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Research Article

Mediated Pathways from Death Anxiety and Fear of COVID-19 to Adjustment Disorder via Social Support and Resilience

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Abstract

Objective: Death anxiety and fear of infection are crucial psychological factors influencing adjustment disorders during infectious disease outbreaks. Conversely, perceived social support and psychological resilience function as protective buffers. This study investigated how death anxiety and fear of COVID-19 predict adjustment disorder, with perceived social support and psychological resilience as potential mediators.

Method:Using a descriptive cross-sectional design, 400 adults were recruited through convenience sampling in Tehran, Iran. Participants completed the International Adjustment Disorder Questionnaire, Death Anxiety Scale, Fear of COVID-19 Scale, Multidimensional Scale of Perceived Social Support, and the Connor–Davidson Resilience Scale. Data were analyzed using descriptive statistics (SPSS v26) and structural equation modeling (AMOS v26).

Results: Fear of COVID-19 showed a significant positive association with adjustment disorder ($\beta = 0.18$, $p = 0.012$), while perceived social support ($\beta = –0.25$, $p < 0.001$) and psychological resilience ($\beta = –0.24$, $p < 0.001$) were negatively associated with adjustment disorder. Psychological resilience partially mediated the link between fear of COVID-19 and adjustment disorder (indirect $\beta = 0.07$, $p = 0.016$). Death anxiety was not a significant predictor of adjustment disorder ($p > 0.05$).

Conclusion: The findings emphasize that fear of COVID-19, resilience, and perceived social support play distinct and interrelated roles in predicting adjustment disorder. Interventions aimed at strengthening resilience and social support may mitigate the psychological impact of pandemic-related stressors. Further research is recommended to refine these pathways and inform targeted prevention and treatment strategies.

Keywords: Adjustment disorder, Death anxiety, COVID-19, Social support, Resilience.

How to Cite

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Extended Abstract

Background & Objectives

Adjustment disorder is a prevalent psychological condition characterized by emotional and behavioral symptoms that emerge within three months of a stressful event. The COVID-19 pandemic introduced profound stressors, with fear of infection identified as a major predictor of adjustment disorder. Death anxiety, defined as fear or apprehension about dying, has been strongly associated with maladjustment and functional impairments.

Perceived social support, referring to individuals' beliefs about the availability and quality of social resources, has a protective role against adjustment disorder. Research suggests that fear of COVID-19 may mediate the relationship between death anxiety and Adjustment disorder, while perceived social support and resilience may buffer these effects (Beck & Daniels, 2023). However, findings on the interplay between these variables remain inconsistent. Despite extensive studies on COVID-19-related psychological distress, there is a lack of research integrating death anxiety, fear of COVID-19, social support, and resilience into a comprehensive model predicting adjustment disorder. Addressing this gap, the present study aims to examine both direct and indirect pathways linking death anxiety and fear of COVID-19 to .adjustment disorder, with perceived social support and resilience as mediating factors

The question of the present study is whether death anxiety and fear of COVID-19 play a role in predicting adjustment disorder directly and through social support and psychological resilience. This research contributes to post-pandemic mental health strategies by advancing understanding of vulnerability and resilience in the face of widespread health crises.

Materials and Methods

This descriptive cross-sectional study, derived from a master's thesis in clinical psychology at Semnan University, investigated psychosocial and clinical variables among adults in Tehran. Data were collected in public places such as metro stations, libraries, and parks from spring to autumn 2022. Participants were 400 individuals aged 18–60, selected through convenience sampling based on Tabachnick and Fidell's (2014) recommendations for structural equation modeling. Inclusion criteria were literacy, informed consent, and age range, while exclusion criteria involved medical, psychiatric, or neurocognitive disorders, pharmacotherapy, substance use, or incomplete responses. Participants completed the International Adjustment Disorder Questionnaire, Death Anxiety Scale, Fear of COVID-19 Scale, Multidimensional Scale of Perceived Social Support, and the Connor–Davidson Resilience Scale. Instruments demonstrated acceptable reliability in prior Iranian validation studies and in the present sample.

The study was approved by the Ethics Committee of Semnan University of Medical Sciences (IR.SEMUMS.REC.1401.033). Written informed consent was completed by participants, and data collection adhered to the Helsinki Declaration. In controlling the ceiling and floor effects, the instruments were implemented in a cross-balancing manner. Statistical analysis included descriptive statistics via SPSS-26 and structural equation modeling via AMOS-26. The bootstrap method was used to examine mediation effects at a significance level of 0.05.

Results

The study involved 402 participants, with 37.1% male and 62.9% female, with a mean age of 29.68 years. Most participants were single (60.4%), and the majority had a bachelor's degree (50.7%). Regarding employment, 35.1% were students, 24.6% were employees, and 20.9% were unemployed. Psychological resilience had the highest mean score (57.67), while death anxiety had the lowest (7.45). Structural equation modeling showed that the relationship between

fear of COVID-19 infection and psychological resilience is negatively significant (-0.16), while the association between fear of COVID-19 infection and adjustment disorder is positively significant (0.18). The link between perceived social support and adjustment disorder is negatively significant (-0.25), and the association between psychological resilience and adjustment disorder is also negatively significant (-0.24). The paths from death anxiety to perceived social support (-0.10), death anxiety to psychological resilience (-0.10), fear of COVID-19 infection to perceived social support (-0.50), and death anxiety to adjustment disorder (0.05) are not statistically significant (P>0.5).

Discussion and Conclusion

This study examined the relationships between adjustment disorder, fear of COVID-19 infection, perceived social support, and psychological resilience. The findings revealed a significant positive association between fear of COVID-19 and adjustment disorder, confirming the pandemic's role as a major stressor contributing to maladaptive psychological responses. In contrast, both social support and resilience showed negative associations with adjustment disorder, underscoring their protective roles in coping with stress. While social support did not mediate the link between death anxiety or fear of infection and adjustment disorder, it remained an independent protective factor, particularly relevant in collectivist contexts such as Iran.

Death anxiety did not correlate significantly with adjustment disorder, diverging from some previous studies, which may be explained by cultural differences, measurement variations, and pandemic-specific experiences such as bereavement. Findings on resilience as a mediator were mixed: resilience did not mediate the death anxiety–adjustment disorder link but significantly mediated the relationship between fear of infection and adjustment disorder, highlighting its central role in adaptation.

These results suggest that resilience and social support are critical factors in mitigating adjustment disorder during large-scale crises like COVID-19. However, methodological limitations, including convenience sampling, cross-sectional design, and a non-clinical population, limit the generalizability of findings. Future research should adopt longitudinal and mixed-methods approaches, with more diverse samples, to further clarify the mechanisms underlying adjustment .disorder and its psychosocial determinants

This study highlights that fear of COVID-19, psychological resilience, and social support significantly influence adjustment disorder during epidemics. While findings suggest these factors are key predictors, further research is needed due to conflicting evidence. Future studies should emphasize early screening for adjustment disorder symptoms and the development of targeted psychosocial interventions. Tailored strategies to reduce fear, enhance resilience, and strengthen social support may improve individuals' adjustment in stressful epidemic conditions.

Introduction

Adjustment disorder, characterized by emotional or behavioral symptoms triggered by stressful events, often emerges within three months of exposure (Makki et al., 2024; Dragan et al., 2021; Zapata-Ospina et al., 2025). These symptoms significantly impact the health-related quality of life in both clinical and healthy populations (Seo et al., 2023; Rahimian-Boogar et al., 2018). Factors such as death anxiety, a fear of dying are significant contributors to adjustment disorder (Mahat-Shamir et al., 2023; Mohammadi et al., 2022). Fear of death and the dying process can cause functional impairments (Wen et al., 2025; Kuriyama

et al., 2022), and the COVID-19 pandemic has been identified as a major stressor leading to adjustment .(disorder (Lotzin et al., 2021; Brooks et al., 2020; Kurose et al., 2022

Perceived social support, reflecting individuals' beliefs about the quality and availability of support from social networks, plays a crucial role in the development of adjustment disorder, with higher perceived support reducing the disorder's impact (Agarwal et al., 2024; Dour et al., 2014; Shi et al., 2024). Resilience, which represents the ability to recover from adversity, is another significant factor associated with adjustment Research has established a link between death anxiety and .(disorder (Xiao et al., 2023; Rossi et al., 2020 adjustment disorder, with fear of COVID-19 acting as a mediating factor (Mahat-Shamir et al., 2023; Fathi Dooki et al., 2023). There is evidence indicating that individuals who faced COVID-19-related stressors are at an increased risk for severe psychopathology and adjustment disorders (Saha et al., 2023; Kamkari .(& Eskandari, 2022

Resilience and perceived social support mediate the relationship between death anxiety, fear of COVID-19, and adjustment disorder (Bibi & Khalid, 2020; Feyzbabaie et al., 2025; Beck & Daniels, 2023; Mao et al., 2024). However, some studies report conflicting results regarding the link between resilience and death anxiety (Rayatpisheh et al., 2023; Mohammadi et al., 2022). Notably, resilience and fear of COVID-19 are .(negatively correlated (Seçer et al., 2020; Gundogan, 2021

The proposed research model, including both direct and indirect pathways, was developed based on theoretical foundations and prior research, such as studies by Dragan et al. (2021), Lotzin et al. (2021), and Mahat-Shamir et al. (2023). Mahat-Shamir et al.'s (2023) study confirmed a mediation model, demonstrating that higher death anxiety levels are linked to increased COVID-19 information intake, heightened fear of contagion, illness anxiety, and ultimately, adjustment disorder. Despite extensive research, several key .relationships remain unexplored

There is a lack of studies examining the impact of adjustment disorder in relation to death anxiety and fear of COVID-19, particularly considering the mediating roles of perceived social support and psychological resilience. Conflicting findings have been reported regarding the relationship between perceived social support, fear of contamination, and adjustment disorder (Razgulin et al., 2024; Rayatpisheh et al., 2023). Post-pandemic, adjustment disorders, death anxiety, and fear of infection have become more prevalent. Moreover, few studies have explored the direct and indirect structural relationships of psychosocial factors in adjustment disorder following COVID-19, highlighting the need for further research on protective factors This study aims to explore whether death .and vulnerability to post-traumatic growth during such epidemics anxiety and fear of COVID-19 play a role in predicting adjustment disorder directly and through social .support and psychological resilience

Method

This study, with a descriptive cross-sectional design, was taken from the dissertation for obtaining a master's degree in clinical psychology at Semnan University. People are studied in public places in Tehran, such as metro and bus stations, libraries, public parks, and public shopping centers.

Participants

The participants included people aged 18 to 60 in Tehran from spring to autumn 2022. According to

Tabachnick and Fidell's guideline (2014) for sampling in structural equation modeling, the sample size was calculated based on the number of observable variables. This guideline suggests a sample size can be determined between 5 and 15 observations for each observed variable. In this study, there were 34 observed variables, and for each variable, 12 participants entered the model. Therefore, 408 participants were selected through convenience sampling. Eight participants were excluded from the study due to inclusion and exclusion criteria and other conditions, and the data of 400 participants were analyzed. The age range of 18 to 60, written informed consent to participate in the research, and having the ability to read and write to respond to the instruments were the inclusion criteria. Medical, psychiatric, and neurocognitive disorders, pharmacotherapy during the study, substance and illicit drug use, and failure to fully respond to the instruments were the exclusion criteria. These criteria were measured by self-report, medical record review, and a brief psychiatric examination.

Ethical Statements

The study was approved by the Ethics Committee of Semnan University of Medical Sciences (Approval ID: IR.SEMUMS.REC.1401.033). Besides, written informed consent to participate in the study was obtained from all participants. In addition, the study was carried out in compliance with ethical practices, including protection of participants' rights, confidentiality, and the option to withdraw from the study. All procedures performed in this study were in accordance with ethical standards and the Helsinki Declaration.

Measures

Demographic and Clinical Information Questionnaire*:* This questionnaire is designed by researchers to gather demographic characteristics such as age, gender, marital status, family size, financial situation, and educational level.

The International Adjustment Disorder Questionnaire (IADQ)*:* The IADQ was created by Shevlin et al. (2020) to assess the symptoms of adjustment disorder. It comprises 19 items, divided into three main components. The first component focuses on psychosocial stressors with binary (yes/no) responses. The second component, consisting of mental preoccupation symptoms and a lack of matching symptoms, contains three items rated on a five-point Likert scale ranging from 0 (not at all) to 4 (very much). Additionally, there is a question regarding experiencing issues related to the stressful event within a month of its occurrence. The third component contains three items that evaluate functional disturbances in social, occupational/educational, and other significant areas due to these symptoms (Nasri et al., 2025). Responses are scored on a five-point Likert scale from 0 (not at all) to 4 (very high). A likely diagnosis is determined by scoring at least one point in the first section, a minimum of two points in each part of the second section, confirmation of symptom onset within one-month post-stressor, and achieving a minimum score of two in the third component. The questionnaire has a reported Cronbach's alpha coefficient of 0.94 (Shevlin et al., 2020). In a recent study, the original questionnaire was translated by two translators simultaneously. The Persian version was then reviewed by individuals with specialized doctorates in psychology and psychometrics. The translation of IADQ into Persian, including forward and back-translation. Initially, the questionnaire was translated into Persian by a bilingual team, and later, to ensure accuracy and consistency, it was followed by a back-translation. In addition, cultural adaptation was conducted to ensure the items' relevance and cultural appropriateness for Iranian participants while maintaining the original meaning of

the items. A comparison between the Persian and original versions confirmed content and construct validity, with a Cronbach correlation coefficient of 0.76.

The Death Anxiety Scale (DAS)*:* The DAS was developed by Templer (1970) to assess individuals' attitudes towards death. Respondents answer yes or no, with a yes indicating anxiety. Scores range from 0 to 15, with higher scores reflecting greater death anxiety. The original version demonstrated good test-retest reliability, with a coefficient of 0.83, and concurrent validity with anxiety and depression scales, with values of 0.27 and 0.40, respectively (Templer, 1970). In Iran, Rajabi and Bahrani (2002) tested the scale, finding split-half reliability at 0.60 and internal consistency at 0.73. Validity was assessed using an overt anxiety scale, showing a correlation of 0.34. Principal component analysis in Iran showed that the three-factor solution explained 60.38% of the variance. Confirmatory factor analysis also supported the adequacy of the three-domain structure of the DAS. Goodness-of-fit indices included an acceptable overall fit with the full model with χ^2/df=2.04, Parsimonious Comparative Fit Index=0.70, Adjusted Goodness-of-Fit Index=0.92, CMIN/DF=2.04, Normalized Fit Index=0.91, and RMSEA=0.055 (Soleimani et al., 2016). Convergent and discriminant validity were demonstrated, with construct validity being established. Cronbach's alpha was also greater than 0.70. In the current study, Cronbach's alpha was 0.43.

The Fear of COVID-19 Scale (FC-19S): The FC-19S, developed by Ahorsu et al. (2020), assesses individuals' fear levels related to COVID-19 using a seven-item questionnaire rated on a five-point Likert scale. Scores on this scale range from 7 to 35, with higher scores indicating greater fear of COVID-19. The correlations between items ranged from 0.66 to 0.74, and the Cronbach's alpha coefficient was 0.82 .((Ahorsu et al., 2022

Ahorsu et al. (2022) showed that the items were retained with acceptable item-total correlations (0.47 to 0.56) and were confirmed with significant factor loadings of 0.66 to 0.74. Classical test theory and the Rasch model showed that the characteristics assessed were satisfactory. Validity was established through test-retest and concurrent validity measures. Also, Test-retest reliability (ICC=0.72) and internal consistency with Cronbach's alpha (α=0.82) were acceptable. Concurrent validity was acceptable for depression .r=0.425)and anxiety (r=0.511) in the Hospital Anxiety and Depression Scale and with perceived infectiousness (r=0.483) and germ aversion (r= 0.459) in the Perceived Vulnerability to Illness Scale (Ahorsu et al., 2022). In the current study, the Cronbach's correlation coefficient was calculated at 0.92.

The Multidimensional Scale of Perceived Social Support (MSPSS): The MSPSS is a 12-item instrument that evaluates social support from three sources (family, friends, and community) using a seven-point scale (1=strongly disagree, 7=strongly agree). Scores on the scale range from 12 to 84, with higher scores indicating greater perceived social support. The Cronbach's alpha coefficient ranged from 0.85 to 0.91, and the test-retest coefficient ranged from 0.72 to 0.85 (Zimet et al, 1988). Shokri et al. (2016) reported Cronbach's alpha values of 0.89 for the full scale, and 0.84, 0.85, and 0.91 for the community, family, and friend subscales, respectively, in an Iranian sample. Principal component analysis with Varimax rotation in Iranian and Swedish students showed that the MSPSS includes three factors of friends, family, and significant others. Confirmatory factor analysis showed that the three-factor model of this scale had a good fit with the data. Also, the effect of the cultural contextual element on the subscales of perceived social support was statistically significant. In a Swedish sample, these values were reported as 0.92, 0.89, 0.84, and 0.94, respectively (Zimet et al., 1988). Their study showed that individuals from different cultural

backgrounds interpreted the scale items similarly. The present study reported a Cronbach's alpha coefficient of 0.90.

The Conner-Davidson Resilience Scale (CD-RISC): The CD-RISC was developed by Connor and Davidson in 2003 to assess the capacity to cope with stress and adversity. This 25-item scale utilizes a five-point Likert scale, ranging from 0 (never true) to 4 (always true). Research indicates that the scale exhibits strong internal consistency, test-retest reliability, as well as convergent and divergent validity in both the general population and patient groups. Exploratory factor analysis reveals the scale's multidimensional nature, identifying five distinct factors. However, the reliability and validity of the individual subscales warrant further investigation. At present, only the total resilience score is deemed suitable for research purposes, showing a Cronbach's alpha coefficient of 0.87 (Connor and Davidson, 2003). In a study conducted in Iran, Hashemi and Jokar (2011) reported the alpha coefficients for the subscales of connectedness, prayer fulfillment and universality and the total score were 75, 74, 73 and 84, respectively, Also, the test-retest coefficients for the subscales of c connectedness, prayer fulfillment and universality and the total score were 68, 91, 73 and 84, respectively. The findings of factor analysis confirmed the establishment of three factors for one general factor for CD-RISC and for STS. Significant correlations were established between STS and CD-RISC. The correlation coefficients for the connectedness, prayer fulfillment, universality, and the total score of the scale were significant with values of 45, 32.41, and 48, respectively. The present study yielded a Cronbach's alpha coefficient of 0.92.

Procedure

Participants were briefed on the study's significance for timely identification, prevention, and intervention. Data collection adhered to inclusion and exclusion criteria, respecting ethical standards through informed consent. Surveys were distributed in person at public facilities in Tehran's 4th district (i.e., cultural centers and libraries, health centers and outpatient treatment centers, libraries, and green spaces). A total of 402 .accurately completed questionnaires were gathered for analysis

Data analysis

Descriptive statistics (mean, standard deviation, and correlation) were conducted using SPSS-26, while inferential analysis utilized structural equation modeling with AMOS-26, considering a significance level of 0.5. The bootstrap method was used to determine the significance of the mediation effects.

Results

In terms of demographic characteristics, there were 149 male participants (37.1%) and 253 female participants (62.9%). The mean age of the participants in the study is 29.68 years, with a standard deviation of 2.17. Out of the total, 243 participants were single (60.4%), and 159 participants (39.6%) were married. In terms of education, there were 19 participants with a bachelor's degree (4.7%), 29 participants with a diploma (7.2%), 16 participants with an associate's degree (4%), 204 participants with a bachelor's degree (50.7%), 119 participants with a master's degree (29.6%), and 15 participants with a Ph.D. degree (3.7%). Regarding employment status, 84 participants were unemployed (20.9%), 141 were students (35.1%), 99 were employees (24.6%), and 78 were self-employed (19.4%). As for income, the participants' earnings ranged from 20 to 600 million rials and above, with the highest mean belonging to the 180 individuals with low income (44.8%).

Table 1. Correlation matrix, mean, and standard deviation of research variables

Variables	Mean	SD	1	2	3	4	5
1. Adjustment disorder	26.67	8.71	1.00	-	-	-	-
2. Fear of the COVID-19 infection	16.70	7.02	0.14*	1.00	-	-	-
3. Perceived social support	57.67	14.13	-0.17**	-0.08	1.00	-	-
4. Psychological resilience	63.10	15.33	-0.24**	-0.16*	0.28**	1.00	-
5. Death anxiety	7.45	2.33	0.037	0.18**	-0.05	0.003	1.00

*P<0.05, **P<0/01

In Table 1, the highest mean pertains to psychological resilience (63.10±۱5.33), while the lowest mean is associated with death anxiety (7.45±2.33). At a 99% confidence level (p<0.01), there is a significant positive relationship between fear of COVID-19 infection and adjustment disorder, and a significant negative relationship between perceived social support and psychological resilience with adjustment disorder. No significant relationship was observed between death anxiety and adjustment disorder. The collinearity assumption is met based on tolerance statistics and the inflation factor (ranging from 0.781 to 0.904 and 1.106 to 1.280, respectively), and error independence is confirmed by Durbin-Watson's test (1.916). Skewness and Kurtosis values fall within the range of +2 to -2, and a multivariate normality value of 2.08 was obtained.

Table 2. Structural model fit based on fit indices

Model	df	Chi-square	P	CMIN/df	RMSEA	GFI	NFI	TLI	IFI	RFI	PCFI	PNFI
Acceptable values	-	-	<0.05	1-5	<0.10	≥0.90	<1	≥0.90	≥0.90	≥0.60	≥0.60	≥0.60
Mediation model	506	871.289	0.001	1.72	0.04	0.94	0.87	0.93	0.94	0.86	0.85	0.78
Total effect model	512	949.226	0.001	1.85	0.04	0.93	0.86	0.92	0.93	0.85	0.85	0.78
Indirect effect model	508	888.482	0.001	1.74	0.04	0.94	0.87	0.93	0.94	0.85	0.85	0.79

Table 2 suggests that the normalized chi-square index (CMIN/df) value in the mediation model is 1.72, which is considered acceptable. The normed fit index (NFI) value of 0.87 indicates a good fit for the model in relation to the research sample. Additionally, the root mean square estimation error (RMSEA) value of 0.04 confirms the adequacy of the model. Consequently, the mediation model is deemed to be a suitable fit, allowing for the examination of the significance of path coefficients. Within the mediation model, the R^2 values are 0.060 for resilience, 0.020 for perceived social support, and 0.219 for adjustment disorder. Figure 1 illustrates the structural connections between death anxiety, fear of COVID-19 infection, and

adjustment disorder, with the mediating influence of perceived social support and resilience. In addition, the standard coefficients of the direct paths and Bootstrap results for the indirect paths of the examined model are presented in Table 3.

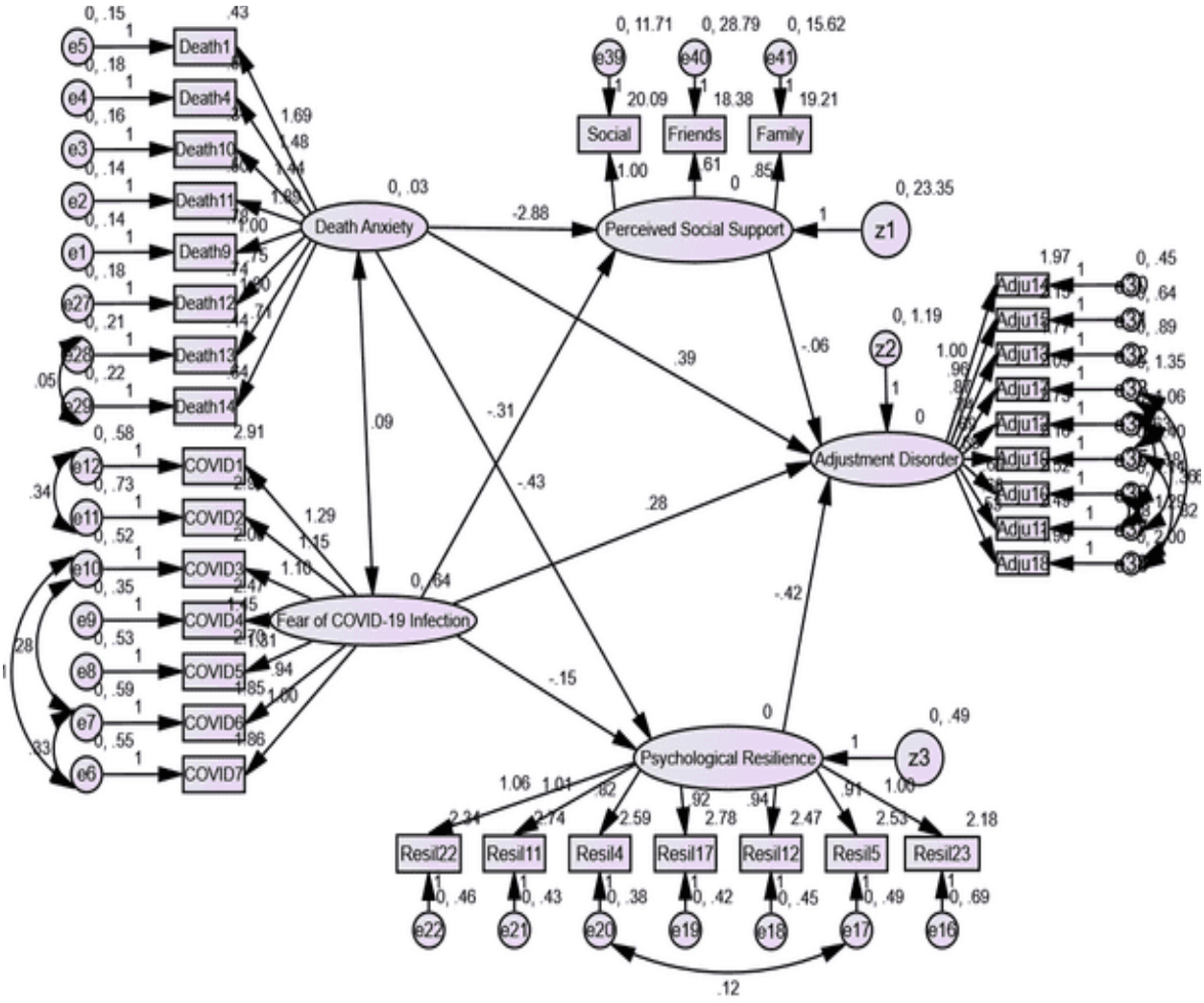

Figure 1. The examined model of structural relationships among research variables

Table 3. Standard coefficients of the direct paths and Bootstrap results for the indirect paths of the examined model

Direct Paths	B	β	SE	CR	P-value
Fear of COVID-19 infection → psychological resilience	-0.15	-0.16	0.070	-2.11	0.035
Death anxiety → perceived social support	-2.88	-0.10	2.518	-1.14	0.253
Death anxiety → psychological resilience	-0.43	-0.10	0.346	-1.25	0.212
Fear of COVID-19 infection → perceived social support	-0.30	-0.50	0.509	-0.60	0.546

Death anxiety → adjustment disorder	0.39	0.05	0.544	0.71	0.476
Fear of COVID-19 infection → adjustment disorder	0.28	0.18	0.111	2.50	0.012
Perceived social support → adjustment disorder	-0.06	-0.25	0.015	-4.37	0.001
Psychological resilience → adjustment disorder	-0.42	-0.24	0.095	-4.41	0.001

Indirect Paths	**Value**	**Boot**	**SE**	**Boot LLCI**	**Boot ULCI**	**P-value**
Death anxiety → adjustment disorder through perceived social support and psychological resilience	0.43	0.06	0.063	0.19	-0.05	0.255
Fear of COVID-19 infection → adjustment disorder through perceived social support and psychological resilience	0.11	0.07	0.055	0.18	-0.3	0.167
Death anxiety → adjustment disorder through psychological resilience	0.25	0.03	0.258	0.77	-0.24	0.310
Death anxiety → adjustment disorder through perceived social support	0.28	0.04	0.042	0.13	-0.03	0.282
Fear of COVID-19 infection → adjustment disorder through psychological resilience	0.11	0.07	0.055	0.23	0.02	0.016
Fear of COVID-19 infection → adjustment disorder through perceived social support	0.05	0.03	0.039	0.12	-0.03	0.356

Based on Table 3, the relationship between fear of COVID-19 infection and psychological resilience is negatively significant (-0.16), while the association between fear of COVID-19 infection and adjustment disorder is positively significant (0.18). The link between perceived social support and adjustment disorder is negatively significant (-0.25), and the association between psychological resilience and adjustment disorder is also negatively significant (-0.24). The paths from death anxiety to perceived social support (-0.10), death anxiety to psychological resilience (-0.10), fear of COVID-19 infection to perceived social support (-0.50), and death anxiety to adjustment disorder (0.05) are not statistically significant (P>0.5).

According to the bootstrap results about the mediating effect of perceived social support and psychological resilience in the relationship between death anxiety and fear of COVID-19 infection with adjustment disorder (Table 3), the indirect impact of the fear of COVID-19 infection on adjustment disorder through the mediator of psychological resilience is positively significant (0.07). The indirect effects involving death anxiety on adjustment disorder through perceived social support and psychological resilience (0.06), fear of COVID-19 infection on adjustment disorder through perceived social support and psychological resilience (0.07), death anxiety on adjustment disorder through perceived social support (0.04), fear of COVID-19 infection on adjustment disorder through perceived social support (0.03), and death anxiety on adjustment .(disorder through psychological resilience (0.03) are not ststatistically significant (P>0.5

Discussion and Conclusion

This study demonstrated that fear of COVID-19, perceived social support, and psychological resilience were significant predictors of adjustment disorder. Consistent with the findings of Dragan et al. (2021), Lotzin et al. (2021), and Saha et al. (2023), greater fear of COVID-19 was positively associated with adjustment disorder. This relationship underscores the pandemic's role as a pervasive stressor capable of eliciting maladaptive psychological responses. The pervasive uncertainty, health-related fears, and social restrictions characteristic of the pandemic likely intensified vulnerability to stress-related disorders. Previous studies by Feyzbabaie et al. (2025), Lenferink et al. (2022), Mahat-Shamir et al. (2023), and Razgulin et al. (2024) similarly identified the pandemic as a global stressor that disrupted individuals' capacity to adapt to change, thereby increasing the prevalence of adjustment problems.

Conversely, perceived social support showed a significant negative association with adjustment disorder, supporting the protective role of social resources in coping with adversity. This finding is consistent with finding of Agarwal et al. (2024) and Razgulin et al. (2024), which indicated that individuals with stronger perceived social networks exhibit greater psychological adjustment and fewer mental health difficulties. Social support likely mitigates the psychological burden of pandemic-related stressors by enhancing feelings of security, belonging, and control, thereby buffering against emotional distress. Together, these findings reinforce the conceptualization of adjustment disorder as a stress-related condition shaped by both risk and protective factors. Fear of infection represents a salient psychological risk factor, while perceived social support serves as a critical adaptive resource during and after large-scale crises like COVID-19. Any discrepancies with prior studies may stem from contextual differences such as cultural norms around emotional expression, variations in pandemic severity, or differential access to social support systems.

Furthermore, the present study revealed a significant negative association between psychological resilience and adjustment disorder, aligning with earlier findings by Rossi et al. (2020), Makki et al. (2024), Woo et al. (2025), and inconsistent with the study by Xiao et al. (2023). Psychological resilience appears to buffer individuals against the impact of stressors like the COVID-19 pandemic, facilitating better psychosocial adjustment. Resilience likely enables individuals to adapt to adversity, promoting emotional regulation and reducing susceptibility to mental health issues. Noriega et al. (2024) argued that resilience fosters post-traumatic growth, particularly in the context of global crises such as COVID-19.

However, the study found no significant mediating effect of perceived social support between fear of COVID-19 and adjustment disorder. This contrasts with studies of Bibi & Khalid (2020), Beck & Daniels (2023), and Zhang et al. (2023), that suggesting social support can mitigate the psychological impact of pandemic-related anxiety. The lack of mediation could be due to contextual factors, such as the collectivist nature of Iranian society, where social support may function more as a direct protective factor than a mediator between death anxiety and adjustment disorder. Cultural norms and measurement differences may further explain these discrepancies. In Iran, as a collectivist society, social support often plays a crucial role in coping strategies, and the lack of social support mediation between fear of COVID-19 and adjustment disorder may be related to cultural factors. In collectivist societies, the well-being of the group is important, and personal emotional expression and support-seeking can mostly be constrained by social values and norms. These cultural differences could explain why social support may not significantly buffer the impact

of fear of COVID-19 in collectivist societies. Moreover, contrary to prior research by Mahat-Shamir et al. (2023) and Rayatpisheh et al. (2023), death anxiety did not correlate significantly with adjustment disorder in this study. This could be attributed to the unique nature of the COVID-19 pandemic, where fear of infection and related health anxieties might overshadow death anxiety as a significant contributor to adjustment difficulties. Additionally, variations in measurement tools or the specific sample studied might Overall, the influence of death anxiety on adjustment disorder may .account for these inconsistent results .be more nuanced and context-dependent

The study yielded mixed results regarding the mediating role of psychological resilience between death anxiety and adjustment disorder. While this finding aligns with Rayatpisheh et al. (2023), it contradicts Mohammadi et al. (2022). The inconsistency may stem from factors such as differing measurement instruments, cultural and social differences among study samples, and variations in research design. The study confirmed that psychological resilience significantly mediates the relationship between fear of COVID-19 infection and adjustment disorder. This result supports previous research (Seçer et al., 2020; Gundogan, 2021), which underscores resilience as a key factor in adapting to significant stressors. Resilience enhances individuals' capacity to cope with the fear and uncertainty brought on by the pandemic, thereby promoting better mental health outcomes. This finding aligns with the work of Rossi et al. (2020) and Kazlauskas et al. (2021), further reinforcing the importance of resilience in mitigating adjustment difficulties during crises .like COVID-19

This study has several limitations, including the use of convenience sampling and a non-clinical population, which limits the generalizability of the findings. Additionally, the absence of a mixed-methods design and a longitudinal approach further constrains the ability to draw causal conclusions. The Death Anxiety Scale (DAS) showed a low Cronbach's alpha of 0.43, suggesting potential reliability issues, which may have affected the accuracy of the findings. Future studies should use more reliable tools to assess death anxiety. Given the limited number of studies on adjustment disorder, further research is needed to deepen understanding in this area. Employing diverse sampling methods and studying varied populations will help clarify the role of psychological and social factors in adjustment disorder.

This study highlights the significant role of psychological factors—such as fear of COVID-19 infection and resilience—and social factors like social support in predicting adjustment disorder. These findings underscore the need for tailored psychosocial interventions to address COVID-19-related fear, enhance social support, and promote resilience. Future research should focus on early screening for adjustment disorder in individuals affected by collective stress to better manage the impacts of pandemics and other crises.

Conflict of interest

The authors declare no conflicts of interest in this study.

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References

Agarwal, M., Sharma, P., Goswami, A., & Mittal, R. (2024). A 2023 nationwide study on adjustment disorder among first-year MBBS students in India. *Bioinformation*, *20*(2), 190–195. https://doi.org/10.6026/973206300200190

Ahorsu, D. K., Lin, C. Y., Imani, V., Saffari, M., Griffiths, M. D., & Pakpour, A. H. (2022). The Fear of COVID-19 Scale: Development and Initial Validation. *International journal of mental health and addiction*, *20*(3), 1537–1545. https://doi.org/10.1007/s11469-020-00270-8

Bambrah, V., Wyman, A., Friedman, E., & Eastwood, J. D. (2022). Examining the Longitudinal Associations between Adjustment Disorder Symptoms and Boredom during COVID-19. *Behavioral sciences (Basel, Switzerland)*, *12*(9), 311. https://doi.org/10.3390/bs12090311

Beck, E., & Daniels, J. (2023). Intolerance of uncertainty, fear of contamination and perceived social support as predictors of psychological distress in NHS healthcare workers during the COVID-19 pandemic. *Psychology, health & medicine*, *28*(2), 447–459. https://doi.org/10.1080/13548506.2022.2092762

Bibi, A., & Khalid, M. A. (2020). Death anxiety, perceived social support, and demographic correlates of patients with breast cancer in Pakistan. *Death studies*, *44*(12), 787–792. https://doi.org/10.1080/07481187.2019.1614108

Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet (London, England)*, *395*(10227), 912–920. https://doi.org/10.1016/S0140-6736(20)30460-8

Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: the Connor-Davidson Resilience Scale (CD-RISC). *Depression and anxiety*, *18*(2), 76–82. https://doi.org/10.1002/da.10113

Dour, H. J., Wiley, J. F., Roy-Byrne, P., Stein, M. B., Sullivan, G., Sherbourne, C. D., … , & Craske, M. G. (2014). Perceived social support mediates anxiety and depressive symptom changes following primary care intervention. *Depression and anxiety*, *31*(5), 436–442. https://doi.org/10.1002/da.22216

Dragan, M., Grajewski, P., & Shevlin, M. (2021). Adjustment disorder, traumatic stress, depression and anxiety in Poland during an early phase of the COVID-19 pandemic. *European journal of psychotraumatology*, *12*(1), 1860356. https://doi.org/10.1080/20008198.2020.1860356

Fathi Dooki, A., Fathi Dooki, E., Hassannia, L. and Hassannia, H. (2023). Psychological consequences of coronavirus (COVID-19) in students: A systematic review study. *Health Psychology*, *12*(47), 105-117. https://doi.org/10.30473/hpj.2024.62958.5484

Feyzbabaie, M., Rajai, N., Alizadeh, A., & Azizi, M. (2025). Psychological distress among nursing students during the COVID-19 pandemic: a hybrid concept analysis. *BMC psychology*, *13*(1), 218. https://doi.org/10.1186/s40359-025-02562-x

Gundogan S. (2021). The mediator role of the fear of COVID-19 in the relationship between psychological resilience and life satisfaction. *Current psychology (New Brunswick, N.J.)*, *40*(12), 6291–6299. https://doi.org/10.1007/s12144-021-01525-w

Hashemi, L., & Jokar, B. (2011). Study of relationship between spiritual transcendence and resilience. *Journal of educational psychology studies*, *8*(13), 123-142. [Persian]

Kamkari, K. & Eskandari, M. (2022). Survey of Psychopathological Profile in Cured Patients of COVID-19 Disease. *Iranian Journal of Health Psychology*, *5*(2), 63-70. https://doi.org/10.30473/ijohp.2022.56478.1152

Kazlauskas, E., Gelezelyte, O., Nomeikaite, A., & Zelviene, P. (2021). Posttraumatic Stress Disorder and Adjustment Disorder in Lithuanian Healthcare in 2018-2020: A Nation-Wide Cohort Study of the Effects of COVID-19 Pandemic. *Healthcare (Basel, Switzerland)*, *9*(11), 1422. https://doi.org/10.3390/healthcare9111422

Kuriyama, A., Shikino, K., Moriya, M., Sadohara, M., Nonaka, S., Nagasaki, K., … , & Makiishi, T. (2022). Burnout, depression, anxiety, and insomnia of internists and primary care physicians during the COVID-19 pandemic in Japan: A cross-sectional survey. *Asian journal of psychiatry*, *68*, 102956. https://doi.org/10.1016/j.ajp.2021.102956

Kurose, S., Funayama, M., Takata, T., Shimizu, Y., Mimura, Y., Kudo, S., … , & Mimura, M. (2022). Symptom changes in patients with pre-existing psychiatric disorders in the initial phase of the COVID-19 pandemic: Vulnerability of female patients and patients with mood disorders. *Asian journal of psychiatry*, *68*, 102966. https://doi.org/10.1016/j.ajp.2021.102966

Lenferink, L., Mouthaan, J., Fritz, A. M., Soydas, S., Eidhof, M., van Hoof, M. J., …, & Mooren, T. (2022). Predicting transitions between longitudinal classes of post-traumatic stress disorder, adjustment disorder and well-being during the COVID-19 pandemic: protocol of a latent transition model in a general Dutch sample. *BMJ open*, *12*(1), e055696. https://doi.org/10.1136/bmjopen-2021-055696

Lotzin, A., Krause, L., Acquarini, E., Ajdukovic, D., Ardino, V., Arnberg, F., … & Adjust Study Consortium (2021). Risk and protective factors, stressors, and symptoms of adjustment disorder during the COVID-19 pandemic - First results of the ESTSS COVID-19 pan-European ADJUST study. *European journal of psychotraumatology*, *12*(1), 1964197. https://doi.org/10.1080/20008198.2021.1964197

Mahat-Shamir, M., Pitcho-Prelorentzos, S., Kagan, M., Kestler-Peleg, M., & Lavenda, O. (2023). Adjustment Disorder in the Face of COVID-19 Outbreak: The Impact of Death Anxiety, Media Exposure, Fear of Contagion and Hypochondriasis Symptoms. *Omega (Westport)*, 87(4),1189-1206. https://doi.org/10.1177/00302228211034372.

Makki, N., Alrehaili, D. A., Alrehaili, R. K., Sedaqir, R., & Alahmadi, W. T. (2024). Prevalence of Adjustment Disorder and Its Predictors Among First- and Second-Year Medical Students in Madinah, Saudi Arabia. *Cureus*, *16*(1), e52028. https://doi.org/10.7759/cureus.52028

Mao, Z., Qin, T., Fan, L., Li, N., & Wang, Y. (2024). Factors associated with psychological distress among college students under COVID-19 pandemic: The moderating role of coping styles and social support. *Current Psychology, 43*(19), 17771–17786. https://doi.org/10.1007/s12144-023-05156-1

Mohammadi, F., Masoumi, Z., Oshvandi, K., Khazaei, S., & Bijani, M. (2022). Death anxiety, moral courage, and resilience in nursing students who care for COVID-19 patients: a cross-sectional study. *BMC nursing*, *21*(1), 150. https://doi.org/10.1186/s12912-022-00931-0

Nasri, E., Yousefi, Sh., & Ashouri, A. (2025). Investigating the Psychometric Properties of the Persian Version of the International Adjustment Disorder Questionnaire Among University Students in Tehran City, Iran. *Iranian Journal of Psychiatry and Clinical Psychology*. 2025; 31:E4696.2. http://dx.doi.org/10.32598/ijpcp.31.4996.2

Noriega, C., Sánchez-Cabaco, A., López, J., Pérez-Rojo, G., Sitges, E., & Bonete-López, B. (2024). Protective and vulnerability factors of posttraumatic growth during the COVID-19 pandemic. *Current Psychology, 43*(19), 17740–17750. https://doi.org/10.1007/s12144-023-05058-2

Rahimian-Boogar, I., Talepasand, S., & Jabari, M. (2018). Psychosocial and Medical Determinants of Health-related Quality of Life in Patients with Relapsing-Remitting Multiple Sclerosis. *Noro psikiyatri arsivi*, *55*(1), 29–35. https://doi.org/10.29399/npa.16983

Rajabi, Gh, & Bahrani, M. (2002). Item factor analysis of the Death Anxiety Scale. *Iranian Association Psychology*, 20(5), 331-44. [Persian]

Rayatpisheh, F., Torabizadeh, C., Najafi Kalyani, M., & Farsi, Z. (2023). Relationship between resilience and death anxiety of the older adults during the coronavirus disease 2019 (COVID-19) pandemic. *BMC geriatrics*, *23*(1), 367. https://doi.org/10.1186/s12877-023-04086-8

Razgulin, J., Argustaitė-Zailskienė, G., Petrolienė, R., & Šmigelskas, K. (2024). Sociocultural adjustment and social support as predictors for international medical sciences students' anxiety during COVID-19. *BMC medical education*, *24*(1), 395. https://doi.org/10.1186/s12909-024-05379-1

Rossi, R., Socci, V., Pacitti, F., Mensi, S., Di Marco, A., Siracusano, A., & Di Lorenzo, G. (2020). Mental Health Outcomes Among Healthcare Workers and the General Population During the COVID-19 in Italy. *Frontiers in psychology*, *11*, 608986. https://doi.org/10.3389/fpsyg.2020.608986

Saha, I., Majumder, J., Bagepally, B. S., Ray, S., Saha, A., & Chakrabarti, A. (2023). Burden of mental health disorders and synthesis of community-based mental health intervention measures among adolescents during COVID-19 pandemic in low middle-income countries: A systematic review and meta-analysis. *Asian journal of psychiatry*, *89*, 103790. https://doi.org/10.1016/j.ajp.2023.103790

Seçer, İ., Ulaş, S., & Karaman-Özlü, Z. (2020). The Effect of the Fear of COVID-19 on Healthcare Professionals' Psychological Adjustment Skills: Mediating Role of Experiential Avoidance and Psychological Resilience. *Frontiers in psychology*, *11*, 561536. https://doi.org/10.3389/fpsyg.2020.561536

Seo, E. H., Kim, S. G., Lee, J. H., Dickey, C. C., Kim, M. Y., Ghumman, R. K., & Yoon, H. J. (2023). Psychosocial Factors Influencing Quality of Life Among Medical Students. *Psychiatry investigation*, *20*(11), 1077–1085. https://doi.org/10.30773/pi.2023.0161

Shevlin, M., Hyland, P., Ben-Ezra, M., Karatzias, T., Cloitre, M., Vallières, F., … , & Maercker, A. (2020). Measuring ICD-11 adjustment disorder: the development and initial validation of the International Adjustment Disorder Questionnaire. *Acta psychiatrica Scandinavica*, *141*(3), 265–274. https://doi.org/10.1111/acps.13126

Shi, J., Ma, G., Liu, X., & Jin, Y. (2024). Social isolation and adolescents' psychological wellbeing during the COVID-19 epidemic: The mediating effect of loneliness and the moderating effect of resilience. *Current Psychology, 43*(19), 17163–17174. https://doi.org/10.1007/s12144-024-05637-x

Shokri, O., Kormi Nouri, R., Farahani, M.N., & Moradi A. (2016). The Quality of College Life from Viewpoint of Native and Non-Native Students of Tehran's Public Universities. *Journal of Iranian Cultural Research*, 9(2), 75-100. [Persian]

Soleimani, M. A., Bahrami, N., Yaghoobzadeh, A., Banihashemi, H., Nia, H. S., & Haghdoost, A. A. (2016). Validity and reliability of the persian version of templer death anxiety scale in family caregivers of cancer patients. *Iranian journal of nursing and midwifery research*, *21*(3), 284–290. https://doi.org/10.4103/1735-9066.180390

Tabachnick, B. G., & Fidell, L. S. (2014). *Using Multivariate Statistics (6th ed.).* Harlow: Pearson Education.

Templer, D. I. (1970). The construction and validation of a death anxiety scale. *Journal of General Psychology, 82*(2), 165–177. https://doi.org/10.1080/00221309.1970.9920634

Wen, Y., Zhang, Q. X., Liu, Y., He, X. H., & Gong, Y. W. (2025). Relationship between death anxiety and coping with death competence among Chinese oncology nurses: A chain mediation model. *World journal of psychiatry*, *15*(7), 107416. https://doi.org/10.5498/wjp.v15.i7.107416

Woo, B. F. Y., Ang, W. H. D., Rogers, M., & Zhou, W. (2025). Factors associated with resilience, spiritual and mental well-being of advanced practice nurses: Implications for role integration. *International nursing review*, *72*(1), e70015. https://doi.org/10.1111/inr.70015

Xiao, W., Liu, X., Wang, H., Huang, Y., Dai, Z., Si, M., … , & Su, X. (2023). Mediating role of resilience in the relationship between COVID-19 related stigma and mental health among COVID-19 survivors: a cross-sectional study. *Infectious diseases of poverty*, *12*(1), 27. https://doi.org/10.1186/s40249-023-01074-3

Zapata-Ospina, J. P., Rodríguez, N., Rodríguez, A. M., García-Valencia, J., Jiménez-Benítez, M., Martínez-Ramos,

N., … , & Aguirre-Acevedo, D. C. (2025). Development and validation of the "Adjustment Disorder Scale for Medically Ill Patients - ETAM". *Frontiers in psychiatry*, *16*, 1482888. https://doi.org/10.3389/fpsyt.2025.1482888

Zhang, L., Jiang, M., Wang, L., Zheng, J., & Wang, W. (2023). The Mediating Effect of Perceived Social Support and Medical Coping Modes Between Psychological Resilience and Meaning in Life in COVID-19 Patients. *Patient preference and adherence*, *17*, 571–582. https://doi.org/10.2147/PPA.S391014

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment, 52*(1), 30–41. https://doi.org/10.1207/s15327752jpa5201_2