interpretation is limited to the recorded categories rather than verified continuous domain scores. Instrument version,

translation, grouping, and cutoff differences can alter category membership, and external reliability studies do not establish reliability in this sample. The unadjusted tables do not account for age, sex, education, marital or employment status, dialysis duration, comorbidity, anemia, nutritional status, or treatment burden. Indonesian research has identified relationships between clinical factors and hemodialysis quality of life²⁷. Consequently, the observed coping and spirituality associations cannot be presented as independent of those factors or of each other.

The nine patients with maladaptive coping constitute a small comparator group. Although the coping difference is statistically significant, its confidence interval reflects the limited precision of that comparison. The stronger spirituality pattern involves zero cells and near complete separation, requiring particular attention to measurement and model specification. A standard logistic model can yield unstable or unbounded estimates under separation²⁰. A large association statistic does not resolve recruitment bias, common measurement effects, or confounding, and it does not by itself identify the benefit achievable by an intervention.

Recommendations for Future Research. A multicenter longitudinal study should record the instrument versions and scoring rules, retain continuous subscale and domain scores, and measure psychosocial variables before subsequent quality of life assessment. Recruitment should document eligible patients, refusals, and exclusions. Covariates should include demographic characteristics, comorbidity, dialysis duration, anemia, nutrition, and treatment burden, selected according to a clinical rationale. Sufficient sample size and methods suitable for separation are needed if categorical outcomes are retained²⁰. Prospective evaluation of a defined support program would address benefit more

directly than repeating a cross sectional association. In current practice, the proportionate implication remains individualized assessment and access to support according to patient needs.

Conclusion

Among 100 patients receiving hemodialysis at Sekarwangi Regional General Hospital, recorded coping and spirituality categories were each associated with quality of life in unadjusted exact tests. Good quality of life was more frequent in the adaptive coping group and was concentrated in the high spirituality group. These findings support individualized assessment of coping, spiritual preferences, and everyday treatment burden within nursing care. Multicenter longitudinal research with explicit measurement rules and covariate adjustment is needed to evaluate temporal relationships and potential benefits of support interventions.

Acknowledgment

The authors thank Sukabumi College of Health Sciences and Sekarwangi Regional General Hospital, Sukabumi Regency, for supporting the study.

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Conflict of Interest Statement

The author(s) declare no commercial, financial, or personal conflicts of interest related to this research. All authors approved the final manuscript and consented to its publication in *Healthy Tadulako Journal*.

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