



The Role of Family Functioning and Social Connectedness in Shaping Individual Quality of Life During the COVID-19 Pandemic

COVID-19 Pandemisi Sürecinde Bireysel Yaşam Kalitesinin Şekillenmesinde Aile İşleyişi ve Sosyal Bağlılığın Rolü

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Abstract

The COVID-19 pandemic disrupted individuals' well-being, social ties and family dynamics. While family and social interactions and bonds are known to enhance psychological adjustment and well-being, their role in influencing individual quality of life during times of crisis remains underexplored. The aims of this study were: to investigate the relationship between family functioning, social connectedness and individual quality of life; and to examine the direct and indirect effects of family functioning on the individual quality of life, through social connectedness, during the COVID-19 pandemic. A cross-sectional study was conducted with 814 participants, using self-report measures. Correlation coefficients were calculated to analyze the associations between variables. Regression-based analyses were performed to examine direct and indirect effects. Social connectedness mediated the link between family functioning and individual quality of life. This mediation model explained 41% of the variance in individual quality of life. These findings highlight the importance of positive family functioning and the sense of safeness and connectedness within the larger social environment in promoting individual quality of life during the COVID-19 pandemic. Interventions that strengthen family relationships seem to foster social bonds and ultimately improve quality of life outcomes in times of societal stress.

Keywords: COVID-19, Family Functioning, Individual Quality of Life, Pandemic, Social connectedness.

Öz

COVID-19 pandemisi, bireylerin iyi oluşunu, sosyal bağlarını ve aile dinamiklerini bozmuştur. Aile işleyişi ve sosyal bağlılığın psikolojik uyum ve iyi oluşu artırdığı bilinmesine rağmen, kriz zamanlarında bireysel yaşam kalitesi üzerindeki etkileri yeterince araştırılmamıştır. Bu çalışmanın amaçları; aile işleyişi, sosyal bağlılık ve bireysel yaşam kalitesi arasındaki ilişkiyi incelemek, ve COVID-19 pandemisi sırasında sosyal bağlılık aracılığıyla aile işleyişinin bireysel yaşam kalitesi üzerindeki doğrudan ve dolaylı etkilerini araştırmaktır. Kesitsel bir çalışma olan bu araştırma, öz-bildirim ölçekleri kullanılarak 814 katılımcıyla gerçekleştirilmiştir. Değişkenler arasındaki ilişkileri analiz etmek için korelasyon katsayıları hesaplanmıştır. Doğrudan ve dolaylı etkileri incelemek için regresyona dayalı analizler yapılmıştır. Aile işlevselliği ile bireysel yaşam kalitesi arasındaki ilişkiyi sosyal bağlılık değişkeni aracılığıyla açıklayan aracılık modeli, bireysel yaşam kalitesindeki varyansın %41'ini açıklamıştır. Bu bulgular, COVID-19 pandemisi sürecinde bireysel yaşam kalitesinin artırılmasında olumlu aile işlevselliğinin ve daha geniş sosyal çevrede güven ve bağlılık duygusunun önemini ortaya koymaktadır. Aile içi ilişkileri güçlendirmeye yönelik müdahalelerin, sosyal bağları destekleyerek toplumsal stres dönemlerinde yaşam kalitesini artırabileceği görülmektedir.

Anahtar Kelimeler: COVID-19, Aile İşleyişi, Bireysel Yaşam Kalitesi, Pandemi, Sosyal bağlılık



Introduction

Connecting with others represents a fundamental human experience that fosters a sense of belonging, purpose and well-being. From early life to major milestones, relationships profoundly influence how individuals adapt to adverse contexts (Cacioppo & Patrick, 2008; McGoldrick et al., 2016). Social connectedness refers to the relationships and interpersonal networks that provide emotional and practical support, foster trust, and facilitate the exchange of resources and knowledge (Edwards et al., 2018). These social connections are essential to mental and physical health (Allen et al., 2021; Edwards et al., 2018; Long et al., 2022; Umberson & Montez, 2010; Xu et al., 2021), forming the foundation for resilience and happiness (Edwards et al., 2018; Kim & Sul, 2023; Umberson & Montez, 2010). Specifically, indicators such as perceived family support, satisfaction with personal relationships and a sense of community offer valuable insights into the strength of human connectedness (Xu et al., 2021).

Family unit characterizes the fundamental basis of social bonds, providing a stable and nurturing environment for emotional support and personal growth (Bronfenbrenner, 1986; McGoldrick et al., 2016; Schwab et al., 2002; Woodman & McArthur, 2017; Xu et al., 2021). Positive family functioning improves mental health outcomes and well-being, such as greater emotion regulation, resilience, and lower levels of distress and anxiety symptoms, providing a vital buffer against adverse life conditions (Gallardo-Peralta et al., 2022; Hart et al., 2020; Lo et al., 2024; Walsh, 1996; Wang et al., 2015; Woodman & McArthur, 2017; Zhang et al., 2024).

The quality of family relationships often exceeds the quantity of broader social interactions (Gallardo-Peralta et al., 2022). However, strong social ties outside the family unit are also crucial for fostering healthier and more functional individuals (Cacioppo & Patrick, 2008; Edwards et al., 2018; Umberson & Montez, 2010). The lack of robust family or social connections has been identified as a significant predictor of psychological distress, including anxiety and depression (INSA, 2020). Cultivating meaningful relationships enhances adaptive coping mechanisms, reduces feelings of loneliness and builds supportive networks, emphasizing the indispensable role of family and social support in improving quality of life (QoL) (An et al., 2024; Cahuas et al. 2023; Edwards et al., 2018; Gallardo-Peralta et al., 2022; Huigita-Gutiérrez & Cardona-Arias, 2016; Lynch et al., 2008; Mendonca et al., 2023; Pineda et al., 2022; Wang et al., 2015; Zengin et al., 2017). QoL can be defined as the “individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns” (World Health Organization, p.3, 2012).

Disruptions to well-being and social bonds during the COVID-19 pandemic

Well-being is built on essential elements such as trust, safety, predictability, and a shared vision of a flourishing society (Walsh, 2020). However, this complex foundation was profoundly destabilized when the World Health Organization (WHO) declared the novel coronavirus disease (COVID-19), a global pandemic. In response to this unexpected crisis, Portugal established a state of emergency, instituting strict confinement measures and severely restricting daily life social routines (Gouveia et al., 2021; INSA, 2020; Vitorino et al., 2024).

The implementation of lockdowns, quarantine measures, physical distancing and the prohibition of in-person activities resulted in a significant transformation in how individuals lived and connected (British Medical Association, 2020; Eicher et al., 2021; Gouveia et al., 2021; INSA, 2020). These public health measures led to a continuous and widespread experience of different losses: including the grief of loved ones or the fear of losing them (British Medical Association, 2020; Prime et al., 2020; Walsh, 2007; Walsh, 2020), the interference in physical connections with family members and social networks (Long et al.,

2022; Prime et al., 2020; Solmi et al., 2022; Walsh, 2020), and the disruption on the economic sphere (British Medical Association, 2020; Feinberg et al., 2021; Gayatri & Puspitasari, 2022; INSA, 2020; Pillay & Barnes, 2020; Prime et al., 2020; Solmi et al., 2022; Vitorino et al., 2024; Walsh, 2020). Furthermore, the disruption of pre-pandemic routines and aspirations, along with the emotional disorientation, led to a world that became largely unrecognizable (Walsh, 2007; Walsh, 2020).

For many individuals, the accumulated effects of the COVID-19 pandemic had significantly diminished their QoL, revealing the fragility of mental and emotional well-being during times of crises (British Medical Association, 2020). This disruption has led to a surge in mental health challenges, including heightened symptoms of anxiety, depression, stress and fear (Ding et al., 2021; Feinberg et al., 2021; Gayatri & Puspitasari, 2022; Manchia et al., 2022; Paulino et al., 2020). These data mirror the effects seen in previous epidemics, such as SARS, MERS and Ebola, which also resulted in lasting psychological strain, and contributed to widespread mental health issues and negative well-being (INSA, 2020).

Yet, amid this adversity, the global crisis has revealed a lasting truth: social connection is the foundation of resilience and well-being (Gayatri & Puspitasari, 2022; Ho et al., 2022; Umberson & Montez, 2010; Walsh, 2020). In moments of collective trauma, such as a global pandemic, feelings of helplessness and uncertainty are expected. However, these trials also awaken an intrinsic, universal drive to seek help, support, and safety in one another (Walsh, 2007; Walsh, 2020). The pain of separation serves as a reminder of the irreplaceable value of close, loving relationships, reinforcing that humanity thrives through enduring connections between individuals (Walsh, 2020; Xu et al., 2020).

Challenges to family functioning during the COVID-19 pandemic

Family functioning refers to the degree to which a family supports the well-being of its members and how effectively they interact with each other (Epstein et al., 1978). The McMaster Model of Family Functioning identifies six essential elements that underpin strong family dynamics: (1) problem-solving, to ensure balance and support (Epstein et al., 1978); (2) open communication, which fosters understanding and strengthens bonds (Epstein et al., 1978; Jackson, 1981; Lo et al., 2024; Schwab et al., 2002; Urbńska-Grosz et al., 2024); (3) defined roles that provide stability through caregiving, managing tasks and ensuring safety (Epstein et al., 1978; Minuchin, 1974); (4) affective responsiveness, which nurtures compassion and understanding (Epstein et al., 1978; Schwab et al., 2002); (5) affective involvement that deepens bonds and promotes closeness (Epstein et al., 1978); (6) behavior control, which sustains harmony by guiding interactions and resolving conflicts (Epstein et al., 1978; Schwab et al., 2002). When these elements align, they foster growth, resilience and connection, balancing practical needs with emotional support to strengthen family bonds and foster hope through adversity (Schwab et al., 2002; Walsh, 2020).

However, during the COVID-19 pandemic, family dynamics were disrupted, with the crisis adding new stressors to the developmental challenges families were already facing. These stressors included economic upheaval (Gayatri & Puspitasari, 2022; Ho et al., 2022; Walsh, 2020), health risks (British Medical Association, 2020; Solmi et al., 2022) and social isolation (Feinberg et al., 2021; Frade et al., 2021; Walsh, 2020). Many struggled to maintain emotional stability, relational cohesion, and effective functioning (Walsh, 2020), as reflected in a reported increase in family violence during this period (Campbell, 2020; Gayatri & Puspitasari, 2022).

Given that family support is a critical determinant of mental, emotional, social well-being (Epstein et al., 1978; Lo et al., 2024; Woodman & McArthur, 2017), as well as personal QoL (Cubero-Plazas et al., 2023; Gallardo-Peralta et al., 2022; Grevenstein et al., 2019; Huigita-Gutiérrez & Cardona-Arias, 2016; Júnior

et al., 2021; Skeens et al., 2023; Wang et al., 2015; Yang et al., 2022), disruptions in this area can have far-reaching consequences on individual outcomes. These include heightened risks of developing depression (Birgisdóttir et al., 2023; INSA, 2020; Urbańska-Grosz et al., 2024), anxiety (Birgisdóttir et al., 2023; INSA, 2020; Wang et al., 2015) and psychological distress (INSA, 2020), which became particularly evident throughout this global health crisis (Feinberg et al., 2021; Fernandes et al., 2020; Gayatri & Puspitasari, 2022; Kim et al., 2024; Wang et al., 2015; Walsh, 2020).

A family-systems perspective highlights how family members are interconnected and how family processes are key in crisis response. The ways a family adapts to managing stress, adjust routines, and build resilience shapes both individual well-being and long-term functioning of the entire family (Walsh, 1996). Therefore, strengthening family relationships during the COVID-19 pandemic helped fostering feelings of safety, enhanced adjustment, and supported the development of both individual and collective resilience (Edwards et al., 2018; Hart et al., 2020; Walsh, 2020; Wang et al., 2015). Notably, higher resilience was associated to fewer pandemic worries, reduced anxiety and depression symptoms, underscoring its importance in safeguarding mental health during crises (Gayatri & Puspitasari, 2022; Ho et al., 2022; Walsh, 2020).

In conclusion, the global crisis highlighted social connection and positive family functioning as key foundations of resilience, well-being and quality of life (Cubero-Plazas et al., 2023; Feinberg et al., 2021; Gallardo-Peralta et al., 2022; Gayatri & Puspitasari, 2022; Júnior et al., 2021; Mendonca et al., 2023; Skeens et al., 2023; Yang et al., 2022). By identifying and fostering the processes that strengthen these dimensions, families and communities can emerge from crises more unified and better prepared to face future adversities (British Medical Association, 2020; Walsh, 1996). Relational bonds and adaptation are not merely responses to hardship, they represent essential pathways to building a supportive and prosperous society (British Medical Association, 2020; Edwards et al., 2018).

The current study

This study aimed to enhance the understanding of how family functioning impacted individual QoL, particularly in the context of the COVID-19 pandemic. It focused on examining the relationship between these factors, while emphasizing the mediating role of social connectedness.

To ensure preparedness for future crises, it was considered crucial to learn from the COVID-19 pandemic response. Research indicated that this global crisis negatively affected several outcomes in the general population, including mental and physical health (Frade et al., 2021; Gayatri & Puspitasari, 2022; INSA, 2020; Paulino et al., 2020; Solmi et al., 2022) and family dynamics (Solmi et al., 2022). Additionally, many individuals experienced a decline in their QoL (British Medical Association, 2020; Eicher et al., 2021).

Despite increasing awareness of the importance of positive family support and relationships (Cubero-Plazas et al., 2023; Skeens et al., 2023; Wang et al., 2015) and connection to others (Cooney et al., 2013; Holt-Lunstad et al., 2017; Mendonca et al., 2023) for QoL, there is still a need to understand the mechanisms through which these factors interact, especially during global crises. Existing studies have provided valuable insights but have not yet explored the mediating role of social connectedness in this dynamic. This gap underscores the importance of examining these relationships thoroughly to support the development of interventions that strengthen family and social resources and guide public health responses in future crises.

The objectives of this study were: (1) to investigate the relationships between family functioning, social connectedness and individual QoL within the general population; and (2) to examine both the direct and indirect effects of family functioning on the individual QoL of the general population, through social connectedness during the COVID-19 pandemic.

The first hypothesis of this study anticipated that family functioning would be positively associated with social connectedness and individual QoL; and that social connectedness would also be positively associated with individual QoL. For the second hypothesis, it was expected that family functioning would influence individual QoL, both directly and indirectly, with social connectedness serving as a mediator in this relationship.

Method

Participants and Procedures

This study employed a quantitative, cross-sectional, correlational design, and was developed within the broader research project. The study received ethical approval from Universidade de Coimbra, and the ethical principles outlined in the Declaration of Helsinki for research involving human participants (World Medical Association, 2013).

Data were primarily collected through online questionnaires using the LimeSurvey® platform ($n = 667$). In addition, 147 participants completed paper-based questionnaires. No incentives were offered. The study utilized a non-probabilistic snowball sampling method for participant recruitment, which could have introduced limitations to the generalizability of the findings.

The project was disseminated through multiple communication channels to maximize reach, including social media platforms (e.g., Facebook© and Instagram©), targeted emails to potential participants and community organizations, and outreach to various media outlets, such as online news platforms.

To ensure data quality, several procedures were implemented: Attention-check questions were included to identify distracted or negligent participation (Gummer et al., 2021). Participants' email and IP addresses were verified to detect and exclude potential automated responses. A seriousness check was also conducted by screening response patterns, such as repeatedly selecting the same answer throughout the questionnaire (Aust et al., 2012). To prevent missing data, the online version employed forced answering, requiring participants to respond to all items before proceeding (Godinho et al., 2020).

The introductory page of the survey outlined the objectives and procedures of the study, and emphasized the voluntary, anonymous and confidential nature of participation. Participants provided informed consent by selecting the option to confirm their understanding and agreement to the terms established for this study.

To be eligible for participation, individuals were required to be at least 18 years old and proficient in Portuguese. Data collection spanned nine months, from September 2021 to June 2022, yielding a final sample of 814 participants aged 18–85 years old ($M = 38.02$, $SD = 13.08$). A comprehensive overview of the participants' sociodemographic and clinical characteristics is presented in the Results section.

Measures

Sociodemographic and clinical questionnaire

The questionnaire was developed specifically for the research project to gather data on sociodemographic characteristics (e.g., age, gender, marital status, academic degree, professional status, household composition), clinical history (e.g., previous psychological or psychiatric treatment) and health-related information about COVID-19 exposure (e.g., "Were you in prophylactic isolation?", "Were there any of your family members or significant others infected with the coronavirus?").

Short Version of the General Functioning Subscale of the McMaster Family Assessment Device

The short version of the General Functioning Subscale of the McMaster Family Assessment Device (Epstein et al., 1983; Boterhoven de Haan et al., 2014; Vitorino et al., 2020), consisting of six positive items, was adapted from the original General Functioning 12-item subscale (GF12), which evaluates both positive and negative dimensions of family functioning. The shortened version (GF6+) was developed by removing negatively phrased items, resulting in a six-item scale (e.g., “In times of crisis, we can turn to each other for support”; “We feel accepted for who we are”).

Responses are rated on a 4-point Likert scale, ranging from 1 (*strongly disagree*) to 4 (*strongly agree*), with the total score divided by the number of items, producing a final mean score between 1 (*worse functioning*) and 4 (*best functioning*). While the original GF12 subscale also exhibited strong internal consistency ($\omega = .92$; $\alpha = .92$), no prior data were available on the reliability of the GF6+ subscale. In the current study, the GF6+ subscale demonstrated excellent internal consistency ($\omega = .92$; $\alpha = .92$).

The Portuguese translation of the shortened version was conducted with prior authorization from the original scale’s authors, following a forward–backward translation procedure. First, the scale was independently translated from English into Portuguese by two researchers fluent in both languages and familiar with the conceptual framework of the instrument. Their translations were compared, and a consensus version was produced.

Subsequently, a third individual, who was fluent in English but unfamiliar with the original version of the scale, performed a back-translation of the Portuguese version into English. Finally, both versions were compared and integrated to ensure conceptual equivalence and consistency in the final Portuguese version of the scale.

The decision to use the GF6+ rather than the full GF12 was primarily guided by practical considerations, such as reducing participant burden and minimizing response fatigue, as well as enhancing clarity by eliminating negatively worded items. While the GF12 offers a broader assessment by capturing both positive and negative aspects of family functioning, the GF6+ retains the core conceptual content and has demonstrated strong psychometric properties (Boterhoven de Haan et al., 2014). Given that family functioning was one of the constructs evaluated in this study, the shorter version offered a more efficient option without compromising reliability or construct validity.

Social Safeness and Pleasure Scale

The Social Safeness and Pleasure Scale (SSPS) (Gilbert et al., 2009; Pinto-Gouveia et al., 2008) is a self-report measure comprising 11 items designed to assess how individuals perceive their social environment, specifically in terms of warmth, safety and soothing qualities. It focuses on aspects such as feeling protected, satisfied and connected to others (e.g., “I feel secure and wanted”; “I feel content within my relationships”; “I feel connected to others”). Participants responded to this instrument using a 5-point Likert scale, ranging from 1 (*almost never*) to 5 (*almost all the time*). The total score was obtained by summing the responses to all items, with higher scores reflecting stronger perceptions of social security and connectedness. In the present study, the scale demonstrated excellent internal consistency ($\omega = .95$; $\alpha = .95$).

Europe Health Interview Surveys Quality of Life Abbreviated Instrument

The EUROHIS-QOL-8 (Schmidt et al., 2006; Pereira et al., 2011) is a one-dimensional self-report measure designed to provide a brief yet comprehensive assessment of QoL. It encompasses multiple indicators

(e.g., "How satisfied are you with yourself"; "How satisfied are you with your ability to perform your daily activities"; "How satisfied are you with your personal relationships") and integrates key elements from the WHOQOL-100 and WHOQOL-BREF instruments developed by WHO (2012). This instrument consists of eight items reflecting the physical, psychological, social and environmental domains. Participants rate their experience of the last two weeks on a 5-point Likert scale, ranging from 1 (*not at all*) to 5 (*completely*). The total score is calculated by summing the item responses, ranging from 8 to 40, with higher scores indicating a more favorable perception of QoL. In this study, the instrument demonstrated good levels of internal consistency ($\omega = .88$; $\alpha = .87$).

Statistical Analysis

Throughout the project, Statistical Package for Social Sciences (SPSS, version 29.0; IBM SPSS, Chicago, IL, USA), and the PROCESS computation tool (version 4.2 for SPSS) (Hayes, 2022) were utilized for statistical analyses. A preliminary analysis conducted with the G*Power tool indicated that a minimum of 776 participants was required to detect small effects in the planned analyses, such as correlation and mediation analyses (Faul et al., 2009). The reliability of the measures was assessed using McDonald's omega and Cronbach's alpha coefficients, considered optimal if the values were higher than .80 (Nunnally & Bernstein, 1994). Descriptive statistics were obtained for all the variables under study.

To analyze the associations among the variables under investigation, Pearson's bivariate correlation coefficients were calculated and classified according to the following guidelines: ± 0.10 to ± 0.29 (weak), ± 0.30 to ± 0.49 (moderate), and ± 0.50 to ± 1.0 (strong) (Cohen, 1998).

To identify potential variables that should be introduced as covariates in the mediation model, Pearson correlations were calculated between the dependent variable (individual QoL) and relevant sociodemographic and clinical variables. The association between age and individual QoL was statistically significant ($r = .12$, $p < .001$). Gender was also significantly associated with individual QoL ($r = .1$, $p < .01$), as well as academic degree ($r = .18$, $p < .001$). Regarding psychologic/psychiatric treatment history, the correlation was statistically significant with individual QoL ($r = .24$, $p < .001$). Therefore, age, gender, academic degree, and psychologic/psychiatric treatment were controlled for the subsequent tested models.

A simple mediation model (Model 4) was performed to examine the regression-based mediating effect of social connectedness on the link between family functioning and individual QoL (Hayes, 2012; Hayes, 2022). The statistical significance of the indirect effects was tested using a bootstrapping procedure with 10 000 samples, which generated 95% bias-corrected and accelerated confidence intervals (95% BCaCIs) (Tabachnick & Fidell, 2007). The indirect effect was significant when the value of zero was not contained in the confidence intervals. Additionally, AMOS software was used to calculate the p -value of the indirect effect. The corresponding effect size was interpreted using the coefficient of determination (R^2), classified as small ($R^2 \geq 0.02$), medium ($R^2 \geq 0.13$), and large ($R^2 \geq 0.26$) (Cohen, 1992). For all the analyses conducted in this study, results were considered statistically significant at a p -value lower than .05.

Results

Sociodemographic and clinical characteristics of the sample

The sample obtained consisted of 814 participants, with ages ranging from 18 to 85 years ($M = 38.02$, $SD = 13.08$). The majority of respondents identified as women ($n = 696$, 85.5%) and lived in urban areas ($n = 526$, 64.3%). Nearly half of the participants were either married or in a non-marital partnership ($n = 393$, 48.3%). In terms of socioeconomic status, most participants were classified as pertaining to medium/high socioeconomic backgrounds ($n = 446$, 54.8%). Regarding health-related factors, 50.9% ($n = 414$) of participants reported a history of psychiatric or psychological treatment. Additionally, 16.6% ($n = 135$) had been identified as being at high risk for complications from COVID-19, 35.3% ($n = 287$) had been infected

with the coronavirus, and 52.5% ($n = 425$) had been in prophylactic isolation. Table 1 provides a detailed summary of the sociodemographic and clinical characteristics of the sample.

Table 1. Sociodemographic and Clinical Characteristics of the Study Sample

Characteristic	<i>N</i>	%
Gender		
Women	696	85.5
Men	115	14.1
Non-binary	3	0.4
Marital status		
Single	346	42.5
Married/Non-marital partnership	393	48.3
Divorced/Separated	64	7.9
Widowed	11	1.4
Academic degree		
No formal education	1	0.1
Primary school	52	6.4
High school	239	29.4
Bachelor's degree	323	39.7
Master's degree	166	20.4
Doctorate (PhD)	16	2.0
Missing	17	2.1
Socioeconomic status ^a		
Low	168	20.6
Middle	407	50.0
High	39	4.8
Missing	200	24.6
Professional status		
Remote work	43	5.3
In-person work	469	57.6
Hybrid work (remote and in-person)	66	8.1
Retired	32	3.9
Unemployed	61	7.5
Student	107	13.1
Missing	36	4.4

Characteristic	N	%
Residential area		
Urban	523	64.3
Rural	288	35.4
Missing	3	0.4
Number of household members		
0 - 2	300	36.8
3 - 6	509	62.5
More than 6	3	0.4
Missing	2	0.2
Previous psychiatric/psychological treatment		
Yes	414	50.9
No	399	49.0
Missing	1	0.1
Risk group for COVID-19		
Yes	135	16.6
No	677	83.2
Missing	2	0.2
Diagnosed with COVID-19		
Yes	287	35.3
No	525	64.5
Missing	2	0.2
Prophylactic isolation		
Yes	425	52.2
No	385	47.3
Missing	3	0.1

Note. N = 814. The mean age of participants was 38.02 years old (*SD* = 13.08).

^a The socioeconomic status was determined using a classification system for the Portuguese context based on the participants' professional status and educational levels (Simões, 1994).

Correlations between variables

All correlations were statistically significant and positive. Results revealed a moderate correlation between family functioning and individual QoL. Additionally, two strong associations were identified: between family functioning and social connectedness, and between individual QoL and social connectedness. Matrix of inter-correlations and the descriptive statistics of the variables are presented in Table 2.

Table 2. Descriptive Statistics and Inter-correlations for Study Variables (N = 814)

Variables	<i>M</i>	<i>SD</i>	1	2
1. Family functioning	19.46	3.74	--	
2. Social connectedness	39.75	9.72	.55**	--
3. Individual QoL	20.70	5.47	.46**	.60**

** $p < .01$

Mediation model

The regression-based analysis demonstrated that heightened levels of family functioning were positively associated with greater social connectedness ($b = 1.3$, $SE = .08$, 95% CI [1.16, 1.46]), and that higher levels of social connectedness, in turn, were also positively associated with greater individual QoL ($b = .26$, $SE = .19$, 95% CI [0.22, 0.30]). The directional pathway of this mediation is illustrated in Figure 1.

The direct effect of family functioning on individual QoL was found to be significant ($b = .26$, $SE = .48$, 95% CI [0.17, 0.36]). In addition, the indirect effect of family functioning on individual QoL through social connectedness was also significant ($b = .34$, $SE = .35$, 95% CI [0.27, 0.41]). This finding suggests that the relationship between family functioning and individual QoL is likely to be mediated by social connectedness. Overall, the model explained 41% of the variance in individual QoL outcomes ($R^2 = .41$, $F(6, 782) = 89.68$, $p < .01$), reflecting a large effect size. The direct, indirect, and total effects regarding the examined model are detailed in Table 3.

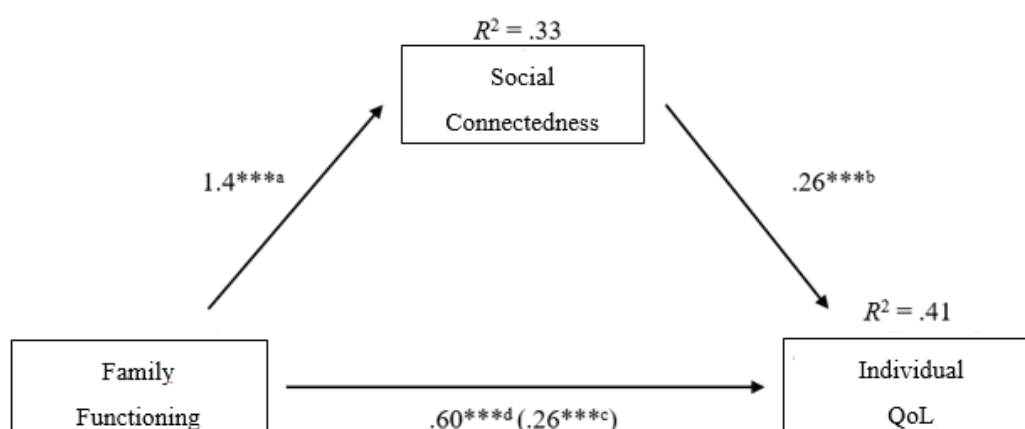


Figure 1. Family functioning as a Predictor of Individual QoL, with Social Connectedness as the Key Mediator

Note. The values shown in the arrows represent the unstandardized regression coefficients. Standardized coefficients (β) are indicated with superscript letters and reported below. In the predictor-criterion path, the value outside the parentheses represents the total effect of family functioning on individual QoL. The value inside the parentheses refers to the direct effect after including the mediating variable. Covariates were omitted to facilitate reading.

^a $\beta = .50$

^b $\beta = .46$

^c $\beta = .18$

^d $\beta = .41$

*** $p < .001$

Table 3. Direct, Indirect, and Total Effects of Family Functioning on Individual QoL

Effects	b	SE	t	p	95% CI ^a
Direct effect					
Family Functioning → Individual QoL	0.26	.48	5.50	< .001	[0.17; 0.36]
Indirect effect					
Family Functioning → Social Connectedness → Individual QoL	0.34	.35	—	< .001	[0.27; 0.41]
Total effect					
Family Functioning → Individual QoL	0.60	.46	13.19	< .001	[0.51; 0.69]

^a CI = confidence interval

Discussion

Beyond its wide-ranging societal effects, the COVID-19 pandemic brought attention to the critical impact of family dynamics on individual QoL. To the best of our knowledge, this was the first study to explore the mediating role of social connectedness in the relationship between family functioning and individual QoL, within the general population. The observed findings revealed how family support and relationships may enhance QoL, both direct and indirectly, through the cultivation of a deeper sense of connection to others. Specifically, the main findings may be summarized as follows: first, there was a positive correlation between family functioning and both social connectedness and individual QoL; and second, social connectedness was found to mediate the relationship between family functioning and individual QoL.

The results confirmed the hypothesis that family functioning would positively correlate with both social connectedness and individual QoL, demonstrating moderate and strong correlations, respectively. This suggests that individuals who perceive their families as having positive dynamics (e.g., mutual support, acceptance, and open communication, emotional expression, and collaborative problem-solving) are more likely to feel a strong sense of belonging outside the family unit. Conversely, the existence of social ties beyond family may strengthen positive family dynamics. In addition, they tend to be more satisfied with their overall life, especially in the context of the COVID-19 pandemic, even if this relationship is most probably bidirectional. These findings align with previous research, emphasizing that family constitutes a primary developmental context, and provides a secure base for broader social relationships and interactions beyond the immediate household (An et al., 2024; Bronfenbrenner, 2022; Edwards et al., 2018; Grevenstein et al., 2019; Minuchin, 1974). Moreover, extensive research has shown that positive family dynamics and rich interactions can profoundly enhance various aspects of life, such as general health (An et al., 2024; Cubero-Plazas et al., 2023; Huigita-Gutiérrez & Cardona-Arias, 2016), cognitive function (An et al., 2024; Cubero-Plazas et al., 2023), emotional well-being (An et al., 2024), and core developmental skills (Huigita-Gutiérrez & Cardona-Arias, 2016), which may ultimately improve QoL (Cubero-Plazas et al., 2023; Gallardo-Peralta et al., 2022; Grevenstein et al., 2019; Huigita-Gutiérrez & Cardona-Arias, 2016; Júnior et al., 2022; Lakomý, 2024; Wang et al., 2015; Yang et al., 2022). These protective effects are particularly salient during periods of crises, as evidenced by the benefits of positive family functioning on one's QoL during the COVID-19 pandemic (Skeens et al., 2023) and in contexts of serious illness (Rolland, 2012).

In addition, the strong positive correlation between social connectedness and individual QoL suggests that individuals who feel more connected to others (e.g., feeling safe, supported, accepted, understood, and satisfied in their relationships), whether through friendships, community ties, or other social networks, tend to report a higher QoL and vice-versa. This finding corroborated our hypothesis, and a substantial body of research, highlighting the significant impact of meaningful relationships in providing a solid foundation for life satisfaction, personal fulfillment, and individual well-being (Cooney et al., 2013; Edwards et al., 2018; Holt-Lunstad et al., 2017; Huang et al., 2019; Jiménez-Torres et al., 2021; Lynch et al., 2008; Mendonca

et al., 2023; Zengin et al., 2017), as well as their potentially bidirectional links. Although the literature has consistently emphasized the importance of social ties for QoL, the unique circumstances of the COVID-19 pandemic have been notably addressed in previous research. In this regard, Kung (2023) noted how the COVID-19 pandemic revealed the essential role of social connections in individuals' lives, underscoring that building and strengthening social bonds is a key factor in promoting and maintaining well-being during challenging times.

The mediation analysis revealed that family functioning was indirectly associated, via social connectedness, with individual QoL, suggesting that this putative mediator variable may play a key role in explaining the relationship between family functioning and individual QoL. Moreover, the large effect size of the proposed model highlights the critical need of fostering family connections and social bonds to enhance individuals' satisfaction with their lives. These findings suggest, in concordance with the dimensions of general family functioning examined in our study, that families who effectively navigate stressors (Gayatri & Puspitasari, 2022), foster balance and support (An et al., 2024; Edwards et al., 2018; McGoldrick et al., 2016; Woodman & McArthur, 2017), show compassion and understanding (McGoldrick et al., 2016; Woodman & McArthur, 2017), promote emotional involvement (An et al., 2024), and maintain good communication (Gayatri & Puspitasari, 2022; Woodman & McArthur, 2017) may create an environment that nurtures the necessary skills to build and strengthen interpersonal connections (Grevenstein et al., 2019). This, in turn, may contribute to individuals' perception of their social environment as safe, warm, and soothing, ultimately improving one's well-being outcomes and perceptions (Cooney et al., 2013; Holt-Lunstad et al., 2017; Huang et al., 2019; Mendonca et al., 2023), specifically during the COVID-19 pandemic (Cahuas et al., 2023; Humphrey et al., 2022; Matos et al., 2021; Pineda et al., 2022; Skeens et al., 2023).

The present study has important implications for both clinical practice and public health policy. The multifaceted repercussions of the COVID-19 pandemic have drastically eroded many individuals' QoL (British Medical Association, 2020; Eicher et al., 2021; Kim et al., 2024; Skeens et al., 2023) and have disrupted many family systems, challenging the dynamics of family relationships (Campbell, 2020; Feinberg et al., 2021; Gayatri & Puspitasari, 2022; Ho et al., 2022; Walsh, 2020). These results suggest that targeted interventions may focus on strengthening core family competencies through multiple ways. First, evidence-based family intervention programs should prioritize communication skills to enhance emotional expression, interpersonal acceptance, and active listening. These programs should also incorporate structured problem-solving techniques and boundary-setting exercises to address pandemic-induced family relationship difficulties. Second, at the community level, psychoeducational programs should cultivate stress co-regulation strategies in families, while hybrid (online and in-person) support groups and public health campaigns would promote wider access to such resilience-building initiatives. Third, policy plans should include increased funding for accessible family mental health services, particularly during a global health crisis and its aftermath. Implementing such multi-level interventions could enhance the acknowledgement of families as crucial social resources and help them navigate current and future challenges.

Conclusions and Recommendations

This study contributes to the growing body of evidence highlighting the central role of family functioning in enhancing individual QoL, particularly through the mediating influence of social connectedness. In the context of the COVID-19 pandemic, these findings underscore how positive family dynamics, marked by open communication, mutual support, and emotional engagement, can foster stronger social ties beyond the family unit, which, in turn, are closely associated with higher levels of individual well-being. The large effect sizes observed in this study support the theoretical model proposed and highlight the importance of nurturing both family and broader social relationships in enhancing QoL, especially during periods of widespread disruption.

Despite the contributions of this study, some limitations should be taken into consideration. First, the sample presented a notable gender imbalance, with a greater proportion of women than men, which may have influenced the results. This discrepancy highlights the importance of conducting future studies with more gender-balanced and representative samples to ensure broader generalizability of findings. Second, the sample was embedded within a Western European cultural context, which may limit the external validity of the results. Cultural variations in family functioning and social connectedness could yield different patterns of association with individual QoL in other regions. Third, the cross-sectional design constitutes a significant limitation, as it precludes the establishment of causal relationships among family functioning, social connectedness, and individual QoL, which, although theoretically driven, may be largely bidirectional. Fourth, data collection was conducted during a specific phase of the COVID-19 pandemic, which may limit the generalizability of the findings to other stages of this public health crisis. Fifth, although attention-check questions and data validation procedures were implemented to enhance reliability, factors such as participant inattentiveness and potential misunderstanding of survey items should be acknowledged as potential sources of bias. Finally, data were collected exclusively through self-report measures, which may be influenced by social desirability bias and subjective interpretation. As such, participants could provide responses that were deemed socially acceptable rather than accurately reflecting their genuine experiences. Furthermore, self-reports highly rely on individuals' self-awareness, which may not fully capture the complexities of psychological and relational dynamics.

Future research should:

- Adopt longitudinal designs to effectively track family functioning and connection to others over time, providing deeper insights into the mechanisms through which they influence one's QoL.
- Examine these relationships across diverse populations and cultural contexts to assess the generalizability of the findings.
- Focus on other potential mediators (e.g., individual resilience, emotion regulation, couples' dyadic coping) to refine a family-based model of individual QoL that could provide a more comprehensive understanding of the dynamics uncovered in this study.
- Incorporate family QoL outcomes in stress-coping research, as this broader perspective could enrich interpretations of how social bonding may contribute to well-being at both individual and systemic levels.

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