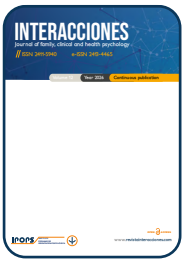
INTERACCIONES
Journal of family, clinical and health psychology
// ISSN 2411-5940 e-ISSN 2413-4465

www.revistainteracciones.com



ORIGINAL ARTICLE

Life satisfaction and perceived overload as predictors of mental health in caregivers of psychiatric patients in the Peruvian Andes: A cross-sectional study

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Received: September 03, 2025 | **Revised:** December 27, 2025 | **Accepted:** January 25, 2026 | **Published Online:** January 26, 2026.

CITE IT AS:
Alanocca Quispe, P., Calderon Apaza, J. (2026). Life satisfaction and perceived overload as predictors of mental health in caregivers of psychiatric patients in the Peruvian Andes: A cross-sectional study. *Interacciones, 12*, e478. https://doi.org/10.24016/2026.v12.478

ABSTRACT

Introduction: Caregivers of psychiatric patients in the Peruvian Andes face unique challenges where most people do not receive the necessary health care.

Objective: To analyze the association of life satisfaction and perceived competence with mental health, determining their incremental explanatory contribution after controlling for sociodemographic variables and perceived overload.

Method: Cross-sectional study with 102 informal caregivers (85.3% women) recruited in four Community Mental Health Centers in Puno, Peru. Mental health (MHI-5), overload (Zarit), life satisfaction (SWLS), and sociodemographic variables were measured. A hierarchical linear regression analysis with bootstrapping (5000 samples, BCa) was performed to handle data non-normality, in addition to non-parametric comparisons (Kruskal-Wallis).

Results: The final model explained 48.5% of the variance (R^2 adjusted = .48). Through bootstrapping, life satisfaction (β =0.41, p <.001) and perceived competence (β=−0.27, p=.004) showed robust significant associations with mental health. A displacement effect was observed where overload, significant in the first model, lost statistical significance (p =.103) upon introducing psychological resources. Likewise, a low level of instruction (primary and secondary) remained a significant risk factor compared to higher education.

Conclusion: Self-perception of competence and life satisfaction act as protective factors that displace the direct impact of perceived overload.

Keywords: Mental health; Life satisfaction; Perceived burden; Caregivers.

INTRODUCTION

Caregivers in Latin America continue to exhibit alarming health conditions, as they are a valuable yet vulnerable resource (Gaviria et al., 2023; Montorio et al., 1998). Given that mental health lies in the affective component of emotions and mood, while the life satisfaction section is a global, cognitive judgment process in which the individual evaluates the quality of their existence based on their own criteria and internal standards. They are forced to reorganize their life and adapt them to the needs of the dependent, facing a double burden of responsibilities that lead them to assume new physical, psychological, economic, material, and social demands (Hernandez-Beltran & Bonilla-Farfan, 2024). Added to this, mental disorders are found to be the primary disability in the world, as one in eight people suffers from some mental disorder (World Health Organization [WHO], 2022). Just in Peru, cases of mental dysfunctions are more than 13 million, with a growing attention in anxiety (18.81%), depression (13.66%), and Psychological disorders (14.94%) (Ministry of Health [MINSA], 2025). Moreover, Puno is the second department in Peru with the most significant care

gap, with 89.2% of people receiving low care, meaning that out of every 10 people, 7 do not receive the care they require (Defensoría del Pueblo, 2025).

The growth of this problem generates a significant segment of dependent patients, consequently, the need for more caregivers; however, the majority of these people lack access to constant and effective care, leading to this labor being occupied more frequently part by part by family members (Oleas et al., 2024), who often assume this role without the knowledge or necessary skills, remaining vulnerable to emotional distress due to drastic changes in their life, thus affecting their well-being and emotional balance (Peng et al., 2023). The evidence collected in a Colombian meta-analysis helps us dimension the problem in similar sociocultural contexts, where 53% of caregivers experience overload, with 31% at a severe level. Said study profiles the informal caregiver as a woman (85%) between 18 and 60 years old, who assumes this responsibility alone (61%), often in conditions of economic vulnerability (65% in a situation of poverty or extreme poverty) and without access to formal employment (85%) (Gaviria et al., 2023). In defining the term, informal caregivers are people who care for someone in their social network, voluntarily and without direct remuneration (Muñoz et al., 2020; Rogero, 2010). These new changes and responsibilities are not distributed equitably, thus generating a primary caregiver, who is the most vulnerable piece of the chain; for this reason, they are denominated as a silent patient, as they accumulate physical and psychological ailments, which hide behind the demands of the sick family member (Tripodoro et al., 2015).

As precedent evidence to this study, the following investigations are presented as research antecedents. In Asia, the predictability of overload on the quality of life of 459 caregivers of people with mental illnesses was investigated, through intermediate variables (anxiety, depression, and self-esteem), finding a significant relationship of overload to the evaluated quality of life domains (mental health $R^2 = 0.61$, and environment $R^2 = 0.41$ social relationships $R^2 = 0.35$) demonstrating a high explanatory capacity in the physical and psychological domains; furthermore, it was identified that caregivers of schizophrenic patients had a lower quality of life compared to the rest of disorders (bipolar disorders, severe depression), (Cheng et al., 2022). Within this line of studies performed, 825 informal caregivers from 6 different countries in Europe were surveyed, the result of the sample of quality of life related to caregiver health was inversely correlated with overload with a coefficient ($r = -0.180; p < 0.001$) evidencing that the greater the caregiver overload, the lower the quality of life (Valcárcel et al., 2022). In Valencia, Spain, similar results were found when evaluating 136 primary caregivers; 65.5% of the sample presented elevated levels of overload affecting mainly psychological health, among the other means evaluated (physical health, mental health, social relationships, and environment) (Gallardo et al., 2023). Likewise, within a study in Italy, 91 caregivers of patients with cognitive disorders and motor disabilities were evaluated, within this it was found that the most significant predictor among the variables (life satisfaction, resilience, and depression) of perceived overload was life satisfaction ($\beta = -0.51$, $R2 = 0.31$) which explained 31% of the variance index (Fianco et al., 2015). In Germany, 489 informal caregivers were evaluated, seeking to compare the differences between mental health, quality of life, and care overload, between genders during the second wave of COVID 19 when caring for patients ≥60 years; with significant statistical differences in women regarding men in symptoms: depressive ($\beta = 1.00, p < 0.05$), anxious ($\beta = 1.38, p < 0.01$), of overload ($\beta = 2.00, p < 0.05$) and quality of life ($\beta = -2.16, p < 0.01$), finding that women were more prejudiced in their care labor in this period (Zwar et al., 2023). Thus, a significant correlation is observed between the patient's degree of dependence and the caregiver's level of overload, as registered in Cuba, where 68% of caregivers showed being severely overloaded when caring for totally dependent people ($p < 0.05$) (Gómez et al., 2024). This implies that the greater the patient's dependence, the fewer of their needs the informal caregiver can cover (Duran et al., 2024; Ramos et al., 2023). On the other hand, Hajek and König (2018) did not find a significant associative relationship between the start of informal care and the mental health of caregivers, in their study performed in Germany on 13,300 caregivers; however, an association was found with their life satisfaction ($\beta = -0.14, p < 0.001$).

On the other hand, in Latin America, an investigation was performed in Nuevo León, Mexico on 210 informal caregivers (family members), significant negative correlations were found between overload and quality of life ($r = -0.314$), physical well-being ($r = -0.337$), psychological ($r = -0.388$) and social ($r = -0.287$) each element with a significance level ($p < 0.001$) that is to say, it presents a moderate and negative relationship between quality of life and its dimensions (Marroquín et al., 2023). In Nivea, Colombia, 68 caregivers participated in a study that found a low, statistically significant relationship between overload and well-being: physical ($r = 0.333$), psychological ($r = -0.122$), and social ($r = 0.541$) (Cantillo et al., 2022). Also in Buenos Aires, Argentina, a study was performed in which overload was evaluated in 64 primary caregivers, the quality of life and their coping strategies, in which a significant negative correlation was evidenced between overload and the dimension of psychological health ($r = -.38$; $p = 0.002$) (Hauché et al., 2025).

For this study purpose, a psychiatric patient is someone with a diagnosed mental disorder whose severity, persistence, and functional impact place them in a severe or grave category (Pina et al., 2024). This excludes personality disorders (except schizotypal), substance abuse, disorders without psychotic symptoms, eating disorders, and recurrent depression (UK National Health Service [NHS], 2024). To furthermore clarify the conceptual mechanisms and justify the selection of variables, a theoretical Directed Acyclic Graph (DAG) is presented (Figure 1). Where the variables influential to Mental health are hypothesized. In response to the need for parsimony, Life Satisfaction was prioritized over broader constructs like 'Quality of Life'; as it is a global construct that houses different thematic fields (Ramirez et al., 2019); while Life Satisfaction represents the specific cognitive judgment (Baghino & Cortelletti, 2021); which directly mediates the impact of external circumstances (Overload) on Mental Health. Likewise, other factors like self-esteem and being dependent on external feedback are exposed to short-term

fluctuations (Hank & Baltes, 2019), making their evaluation in relation to mental health difficult. Sociodemographic variables that did not show direct theoretical relevance in the context of the clinical sample studied were omitted.

Despite the growing importance of mental health, previous evidence, both national and international, on the subject has not addressed the joint interaction of our variables as factors associated with the psychological well-being of caregivers. Added to that, most of these investigations focus on caregivers of people dependent due to physical disabilities, where overload is addressed as a purely global construct. In this way, research on caregivers of people with severe mental disorders is limited, especially in Perú, where current articles on the subject are scarce. This research contributes a new perspective by analyzing caregivers of psychiatric patients in the Andean context of low resources, demonstrating through a hierarchical analysis that the self-perception of competence possesses a displacement effect on overload, which will allow a deeper and more updated understanding of the dynamics of life satisfaction, perceived overload, and mental health in caregivers. This reorients clinical intervention priorities in the region: programs should not focus solely on care overload, but predominantly on skills training and cognitive reinforcement of life satisfaction to shield the caregiver's mental health.

In this way, the research had as a general objective, to analyze the association of Life Satisfaction and Perceived Competence with Mental Health, determining their incremental explanatory contribution when controlling for the effect of the Degree of Instruction, the Patient's Diagnosis, and Perceived Overload; and as specific objectives: To evaluate the initial association of sociodemographic variables (degree of instruction and patient's diagnosis) and perceived overload with the caregiver's mental health; To determine the incremental explanatory contribution of psychological resources (life satisfaction, competence, and interpersonal relationships) in the variance of mental health, and To compare the levels of mental health, overload, and psychological resources according to the diagnosis of the care receiver (Schizophrenia, ASD, and others) to identify significant differences between groups.

METHODS

Design

The study is developed using a quantitative approach, with a non-experimental, cross-sectional design. It is framed within an associative-predictive strategy, as defined by Ato et al. (2013), since it seeks to estimate the degree of association between a criterion variable and multiple independent variables.

Participants

The population consists of 102 caregivers of users with open or current medical records at the 4 community mental health centers operating in Juliaca in 2025. Data was collected between May and July, with authorization from the network coordination and the heads of each center. Inclusion criteria used were (full-time or part-time caregivers of dependent people due to a diagnosed psychiatric disorder, of both sexes; caregivers who have reached the age of majority, 18 years; having provided care to the user for at least 3 months; and having informed consent); as exclusion criteria, it was established: (That the caregiver has some permanent or temporary disability that prevents answering the tests' questions coherently, having cared for the user for less than 3 months; patient receives less than 2 psychotherapeutic sessions per month; patient does not have a psychiatric diagnosis).

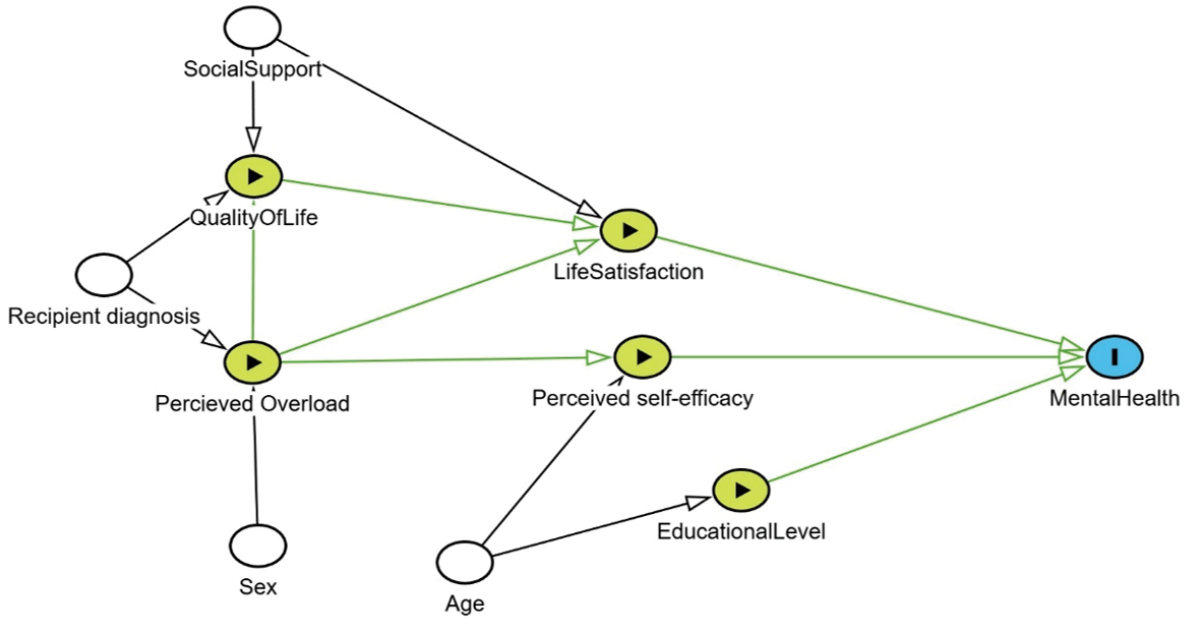

Figure 1. Directed acyclic graph.
Note: The nodes represent the variables observed in the study. The green arrows indicate the direct causal trajectories estimated in the regression model.

To calculate the minimum sample size necessary for the theoretical model, the software G*Power 3.1.9.7 (Faul et al., 2009) was used with the following parameters (f^2) = 0.35, (α) = 0.05, (1- β) = 0.95, N° predictors 10, obtaining a minimum required participants of 77; which allows performing the study with sufficient statistical significance (Cohen, 1992). Thus, the sample was estimated by a non-probabilistic convenience sampling, based on the researchers' selection criteria and resources (Otzen & Manterola, 2017).

Variables

The consequences of living with a person affected by some severe illnesses are known as "care overload" or "family burden", which encompasses the subjective and objective conditions the caregiver goes through (Gulayín, 2022). Perceived overload is a state of feeling sad, stressed, and constantly frustrated experienced by a caregiver of someone dependent, as this definition encompasses not only the clinical field but also the social and economic spheres (Márquez et al., 2025). In the same way, burden refers to emotional and physical health alterations that occur when demands exceed available resources (Sánchez et al., 2016).

On the other hand, the Pan American Health Organization (2023) states that mental health is a state of emotional well-being that enables people to face difficult moments in life through the development of skills, which are a fundamental mechanism for adequate coexistence in a community. Being that well-being and health are individual capacities. Furthermore, satisfaction is defined as a mental state, a positive valuation of something. The term encompasses both this context and that of "enjoyment", integrating both cognitive and emotional appreciations (Veenhoven, 1994). Under that proposal, life satisfaction is understood as a judgment that endures in a time-dependent context, in which the person values their well-being by comparing their standards of living with their current situation (Calderón et al., 2018). Therefore, satisfaction is important because it reflects the cognitive equilibrium between adequate achievement and personal expectations (Mikulic et al., 2019).

Instruments

To evaluate life satisfaction, the questionnaire (SWLS) Satisfaction With Life Scale was used, created by Diener et al. (1985); due to the need to measure how satisfied the population is with their life coming to possess multiple items, this was designed to evaluate the general opinion of life is an individual to evaluate individual satisfaction; it was based on the concept of life satisfaction by Shin and Johnson (1978) who define it as: "A global assessment of a person's quality of life according to their chosen criteria." Previously validated in various Peruvian studies, including that of Calderón et al. (2018), which presented adequate goodness-of-fit indices (GFI = 0.998, RMSEA = 0.073, SRMR = 0.067). Likewise, it has reported optimal reliability (ω = 0.90) in a population aged 19 to 64 years. Finally, it indicates that the instrument evaluates in one dimension the satisfaction with life with a multiple response scale as an ordinal measure of five response options under the Likert scale: 1 = strongly disagree, 2 = slightly disagree, 3 = neither agree nor disagree, 4 = slightly agree, 5 = strongly agree. In the present research, internal consistency indices of Cronbach's alpha (α = 0.731) and McDonald's omega (ω = 0.740) were obtained.

On the other hand, to evaluate the perceived overload variable, the Zarit Burden Interview was used, which was originally developed by Zarit et al. (1980). This has the purpose of explaining how mental, physical health, and labor and economic aspects are compromised when caring for a sick person with dementia. In the Peruvian context, it was validated previously in a population of caregivers with intellectual disability of 398 informal caregivers between 24 and 65 years old. The instrument consists of 15 items across 4 dimensions: overload, competence, social relationships, and interpersonal relationships. These items have Likert response options: (0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Often, 4 = Almost always). Regarding the validity evidence, goodness-of-fit indices were found (CFI = 0.95, RMSEA = 0.055, TLI = 0.94), with optimal reliability evidence (ω = 0.740) (Domínguez et al., 2023). For the current population, internal consistency indices of Cronbach's alpha (α) = 0.863 and McDonald's omega (ω) = 0.866 were obtained.

Finally, to evaluate mental health, the Mental Health scale MHI-5 was used, the original version created by Berwick et al. (1991), validated in the Peruvian context in the adult population, between the ages of 17 and 45 years by Vilca et al. (2022). It is a brief measure composed of five items, with a Likert-type response format and four options (never, sometimes, often, and always), where never is worth 0 and always is worth 3. In the adaptation study, the scale evidenced adequate psychometric properties. In relation to construct validity, a confirmatory factor analysis was performed, yielding adequate fit for the proposed unidimensional model (CFI = 0.99, TLI = 0.99, and RMSEA = 0.07). For the present research, internal consistency indices of Cronbach's alpha (α = 0.773) and McDonald's omega (ω = 0.790) were obtained.

Data analysis

After collecting the data through surveys and individual interviews, the data were transcribed manually into Microsoft Excel, ensuring that each item column was correctly coded to the pertinent scales. For data analysis, Jamovi 2.3.28.0 software and JASP 0.95 were used. The grouped discrete variables were analyzed using measures of central tendency, dispersion, and distribution (skewness, kurtosis, quartiles, mean, median, and standard deviation). Furthermore, the univariate normality of the variables was checked under the Kolmogorov-Smirnov test (Hernández et al., 2014). This suggests a non-normal distribution, as the significance levels exceed the 0.05 threshold. Given the non-normality in two variables, Spearman's Rho correlation coefficients were used.

After that, a Hierarchical Linear Regression with Bootstrapping (5000 resamples) of the BCa type was performed to account for the nonparametric nature of the data. Variables were introduced in two functional blocks. In Block 1, control variables (Degree of instruction, Care hours, Patient disorder) and overload were included. In Block 2, psychological resources (Competence, Life satisfaction, Social and interpersonal relationships) were added. The categorical variables (Degree of instruction

and Patient diagnosis) were transformed into dummy variables for the regression analysis, using 'Higher Education' and 'Schizophrenia' as reference categories, respectively. After that, the change in R2 (ΔR2) were analyzed, additionally, the assumptions of multiple linear regression were verified as pointed out by Vila-Baños et al., (2019), including linearity, normality of residuals, homoscedasticity, independence of errors and absence of multicollinearity of independent variables; finally, the analysis of unstandardized coefficients was performed to quantify the predictability between the variables.

Ethical considerations

The present research was submitted to the Ethics Committee of the Faculty of Health Sciences of the Universidad Peruana Unión for subsequent approval under resolution N°2025-CEB-FCS – UPeU-075. Furthermore, the parameters of the Declaration of Helsinki of the World Medical Association (WMA, 2024) are followed, where human rights in research are held as priority, safeguarding integrity, health, dignity, privacy, as well as confidentiality of all participants, reaching a great responsibility as researchers protecting the obtained information. Only coming to use it for research purposes, this with the backing of the College of Psychologists of Peru, which according to chapter 10 of the code of ethics and psychological deontology, confidentiality is a crucial point not to identify the participants, ethnic group or institution, respecting the autonomy of the respondents and participants through obtaining informed consent prior to their participation, guaranteeing their understanding of the study objectives, and their right to refuse or withdraw at any moment (Colegio de Psicólogos del Perú, 2017).

RESULTS

102 informal caregivers of users of community mental health centers were surveyed; based on the results, a data matrix inspection was performed prior to the inferential analysis. No missing values were detected (0% of missing data) in the study variables, which is attributed to the face-to-face data collection strategy performed by trained personnel, who verified the completeness of the questionnaires in situ. The surveyed caregivers had an average age of 39.8 (SD = 9.79) years, of whom 85.3% are of the female gender, which is equivalent to (87 caregivers), while 14.7% represent the male gender with (15 caregivers); the most common patient-caregiver relationship found was that of parents with 78.4% (n=80), followed by siblings 9.8% (n=10), with 11.8% (n=12) being children, partners, and other immediate family members; on the other hand, the time of care most found was between 4 to 10 years with 50% (51) followed by 1 to 3 years with 41.2% (n=42), more than 10 years are 3.9% (4). In the degree of instruction, it was found that 47.1% (n=48) have complete secondary studies, 33.3% (n=40) pursued higher studies, 12.7% (n=13) have complete primary studies, 1% (n=1) have incomplete primary studies; in the religion section, 86.3% (88) claim to be Catholic, 3.9% (n=4) are Christian, and 2.9% (n=3) are Adventist. The caregiver's place of residence is 91.2% (n=93) in Juliaca, 8.8.% (n=9) live in other provinces (Moquegua, Tacna, Arequipa, Moho), finally in the section of dependent's disorders, 38.2% (n=39) present schizophrenia, 37.3% (n=38) suffer from ASD, 10.8% (n=11) belong to ADHD, 13.7% (n=14) present other psychiatric disorders.

When distributing the scores of overloads, life satisfaction, competence, social and interpersonal relationships, according to the care receiver's diagnosis in three groups: schizophrenia (n = 39), autism spectrum disorder (ASD, n = 38), and other diagnoses (n = 25), the descriptive analysis of the variables showed similar average scores. The non-parametric Kruskal Wallis statistical analysis confirmed that these differences were not significant regarding the dimensions of: Overload (X^2 =0.87,p = .647); life satisfaction (SWLS) (X^2 = 2.70,p = .259); competence (X^2 = 2.11,p = .348) nor social relationships (X^2 = 3.51,p = .173); but there were significant variations regarding the interpersonal relationship with the care receiver (X^2 = 6.68,p = .035), where caregivers of people with schizophrenia present the highest average (M = 5.90, Me = 7), while Other diagnoses presented the lowest levels, being in turn the most heterogeneous group (M = 3.92, ME = 3, SD = 3.17).

In Table 1, the assumption of normality was calculated through the Z statistic, obtained by dividing the skewness and kurtosis values by their respective standard errors. Considering a significant and non-normal deviation if the value exceeds ±2 (George & Mallery, 2003). Under said criteria, the variables of mental health, life satisfaction, overload, and social relationships found normal values in both skewness and kurtosis; however, deviations from normality were observed in the competence variable, with a significant negative skewness (Z = -2.27) with a tendency towards high scores; as well as in the variable of interpersonal relationships, where a significant negative kurtosis was found (Z = -2.01), suggesting a platykurtic distribution.

Table 2 shows the correlations among the three variables and dimensions (overload, competence, social relationships, and interpersonal relationships). Life satisfaction and mental

Table 1. Table of normality of variables.

			Skewness		kurtosis	
	Mean	SD	Value	SE	Value	SE
Mental health	6,48	3,22	0,36	0,24	-0,57	0,47
Life satisfaction	13,08	3,78	0,39	0,24	0,01	0,47
Overload	8,45	3,40	-0,15	0,24	-0,55	0,47
Competence	12,32	3,97	-0,54	0,24	-0,35	0,47
Social relationship	6,03	2,88	-0,13	0,24	-0,85	0,47
Interpersonal relationship	5,19	3,02	-0,17	0,24	-0,95	0,47

health show a moderate positive correlation. Likewise, life satisfaction and mental health correlate inversely with perceived caregiver overload and its dimensions, indicating that, at higher levels of life satisfaction and mental health, they are associated with lower perceptions of caregiver overload, and vice versa.

The five assumptions of regression were considered: linearity, independence of errors, homoscedasticity, normality, and non-multicollinearity, all of which were met (Vila et al., 2019).

In Table 3, the first block explained 20.9% of the variance. The inclusion of the psychological variables in the second block significantly increased the model's explanatory capacity by an additional 32.5%. The change in R^2 (ΔR^2 = .325, p < .001) was significant, indicating that the psychological variables contribute an additional 32.5% of unique explanation to the model.

As observed in Table 4, after applying bootstrapping, in Model 1, overload was a significant negative predictor (β = -.265; 95% CI BCa [-.446, -.058]; p = .011), indicating that, when considering only basic variables, greater overload is associated with lower mental health. Likewise, the degree of instruction showed a considerable association, with having only completed primary education versus complete higher education associated with lower mental health (β = -3.251; 95% CI BCa [-5.203, -1.373]; p = .002). In the same way, having a complete secondary education as the highest educational level obtained, versus having complete higher education, predicted lower mental health (β = -1.98; 95% CI BCa [-3.39, -.49]; p = .001). Upon introducing the psychological resources in Model 2, the caregiver's degree of instruction emerged as the most robust associated factor, where caregivers with complete primary education versus those with completed higher education, presented lower indices of mental health (β = -2.19; 95% CI BCa [-3.75, -.7];p= .004), similar results were observed when comparing complete secondary education versus complete higher education (β = -2.09; 95% CI BCa [-3.264, -.99];p< .001), followed by competence (β = -.27; 95% CI BCa [-.43, -.08];p= .003) and life satisfaction (β = .41; 95% CI BCa [.26, .55];p< .001). After the inclusion of these psychological resources, the overload dimension ceased to be statistically significant (β = -.17; 95% CI BCa [-.04, .37]; p = .112). The dimensions of Social and Interpersonal Relationships did not result in significant differences.

DISCUSSION

The purpose of this study was to determine the degree of association of life satisfaction and perceived overload on mental health. For this, a multiple linear regression model was estimated which explained 48.5% of the variance, where it was observed that life satisfaction (β = .41; 95% CI BCa [.26, .55];p< .001), the caregiver's self-perception of competence (β = -.27; 95% CI BCa [-.43, -.08];p= .003) and the level of instruction, compared between primary education to completed higher education (β = -2.19; 95% CI BCa [-3.75, -.7];p= .004) and secondary education to completed higher education (β = -2.09; 95% CI BCa [-3.264, -.99];p< .001) were significantly associated with mental health.

Competence showed a negative association regarding mental health (β = -.27; 95% CI BCa [-.43, -.08]; p= .003). In line with previous investigations, it was identified that self-efficacy was significantly related to the mental health of caregivers, β = .10 (p = .001) (Clarke et al., 2021), as well as negatively to depressive symptoms (β = -1.647; p< .001) (Tang et al., 2015). Suggesting that, the negative perception a person has about their capacity to provide care (Albarracín et al., 2016), or the "competence" factor, is directly associated with their mental health. Determining their level of motivation and confidence, thus beliefs in personal capacities can transform apparently threatening situations into manageable situations, preventing risky behaviors and promoting adaptive behaviors (Zenteno et al., 2017). On the other hand, under Ellis's parameters, this lack of confidence in one's own skills would be in irrational beliefs such as perfectionist expectations (Ellis & Grieger, 1981). These results position the caregiver's perception of their own capacities as a mechanism strongly associated with their mental health.

Subsequently, life satisfaction was the second most robust positive relationship (β = .41; 95% CI BCa [.26, .55];p< .001), which is in line with other studies in informal caregivers in the Netherlands, where life satisfaction was significantly associated with psychological well-being (β = .155, p= .016) (Bremmers et al., 2024). That suggests that life satisfaction, which is the comparison between the individual's subjective standard and their personal circumstances (Diener et al., 1985), acts as a positive

Table 2. Table of correlations.

	SWLS	CI 95%	Mental Health	CI 95%
Mental health	0.535 (< .001)	0.371 to 0.655	–	–
Overload	-0.328 (< .001)	-0.202 to -0.536	-0.265 (< .007)	-0.122 to -0.475
Competence	-0.345 (< .001)	-0.175 to -0.516	-0.468 (< .001)	-0.356 to -0.645
Social relationships	-0.383 (< .001)	-0.217 to -0.547	-0.290 (< .003)	-0.164 to -0.508
Interpersonal relationships	-0.182 (< .067)	0.008 to -0.368	-0.395 (< .001)	-0.225 to -0.553

Table 3. Model summary.

Model	*R*	*R* square	*R* square adjusted	*RMSE*
M_1	0,455	0,207	0,166	2,939
M_2	0,729	0,531	0,485	2,308

psychological resource for the caregiver; in other words, maintaining standards close to their current life condition (Calderón et al., 2018). It acts as a resilience-promoting factor (WHO, 2022), making life satisfaction a significant and protective factor for the mental health of caregivers.

The caregiver's level of instruction was negatively and significantly associated with mental health when comparing completed higher education (reference group) against completed primary education (β = -2.19; 95% CI BCa [-3.75, -.7];p= .004) and against completed secondary education (β = -2.09; 95% CI BCa [-3.264, -.99];p< .001), evidencing that caregivers with a lower educational level are associated with worse mental health. In the same line of research, there are precedents that the highest educational level obtained acts as a protective factor against various disorders, such as major depression, alcohol dependence, generalized anxiety, ADHD, and PTSD (Demange et al., 2024), for it is associated with better cognitive skills, emotional regulation and cooperation which is linked to better mental health (Jareebi et al., 2024). This phenomenon is especially seen in women of primary or lower educational levels since they are 86% more prone to suffering anxious or depressive disorders (Bacigalupe et al., 2020).

Finally, the non-significance of the overload score in our final model is of particular interest (β = -.17; 95% CI BCa [-.04, .37]; p= .112), for it disagrees with similar studies, where the overload coefficient on mental health or psychological well-being was: β = -.40, p< .001 (Nah et al., 2022). β = -.294, p< .001 (Bremmers et al., 2024) β = -.262; p= .001 (Agyemang et al., 2024). Furthermore, literature on caregiver well-being has consistently established overload as a variable related to negative results in mental health or psychological well-being, as it is associated with symptoms of sadness, feelings of burden, and stress (Marquéz, 2025). In our results, a displacement effect is observed due to the statistical control of variables (Becker, 2005). While in the first model a significant negative association was observed between overload and mental health (β = -.264; 95% CI BCa [-.45, -.06]; p = .017), the effect disappeared upon introducing the other psychological resource variables (p = .112). Especially the "competence" variable, which, due to its specificity, seems to capture the variance associated with mental health that, otherwise, would be attributed to overload. This relationship is not commonly explored due to methodological limitations rooted in the original Zarit test's global overload score (Zarit et al., 1980), and it does not imply that care overload is irrelevant; instead, it suggests that the caregiver's perception of competence is a more robust protective factor. This theoretical model would explain why a direct relationship between providing informal care and the caregiver's mental health is not always found (Hajek and König, 2018).

Limitations and strengths

The present study must be interpreted considering the methodological limitations presented. The cross-sectional design prevents the observation of variables over time; furthermore, an influence of third variables, mediating variables, or reverse directionality not measured cannot be ruled out; furthermore, the selection of the sample being non-probabilistic by convenience limits generalizing findings to the general population of caregivers of the region (Etikan et al., 2016). At the same time, the selection bias inherent to intrahospital recruitment

Table 4. Hierarchical Multiple Regression

Model		β (CI 95%)	Bias	SE	p
M_1	(Intercept)	10.689 (8.298 to 12.572)	-0,01	1089,00	< .001
	Overload	-0.265 (-0.446 to -0.058)	0,00	0,10	0,011
	Others - schizophrenia	-0.507 (-2.093 to 1.043)	-0,02	0,80	0,526
	ASD - schizophrenia	-0.907 (-2.506 to 0.647)	-71,21	0,80	0,226
	Primary education - higher education	-3.251 (-5.203 to -1.373)	-0,01	0,97	0,002
	High school - higher education	-1.983 (-3.389 to -0.487)	-0,01	0,74	0,010
M_2	(Intercept)	5.959 (2.694 to 9.304)	0,01	1692,00	< .001
	Overload	0.169 (-0.043 to 0.374)	-0,01	0,11	0,112
	Others - schizophrenia	-1.212 (-2.532 to 0.125)	-0,01	0,68	0,075
	ASD - schizophrenia	-1.166 (-2.424 to 0.016)	-0,01	0,62	0,053
	Primary education - higher education	-2.193 (-3.745 to -0.700)	-0,04	0,78	0,004
	High school - higher education	-2.092 (-3.264 to -0.999)	0,00	0,57	< .001
	SWLS	0.409 (0.265 to 0.553)	0,00	0,07	< .001
	Self competence	-0.274 (-0.432 to -0.083)	-0,00	0,09	0,003
	Social relationships	-0.001 (-0.234 to 0.217)	-0,00	0,11	0,999
	Interpersonal relationship	-0.153 (-0.369 to 0.093)	0,01	0,12	0,192

Note: Bootstrapping based on 5000 samples. Schizophrenia and completed higher education were used as reference variables.

is recognized, considering a regional mental health care gap of 89.2% (Defensoría del Pueblo, 2025), which excludes caregivers without access to the formal system. Likewise, the instruments (SWLS, Zarit, and MHI-5) have national validation; the lack of specific adaptation to the Andean context could introduce cultural or linguistic biases in the local population's interpretation of the items.

Just as the mentioned limitations, the study also possesses several notable strengths; the main one is the analytical approach that allows the deconstruction of the concept of overload, since the version of the Zarit instrument by Albarracín et al. (2016) does not measure overload as a global construct. However, as a further dimension, by isolating its components, we managed to discern which exerts the greater effect within the proposed model, offering a view of the specific psychological mechanism of association, moving away from the traditional approach predominant in the literature. On the other hand, data collection was conducted by trained personnel in a face-to-face and individual manner, ensuring the quality of the collected information.

Recommendations

Based on the results, it is recommended that interventions for caregivers of psychiatric patients focus on strengthening perceptions of competence, increasing life satisfaction, and facilitating access to educational opportunities. At an individual level, caregivers must receive practical, continuous training that helps them feel secure in their role, as well as psychological support and self-care spaces that enhance their overall well-being. For researchers, beyond the direct relationships between competence and mental health and between life satisfaction and mental health, it would be helpful to investigate variables that mediate or moderate those relationships. On the other hand, public entities should implement accessible training programs, create emotional support networks, and offer services that foster a balance between personal life and care. Finally, at the level of public policies, it is proposed to formally recognize the caregiver's role, develop interventions centered on the improvement of perceived competence and life satisfaction, and include indicators like life satisfaction and perception of competence in institutional evaluations, to ensure integral and sustainable accompaniment of those who fulfill this essential labor in the mental health system.

Conclusions

The results of this study indicate that the mental health of caregivers in the sample studied is strongly associated with their level of instruction, life satisfaction, and self-perception of competence, and the final model presented explained 48.5% of the variance.

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FUNDING SOURCE

This paper was self funded and supported by "Universidad Peruana Unión" in collaboration with "Red de salud San Roman".

CONFLICT OF INTEREST

The authors declare that there were no conflicts of interest in the collection of data, analysis of information, or writing of the manuscript.

ACKNOWLEDGMENTS

Not applicable.

REVIEW PROCESS

This study has been reviewed by two external reviewers in double-blind mode. The editor in charge was David Villarreal-Zegarra. The review process is included as supplementary material 1.

DATA AVAILABILITY STATEMENT

The authors attach the database as supplementary material 2.

DECLARATION OF THE USE OF GENERATIVE ARTIFICIAL INTELLIGENCE

We used DeepL to translate specific sections of the manuscript and Grammarly to improve the wording of certain sections. The final version of the manuscript was reviewed and approved by all authors.

DISCLAIMER

The authors are responsible for all statements made in this article.

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