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Family functioning, depression, violence, and their influence on suicide risk in Peruvian adults

Funcionalidad familiar, depresión, violencia y su influencia sobre riesgo suicida en adultos peruanos

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Abstract

Suicide is a global public health problem. This basic, predictive, non-experimental cross-sectional study analyzed the influence of Family Functionality (FF), Depression (D), and Risk of Violent Behavior (RV) on Suicide Risk (SR) in 1,678 Peruvian adults using structural equation modeling. The results showed that D has a direct and significant effect on SR, with VR being the second most relevant predictor. In addition, low FF, being between 18 and 30 years old, being born in Lima, being single, widowed, or divorced, having low educational attainment, not practicing sports or religion, sleeping less than 4 hours, and having chronic or mental illnesses were associated with higher levels of D, VR, and SR ($p < .05$). It is concluded that addressing psychological and socio-family factors is essential to prevent suicide risk.

Keywords: family functioning, depression, suicide risk.

Resumen

El suicidio constituye un problema de salud pública a nivel mundial. Este estudio, de tipo básico, predictivo y diseño no experimental transversal, analizó en 1,678 adultos peruanos la influencia de la Funcionalidad Familiar (FF), la Depresión (D) y el Riesgo de Conducta Violenta (RV) sobre el Riesgo Suicida (RS) mediante modelamiento de ecuaciones estructurales. Los resultados evidenciaron que la D ejerce un efecto directo y significativo sobre el RS, siendo el RV el segundo predictor más relevante. Además, una baja FF, tener entre 18 y 30 años, haber nacido en Lima, ser soltero, viudo o divorciado, poseer baja escolaridad, no practicar deporte ni religión, dormir menos de 4 horas y presentar enfermedades crónicas o mentales se asociaron con mayores niveles de D, RV y RS ($p < .05$). Se concluye que abordar factores psicológicos y sociofamiliares es esencial para prevenir el riesgo suicida.

Palabras clave: funcionalidad familiar, depresión, riesgo suicida.

Introduction

Suicide represents a significant global public health issue, with over 720,000 deaths each year (Organización Mundial de la Salud [OMS], 2024). In 2021, it was the third leading cause of death among individuals aged 15 to 29 years, with 73% of cases occurring in low- and middle-income countries. In Peru, the number of suicides rose from 391 in 2023 to 735 in 2024, with the regions of Arequipa (120) and Lima (115) being the most affected. By August 2024, there had been 1,620 reported suicide attempts, predominantly among females (72.47%) and individuals aged 15 to 19 years (Infobae, 2025). This upward trend underscores the urgent need to strengthen public policies for the prevention and management of mental health issues

Evidence indicates that family dysfunction and violence, along with mood disorders—particularly depression—are critical determinants of suicidal behavior among adolescents (Garza et al., 2019). Insufficient communication and emotional expression within the household heighten suicidal ideation (Marco-Sánchez & Mayoral-Aragón, 2020; Gavilanes & Gaibor, 2023), while the social environment plays a decisive role in the psychological well-being of youth (Lozano et al., 2024).

Furthermore, the literature suggests that exposure to both domestic and social violence serves as a strong predictor of suicidal ideation. Psychological violence, physical abuse, and parental neglect induce emotional insecurity and increase vulnerability to suicide (Sánchez et al., 2020; Menezes & Ribeiro, 2024). Gender-based violence and filio-parental violence are also recognized as significant risk factors (Loinaz et al., 2020; Palma-Durán & Ruiz-Callado, 2023).

Various factors heighten vulnerability to suicide risk, including hereditary mental disorders, social rejection, emotional loss, unemployment, addiction, isolation, and family dysfunction (Cañón & Carmona, 2018; Lázaro, 2020). Suicidal risk is also associated with psychosocial variables such as depression, anxiety, alcohol consumption, and a lack of social support, as well as sociodemographic and familial factors like gender, living alone, and dysfunctional communication (Nicho-Almonacid et al., 2023; Yama, 2021). In this context, depression is identified as the primary psychopathological factor involved, being present in 53.7% of adolescents hospitalized after a suicide attempt. Moreover, its coexistence with anxiety and impulsivity significantly increases the likelihood of suicidal attempts (García-Martín et al., 2020; Gómez et al., 2020).

Internationally, studies in Asia indicate that victimization from bullying is associated with suicidal ideation and attempts, mediated by depression, rumination, and experiential avoidance (Wang et al., 2023). Depression serves as the main predictor among females, whereas anger is predominant among males (Xuan et al., 2023). Psychoticism, severity of depression, and childhood neglect also predict youth suicide (Lu et al., 2024). In South Korea, childhood adversities increase suicidal ideation among elderly adults, with social support acting as a protective mediator (Lee et al., 2024). In Europe, emotional intelligence and familial support are correlated with a reduction in suicidal ideation among adolescents (Galindo-Domínguez & Losada, 2023). In Spain, 16.3% of university students reported suicidal risk associated with academic procrastination and poor emotional regulation (Gómez-Romero et al., 2020). In Ecuador, family dysfunction is inversely related to suicide risk, particularly among women, with most youth who attempted suicide coming from dysfunctional families (Gavilanes & Gaibor, 2023; Dávila-Pontón et al., 2024).

In Latin America, depressive and anxiety disorders are more prevalent in Paraguay and Brazil, while serious mental illnesses such as schizophrenia are reported more frequently in Chile, Argentina, Uruguay, and Costa Rica (Organización Panamericana de la Salud [OPS], 2018). In Peru, by September 2022, there were 513 registered deaths by suicide, 55% of which were among youth and adolescents aged 12 to 25 years, with an estimated 20 attempts for every suicide (Infobae, 2022).

Moreover, 39% of medical interns reported suicidal ideation, with anxiety identified as a risk factor and family communication regarded as a protective element (Aguilar-Sigueñas & Villarreal-Zegarra, 2022). A positive relationship was also found between domestic violence and suicidal risk among high school students in Tacna (Gutiérrez, 2022), along with a direct association between domestic violence and depression in schoolchildren from Arequipa (Flores, 2023). In Áncash, life purpose acted as a mediator between domestic violence and suicide risk among students in Chimbote (Rodríguez, 2023).

In this regard, early screening of risk factors is crucial for suicide prevention through comprehensive mental health care and family strengthening. Enhancing communication and emotional expression helps to reduce suicidal ideation (Marco-Sánchez & Mayoral-Aragón, 2020), while timely access to psychological and psychiatric treatment is essential for managing mood disorders associated with suicide (García-Martín et al., 2020).

Thus, the present study analyzes the relationship between family functionality, depression, and the risk of violent behavior to better understand suicide risk among Peruvian adults.

Methodology

Study design

This research was conducted as a basic study with a predictive, non-experimental, and cross-sectional design, employing structural equation modeling (Ato & Vallejo, 2013).

Participants

The sample consisted of 1,678 Peruvian adults, a number deemed excellent for factorial and structural analysis (Comrey & Lee, 1992). A non-probabilistic intentional sampling method was utilized (Otzen & Manterola, 2017) with participants aged 18 to 70 years residing in Peru (Instituto Nacional de Estadística e Informática [INEI], 2018), all of whom provided informed consent. The sample predominantly included young women between 18 and 30 years (41.7%), single individuals (40.6%), and students (32.4%). The majority reported no chronic illnesses (42.7%) or mental health history (46.2%), did not engage in regular physical activity (38.5%), and slept seven hours or less (33.0%).

Procedure

The study was conducted in accordance with the Declaration of Helsinki (Asociación Médica Mundial [AMM], 2024) and the Code of Ethics for Research at the National University of Federico Villarreal (UNFV). It received approval from the Ethics Committee of the Faculty of Psychology under Resolution No. 1327-2023-UNFV (February 2, 2023).

The research process comprised five phases: project development, selection of freely accessible instruments, application of a virtual questionnaire via Google Forms, data collection with guaranteed consent and confidentiality, and data cleansing and coding for analysis

Instruments

- **Sociodemographic Questionnaire**: This instrument included items on age, gender, marital status, educational level, occupation, sports and religious practices, hours of sleep, place of birth and residence, family type, and history of physical or mental illnesses.
- **Family Functioning Scale (APGAR):** Developed by Smilkstein (1978, 1982) and adapted for Peru by Castilla et al. (2014), this scale assesses satisfaction with family relationships; a higher score indicates better functionality. Reliability in this study was $\alpha = .86$.
- **Patient Health Questionnaire-2 (PHQ-2):** This tool measures depressive symptoms experienced in the past two weeks, with a range of 0–6, where a higher score indicates greater depression. Reliability was $\alpha = .79$.
- **Plutchik Violence Risk Scale (ERVP):** This scale evaluates violent behaviors and feelings using 12 items (Plutchik et al., 1976). Reliability was $\alpha = .80$.
- **Plutchik Suicidal Risk Scale (ERSP):** This Spanish-adapted version by Rubio et al. (1998) measures suicidal risk through 15 dichotomous items. Reliability was $\alpha = .82$.

Statistical analysis

Initial data cleansing and descriptive analyses were performed. Normality was assessed using the Kolmogorov-Smirnov test. Correlations and group comparisons were analyzed. For structural modeling, SPSS and AMOS 26 (IBM Corporation, 2019) were used.

Subsequently, statistical assumptions were verified in RStudio. Non-multicollinearity was confirmed with correlations ranging from .002 to .897 (Tabachnick & Fidell, 2019). Linearity was tested using Pearson's coefficient (Cohen, 1992). Mardia's test indicated a lack of multivariate normality ($p < .001$), prompting the use of the WLSMV method (Suh, 2015) via the lavaan package (Rosseel, 2012).

Model fit was assessed using χ^2/gl (Kline, 2016), CFI, and TLI (≥ .90; Hu & Bentler, 1999), RMSEA, and SRMR (< .08; Browne & Cudeck, 1993). Direct, indirect, and total effects were calculated ($p < .05$), along with effect sizes (Acock, 2023) and R^2 (Cohen, 1992).

Finally, a multi-group analysis by gender was conducted, confirming configural, metric, and scalar invariance. Despite slight variations in indices (Cheung & Rensvold, 2002; Chen, 2007), partial invariance was estimated, revealing genuine differences in depression and violence risk, while maintaining the model structure.

Results

Comparative analysis of variables included in the study

In gender comparisons, the male group demonstrated higher levels of Family Functioning (FF) ($p < .05$), while the female group exhibited significantly higher scores in Depression (D), Violence Risk (RV), and Suicidal Risk (RS) ($p < .05$), indicating greater emotional and behavioral vulnerability.

Regarding place of birth, individuals from rural areas reported better FF and lower levels of Feelings of Worthlessness and Suicidal Ideation ($p < .05$). Significant differences were also observed among age groups ($p < .05$): those aged 31 to 50 showed higher FF, while the 18 to 30 age group manifested the highest levels of D, RV, and RS.

In terms of marital status, FF was highest among married participants ($p < .05$), whereas single individuals reported higher D levels, and widowed, divorced, or cohabiting participants exhibited elevated RV. With respect to educational attainment, those with university degrees displayed higher FF, while individuals with no schooling or only secondary education had higher levels of D and RS ($p < .05$).

Concerning employment status, retirees showed greater FF but also higher RV levels, while students and the unemployed reported significantly higher levels of D and RS ($p < .05$). Additionally, lack of physical activity, sleeping fewer hours, and having chronic illnesses were associated with lower FF and greater levels of D, RV, and RS ($p < .05$). A similar trend was observed among participants with a history of mental illness and those not engaged in any religious practice (Table 1).

Table 1

Comparison of evaluation results for the variables FF, D, RV, and RS based on chronic illness history (n=1678)

Means, Standard Deviations, and Correlations with Confidence Intervals

Variables	M	SD	1	2	3
1. Family Functioning (FF)	13.93	4.09	—	—	—
2. Depression (D)	1.65	1.63	-.35**	—	—
			[-.39, -.31]		
3. Violence Risk (RV)	4.74	4.06	-.21**	.33**	—
			[-.25, -.16]	[.28, .37]	
4. Suicidal Risk (RS)	3.81	3.32	-.44**	.62**	.37**
			[-.48, -.40]	[.59, .65]	[.33, .42]

Note: M = mean; SD = standard deviation. Values in brackets correspond to the 95% confidence interval. * $p < .05$. ** $p < .01$.

Variables	Items or Dimensions	Chronic Illness	n	Mean Rank	Mann-Whitney U	Asymp. Sig. (2-tailed)
Family Functioning	FF1, FF2, FF3, FF4, FF5	Yes	211	775.36		
		No	1467	848.73	141.234.500	.039*

Depression	D1, D2	Yes	211	946.16	132.263.000	.000*
		No	1467	824.16		
Violence Risk	RV2, RV3, RV5, RV6, RV7, RV8, RV9, RV10, RV11	Yes	211	945.44	132.414.500	.001*
		No	1467	824.26		
Suicidal Risk	Feelings of Worthlessness	Yes	211	970.42	127.145.000	.000*
		No	1467	820.67		
	Suicidal Ideation	Yes	211	935.14	134.588.500	.001*
		No	1467	825.74		
	Hopelessness	Yes	211	898.25	142.373.000	.025*
		No	1467	831.05		
	Social Factors	Yes	211	970.32	127.165.500	.000*
		No	1467	820.68		

*$p < .05$

Table 2 presents significant negative correlations among family cohesion (FF) and depression (D) (r = −.40), family cohesion and violent behaviors (RV) (r = −.35), as well as family cohesion and suicide risk (RS) (r = −.44). These findings indicate that higher levels of family cohesion are associated with lower levels of depression, violent behaviors, and suicide risk. Additionally, positive correlations were observed between depression and violent behaviors (r = .42) and between depression and suicide risk (r = .52), reinforcing the role of depression as a primary risk factor in the emergence of violent and suicidal behaviors.

Table 2

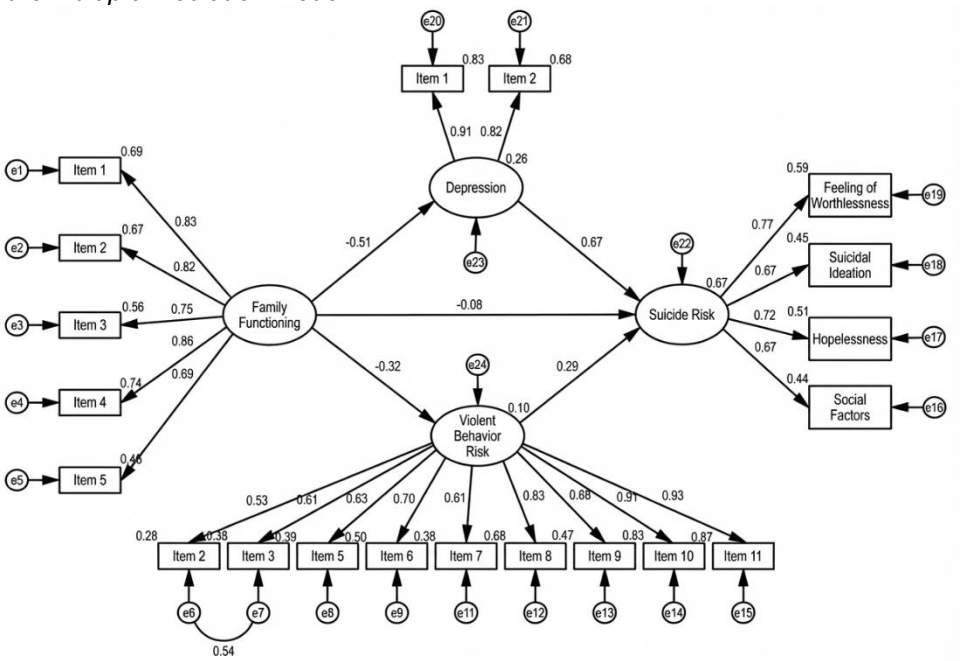
Means, standard deviations, and correlations with confidence intervals

Variables	*M*	*SD*	1	2	3
1. Family Functioning (FF)	13.93	4.09	—	—	—
2. Depression (D)	1.65	1.63	-.35** [-.39, -.31]	—	—
3. Violence Risk (RV)	4.74	4.06	-.21** [-.25, -.16]	.33** [.28, .37]	—
4. Suicidal Risk (RS)	3.81	3.32	-.44** [-.48, -.40]	.62** [.59, .65]	.37** [.33, .42]

*Note. M = mean; SD = standard deviation. Values in brackets correspond to the 95% confidence interval. * p < .05. ** p < .01.*

Figure 1

Path diagram of the multiple mediation model



Note. The model indicates that Family Functioning (FF) directly reduces Suicidal Risk (RS) and indirectly influences it through Depression (D) and Violence Risk (RV). The most significant pathways confirm FF's protective role, both through its direct and mediated effects, in decreasing RS among Peruvian adults.

Table 3 displays the fit indices for the original and re-specified versions of the multiple mediation model. The correlation between items 2 and 3 of the violent behaviors scale (RV) enhanced the overall model fit (ΔCFI = .02; ΔSRMR = −.01). Although the increase in explained variance was minimal ($\Delta R^2 = .01$), the re-specified model provided a more accurate representation of the interactions among family cohesion (FF), depression (D), violent behaviors (RV), and suicide risk (RS). This refinement strengthens the interpretation of the mediation effects.

Table 3

Fit indices for the original and respecified multiple mediation models

Models	χ^2	*df*	χ^2/df	*CFI*	*TLI*	*RMSEA [IC 90%]*	*SRMR*	R^2	Δ R^2	%
Original	1601.84	*165*	*9.71*	.92	.91	.07 [.07; .08]	.09	.66	—	66.4
Respecified	1369.32	164	8.35	.94	.93	.07 [.06; .07]	.08	.67	.01	66.6

Note. The statistical significance of the χ^2 tests was significant at $p < .001$

Figure 2

Analysis of direct and indirect effects of family functioning on suicidal risk (RS)

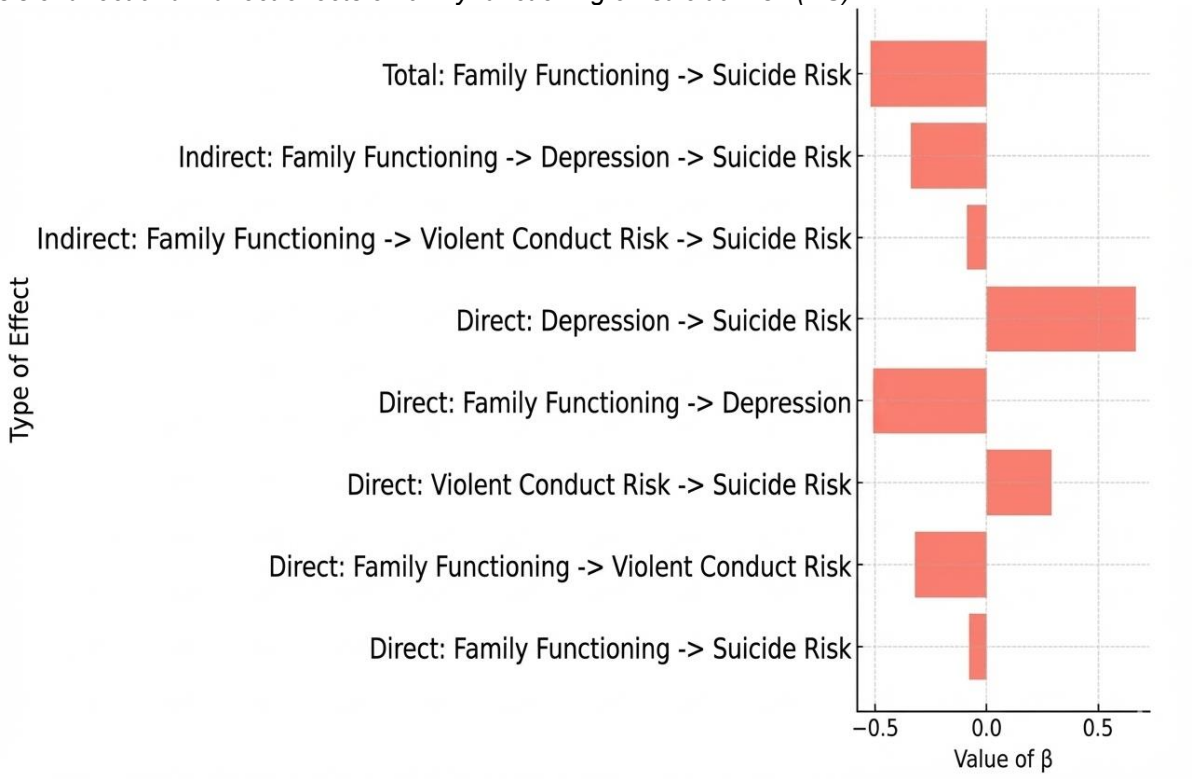


Table 4

Regressions for the multiple mediation model

Criterion	Predictor	Estimate	Std. Error	*z*	*β*	*p*	[IC 90%]	R^2	%
Suicidal Risk	Family Functioning	-.10	.04	-2.22	-.08	.03	[-.02; -.01]	.01	0.64
Violence Risk	Family Functioning	-.20	.03	-11.03	-.32	< .001	[-.38; -.27]	.10	1.24
Suicidal Risk	Violence Risk	.54	.03	8.46	.29	< .001	[-.22; -.35]	.08	8.41
Depression	Family Functioning	-.56	.02	-2.84	-.51	< .001	[-.56; -.46]	.26	26.01
Suicidal Risk	Depression	.73	.03	21.25	.67	< .001	[-.60; -.73]	.45	44.89
Indirect Effect of Violence Risk		-.11	.01	-7.14	-.09	< .001	[-.18; -.07]	.01	0.81
Indirect Effect of Depression		-.41	.03	-13.28	-.34	< .001	[-.39; -.29]	.12	11.56
Total Effect		-.62	.02	-21.56	-.52	< .001	[-.56; -.47]	.27	27.04

The model demonstrated configural, metric, and scalar invariance between males and females. Although differences were identified in the levels of RV, the application of a partial invariance model—releasing items 2 and 7 for the female group—enhanced fit indices and maintained comparative validity. While the change in χ^2 was significant, global indices remained within acceptable ranges, confirming the structural stability and equivalence of the model across both genders.

Table 5

Invariance of the multiple mediation model (n_{males} = 882 y $n_{females}$ = 796)

Levels	χ^2	Δ χ^2	df	Δ df	CFI	Δ CFI	RMSEA	Δ RMSEA	SRMR	Δ SRMR	*p* (Δχ^2)
Configural	1293.005	—	333	—	.949	—	.059	—	.087	—	—
Metric	1159.113	-133.892	349	-16	.957	-.008	.053	.006	.089	-.002	.015
Strong	1461.536	302.423	386	-37	.943	.014	.058	-.005	.089	.000	< .001
Partial	1369.763	-91.773	384	2	.948	-.005	.055	.003	.089	.000	< .001
Strict	1458.523	88.76	390	-6	.943	.005	.057	-.002	.089	.000	.067

Note. *p* (Δχ^2) = Significance test associated with changes in χ^2.

Discussion

From a psychological perspective, the results indicate that greater Family Functioning (FF) is associated with lower levels of Depression (D), Violence Risk (RV), and Suicidal Risk (RS), confirming its protective role over emotional and behavioral well-being. FF directly and indirectly influences RS by reducing D and RV, with D serving as a key mediator. The respecified model demonstrated a good fit (CFI = .94, TLI = .93, RMSEA = .07, SRMR = .08), validating the relationships among FF, D, RV, and RS.

The invariance analysis confirmed that the relationships among FF, D, RV, and RS are consistent across both genders, although differences were noted in some indicators, particularly in RV. These variations, attributable to cultural, social, or biological factors, suggest that while the constructs are comparable, they differ in intensity. Partial invariance ensures that the observed differences reflect real variations rather than measurement errors, thus sustaining the protective role of FF in both groups.

Overall, the results underscore that FF is a critical factor in preventing risky behaviors and emotional disorders, with D playing a decisive role in the emergence of violent and suicidal behaviors. Furthermore, gender differences highlight the necessity for tailored psychological interventions that consider the familial and emotional particularities of men and women.

Recent evidence supports these findings. Dávila-Pontón et al. (2024) indicate that family dysfunction increases RS, a finding consistent with this study. Moreover, D has been identified as a key predictor of RS, especially among women (Xuan et al., 2023; Cañón & Carmona, 2018; De La Cruz et al., 2023), reinforcing its mediating role between FF and RS. Additionally, exposure to violence and bullying is recognized as a relevant risk factor (Gutiérrez, 2022; Wang et al., 2023; Rodríguez, 2023). This accentuates the importance of bolstering FF and promoting emotional regulation as preventive strategies.

The findings also highlight the clinical value of FF and D in preventing RS and reducing violent behaviors (Gavilanes & Gaibor, 2023; Dávila-Pontón et al., 2024). Interventions focused on improving communication, cohesion, and emotional support within families, alongside cognitive-behavioral therapies and support networks, can significantly mitigate risky behaviors. Thus, a comprehensive approach to familial dynamics and individual mental health solidifies itself as an effective strategy for promoting psychological well-being.

Regarding sociodemographic variables, Nicho-Almonacid et al. (2023) support the association of RS with D, anxiety, alcohol consumption, and social support, as well as factors such as gender, living alone, marital status, and history of physical or mental illness.

Lastly, this study acknowledges limitations inherent to its cross-sectional design, which prevents causal conclusions, and its non-probabilistic sampling, which restricts generalizability. Future research is suggested to employ longitudinal designs and include economic and social variables for a broader understanding of RS.

Conclusions

This study confirms that Family Functioning (FF) significantly influences Suicidal Risk (RS) among Peruvian adults, with Depression (D) and Violence Risk (RV) as fundamental mediators. Family dysfunction is associated with higher levels of D and RV, which in turn increase RS. These findings support the initial hypothesis and highlight the necessity of developing interventions aimed at strengthening FF and addressing D and violent behaviors as preventive strategies against suicide in vulnerable populations.

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CONFLICT OF INTERESTS
The authors declare that there are no conflicts of interest.