

Understanding the Impact of Adverse Childhood Experiences on Professional Quality of Life Through Loneliness and Mattering Among Healthcare Professionals

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The current research aimed to explore the relationship of Adverse childhood experiences (ACEs) on Professional quality of life (ProQOL), mediated by Mattering and Loneliness, among healthcare professionals. The research included a large sample of diverse healthcare professionals (HCPs) including nurses, psychologists, counsellors, social workers, and other allied mental health HCPs (N=1253). The study used Structural Equation Modeling (SEM) in two stages: examined causal effect hypotheses, and explored mediation effect hypotheses. The research found that there is an indirect relationship between the levels of ACEs and ProQOL, such as that mattering mediates the negative relationship between Adverse Childhood Experience and ProQOL. The study identified ACEs as a risk factor for mental health issues in HCPs, emphasizing the need for screening and support. It highlighted loneliness and mattering as mediators between ACEs and ProQOL.

Keywords: Healthcare professionals, Adverse Childhood Experiences, Professional Quality of Life, Mattering.

No mud, no lotus" (Hanh, 2014) is a phrase by Thich Nhat Hanh, suggesting that the challenges and adversity we experience in life are necessary for growth and transformation, much like how the lotus flower emerges from muddy waters filled with essential nutrients to bloom beautifully. It illustrates that in the same way the lotus plant needs the mud to grow and bloom, human beings have a similar potential for growth resilience and beauty (Hanh, 2014).

Professional Quality of Life (ProQOL) is an umbrella term describing the positive and negative elements of healthcare professionals' (HCPs) employment outcomes and how these factors influence their overall well-being in relation to their function at work. The ProQOL Scale evaluates three distinct variables that together make up the construct: burnout (BO), secondary trauma stress (STS), thereby assessing the negative aspects, and compassion satisfaction (CS),

which measures the positive aspect of HCPs' well-being in relation to their profession (Stamm, 2010). The original ACEs Study, conducted from 1995 to 1997 by the CDC and Kaiser Permanente explored the impact of ACEs on adult health. Its findings revealed a significant link between ACEs and negative health outcomes in adulthood, including chronic diseases, mental health issues, substance abuse, and diminished overall well-being (CDC, 2021). Research suggests that ACEs, encompassing maltreatment, neglect, and familial dysfunction, have a profound lasting effect on mental health and well-being. Felitti et al. (1998) indicate that ACEs can impede psychological development and elevate the risk of mental health disorders and chronic illnesses later in life (Felitti et al., 1998). The literature documents the link between healthcare professional's history of trauma and the potential experience of vicarious or secondary trauma

(Chrestman, 1999; Pearlman & Mac Ian, 1995). In early research on vicarious trauma (or Secondary Traumatic Stress), Saakvitne (1996) highlighted the dynamics of countertransference in therapeutic relationships, existing in all therapeutic relationships, where caregivers become emotionally involved with their patients. This paired with repeated exposure to trauma can lead to secondary trauma, impacting HCPs' personal and ProQOL (Saakvitne, 1996). Ruiz-Fernández and their colleagues (2020) stated that Working as a healthcare professional is rewarding but also physically demanding and mentally exhausting due to unique stressors in a high-pressure environment. These stressors include irregular schedules, long hours, and exposure to patients' traumatic experiences, all of which can negatively impact their ProQOL (Ruiz-Fernández et al., 2020).

Examining the connection between ACEs and ProQOL among HCPs is crucial due to ACEs prevalence in this field and their potential to lead to burnout (BO) and compassion fatigue (CF). Understanding this link can help improve emotional well-being, job satisfaction, and ultimately, quality of patient care.

The following sections explore the relationship effect between the predictor variables ACEs and ProQOL, and mediator variables loneliness and mattering.

ACEs and ProQOL

ACEs denote potentially traumatic events occurring before age 18, impacting the individual's physical and mental health later in life (CDC, 2020). These include various forms of abuse, neglect, and family challenges, like parental addiction, incarceration, or domestic violence. ACEs, significantly correlate with long-term adult health issues (Chartier et al., 2010).

The concept of ACEs has evolved from research by Felitti and colleagues (1998), highlighting the detrimental effects of childhood adversities on individuals' lives. Subsequent studies have broadened the definition of ACEs to encompass social disadvantages such as poverty, bullying, and parental divorce. Research has demonstrated that ACEs are associated with various negative health outcomes, including chronic diseases, mental health conditions, and socioeconomic disparities (Metzler et al., 2017).

ProQOL encompasses both positive and negative emotions HCPs encounter in their caregiving roles. It comprises three dimensions: CS, BO, and STS (Stemm, 2022). HCPs, often operating in high-pressure environments and regularly exposed to trauma, are particularly vulnerable to experiencing negative aspects of ProQOL. While some studies have found a positive correlation between ACEs and CF, others have reported a negative correlation, with higher levels of ACEs associated with higher levels of CF and lower levels of BO and STS (Gaboury & Kimber, 2022; Maunder et al., 2011; Hiles Howard et al., 2015).

ACEs, Loneliness and Mattering

Loneliness is a subjective emotion discomforting stemming from an individual's social connections, emphasizing the quality rather than the quantity of relationships (Hawkley et al., 2008), a subjective experience causing distress, attributed to deficiencies in one's social connections (Perlman & Peplau, 1982).

ACEs have been linked to negative outcomes including suicidal thoughts, loneliness, and apathy. Emotional and sexual abuse in childhood can predict adult loneliness, and individuals with multiple ACEs are more likely to suffer from loneliness as adults. Trauma can affect individuals' ability to trust and form healthy long-term

relationships, leading to self-destructive behavior and social isolation (Wang et al., 2022; Landry et al., 2022; Ahn, 2021; Hyland et al., 2019).

Mattering is the general sense that people have of their own worth and relevance to other people (Flett, 2022). The Global Mattering Scale (GMS), created by Marcus and Rosenberg (1987), used in this research to gauge the Mattering levels by measuring the average score of the GMS. The answers sum to the ten elements provide a total score on the GMS scale ranges up to ten. Greater mattering is indicated by higher scores (Marcus and Rosenberg, 1987). Mattering, had been found to be influenced by childhood trauma. Emotional and physical abuse and neglect are strongly associated with reduced levels of mattering in children. A high level of mattering predicts greater work engagement and lower BO among HCPs, underscoring the importance of addressing the impact of childhood trauma on their well-being (Flett et al., 2016; Love & Robinson Kurpius, 2022; Mohamed et al., 2022).

ProQOL, Loneliness and Mattering

HCPs, such as nurses, and mental health professionals, are indispensable frontline workers providing vital care to those in need (Adriaenssens et al., 2011). However, the demands of their professions, including high stress levels, long hours, and exposure to trauma, can take a toll on their mental health and well-being, potentially leading to feelings of loneliness and isolation (Craig & Sprang, 2010). Loneliness is a prevalent issue among HCPs due to the nature of their work, which often involves limited social interactions and emotional demands that hinder meaningful connections (Adriaenssens et al., 2011). Additionally, loneliness has been associated with higher levels of BO and lower levels of CS among healthcare workers (Arnetz et al., 2017). Addressing loneliness and social

isolation can significantly enhance the well-being of HCPs, leading to increased job satisfaction, higher retention rates, and improved patient care (Shanafelt et al., 2015). To tackle loneliness and social isolation among healthcare workers, a comprehensive approach is needed. This approach should involve providing opportunities for social interaction, offering mental health resources and support, and promoting the use of tools like the ProQOL assessment to assess and address emotional needs (Al Omari et al., 2020). Understanding and prioritizing HCPs' ProQOL is essential for creating a supportive and resilient workforce capable of delivering high-quality care and support to those in need (Yılmaz & Üstün, 2018).

ProQOL and mattering emerge as pivotal factors in mitigating risks and promoting well-being among HCPs (Epstein et al., 2020). Regular assessments of ProQOL enable professionals to identify stressors such as high STS and BO, thereby facilitating proactive measures for self-care (van Mol et al., 2015). Mattering, defined as an individual's perceived significance and relevance to others, holds particular importance for HCPs. Jung and Heppner (2017) demonstrated that professionals who perceive their work as meaningful report higher job satisfaction and lower BO rates. Similarly, interpersonal mattering, sense of one's work being important to others, was inversely correlated with BO among nurses (Haizlip et al., 2020).

The significance of ProQOL and mattering cannot be overstated for HCPs (Lamperski, 2018). Understanding these concepts enables professionals to prioritize mental health, set boundaries, and enhance task prioritization (Lamperski, 2018). Yadollahi et al. (2016) highlighted the challenges faced by social workers, emphasizing the

importance of prioritizing mental health and self-care to maintain quality care provision. HCPs, including mental health professionals and nurses, are often exposed to high levels of stress and emotional demands (Yadollahi et al., 2016). Neglecting these can have adverse effects on professionals and their clients (Yadollahi et al., 2016).

Method

Research Design

The study utilized a correlational design that aimed to investigate the direct and indirect influences of a ACEs on the HCPs's ProQOL, mediated by their levels of loneliness and mattering. Initially the researcher employed exploratory factor analysis to determine the factor structure of the questionnaires used in the study within the population. To establish the questionnaires' psychometric properties, confirmatory factor analysis (CFA) was carried out using Structural Equation Modeling (SEM). The mediation analysis was carried out by Smart-PLS.

Population and Sample

The study comprises of HCPs from diverse backgrounds, including nurses, counselors, social workers, psychologists, and other HCPs, totaling 1553 participants from over 40 nationalities, with a majority from America, Canada, and India. Data analysis was conducted on a subset of 300 participants for reliability and exploratory factor analysis (EFA), while the remaining 1253 participants were used for confirmatory factor analysis (CFA) and mediation analysis. The participants, with a mean age of 42.74, primarily identified as female, held North American nationalities, and were predominantly psychologists and counselors. They typically lived in households of 2-3 people, worked over 40 hours per week, and had a university-level education, with many holding master's degrees. Close to half of

the participants delivered healthcare services in hospital or outpatient clinic settings, while a fifth of them practiced in private settings

Research Instruments

The 6-sections online survey included an informed consent form detailing the research's purpose, procedures, risks, confidentiality, voluntary participation, contact info, and estimated completion time. The study began with a brief survey gathering demographics including age, gender, marital status, nationality, profession, education level, work hours, household size, followed by standardized scales including 10-item Adverse Childhood Experience (ACE) scale by Felitti and colleagues (1998) assesses various types of childhood adversity, including abuse, neglect, and household dysfunction (Felitti et al., 1998), 5-item Global Mattering Scale (GMS) by Marcus and Rosenberg (1987) measures individuals' sense of significance and importance in their social environment (Marcus and Rosenberg, 1987), 6-item UCLA Loneliness Scale short version (ULS-6) by Neto (1992) evaluates feelings of loneliness and social isolation (Neto, 1992), 30-item Professional Quality of Life ProQOL scale by Stamm (2010) assesses the positive and negative aspects of a professional's work-related experiences, including compassion satisfaction, burnout, and secondary traumatic stress (Stamm, 2010).

Data Collection procedure

An online survey was created with Google Forms and shared with HCPs via messaging apps and social media, ensuring confidentiality and the ability to withdraw. In three months, 1553 responses were gathered, surpassing the required 1200 for analysis, with 300 for reliability testing and the rest for the study.

Data Analysis

This study explored the direct and indirect impacts of ACEs on ProQOL among HCPs using 1553 collected responses. Of these, 300 samples were used to check survey reliability and validity, while 1253 samples were used for confirmatory factor analysis (CFA) and mediation analysis.

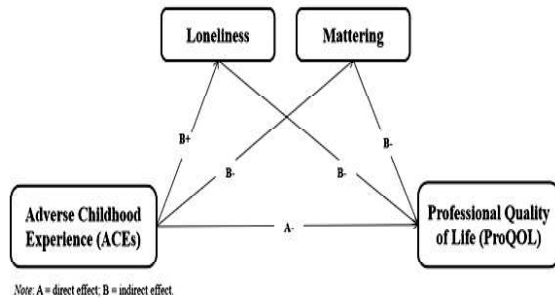


Figure 1. Conceptual Model

Conceptual Model

Figure 1's conceptual framework shows that ACEs directly reduce ProQOL among HCPs, with higher ACE scores correlating with lower ProQOL levels. Additionally, ACEs indirectly affect ProQOL through Loneliness and Mattering, as higher ACE rates decrease these mediating factors, further reducing ProQOL.

Research Hypotheses

H_{a1} : ACEs has a significant direct negative effect on ProQOL: $H1$: ACEs has a significant Positive effect on Loneliness. $H2$: ACEs has a significant Positive effect on Mattering. $H3$: ACEs has a significant Negative effect on ProQOL. $H4$: Loneliness has a significant Negative effect on ProQOL. $H5$: Mattering has a significant Negative effect on ProQOL.

H_{a2} : ACEs has a significant indirect effect on ProQOL mediated by Loneliness and Mattering; $H6$: Loneliness mediates the negative relationship between ACEs and ProQOL. ACEs led to increased feelings of loneliness, which in turn negatively affect ProQOL. $H7$: Mattering mediates the

negative relationship between ACEs and ProQOL. ACEs increase feelings of mattering, which subsequently impacts ProQOL negatively.

Results and Discussion

To determine the effect of ACEs on ProQOL, the study examined SEM and Causal Effect Hypotheses. It analyzed the impacts of ACEs on Loneliness, Mattering, and ProQOL, as well as the effects of Loneliness and Mattering on ProQOL, in line with hypotheses H1 through H5. Figure 2 depicts the Smart-PLS graph illustrating the causal effects of the proposed structures.

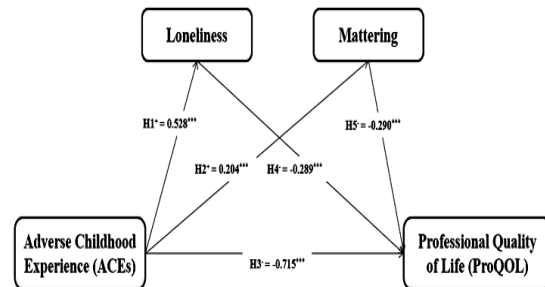


Figure 2 PLS Graph of Structural Model for Testing the Causal Effects

The R^2 values for Loneliness and Mattering were .065 and .010, respectively, indicating weak coefficients of determination. Conversely, the R^2 for ProQOL was .328, suggesting a substantial coefficient of determination. This indicates that 32.8% of the variations in ProQOL are explained by its three predictors.

The Q^2 values for ProQOL, Mattering, and Loneliness were .303, .572, and .529, respectively, notably surpassing zero, demonstrating the model's predictive relevance according to Chin (2010). Taking all factors into account, the model demonstrates a favorable fit and robust predictive significance. Following the guidance of Wetzels et al. (2009), the model's goodness of fit measure (GOF) was

determined to be .302, suggesting a moderate to large level of GOF.

The SRMR value of .066 for the structural model falls within the recommended threshold of less than .08, indicating a good fit according to Hair et al. (2016). Following this, the coefficient parameters are examined to validate the proposed causal relationships as shown in Table 1.

All suggested pathways demonstrated statistical significance, with p-values below the conventional threshold of .05, as indicated in Table 1. Therefore, hypotheses H1, H3, and H5 regarding causal impact were confirmed. The path analysis outcomes are subsequently discussed in connection with the causal effect hypotheses in the ensuing section.

Table 1. Results of Examining Causal Effect Hypotheses

Relationship	Std Beta	Std Deviation	t	P	95% LL-CI	95% UL-CI	f ²	VIF	Hypothesis Result
ACEs à Loneliness	0.528***	0.057	9.261	0.000	0.415	0.640	0.070	1.000	H1+) Supported
ACEs à Mattering	0.204***	0.057	3.583	0.000	0.094	0.318	0.010	1.000	H2-) Rejected
ACEs à ProQOL	-0.715***	0.055	12.933	0.000	-0.821	-0.604	0.162	1.094	H3-) Supported
Loneliness à ProQOL	-0.289***	0.024	12.289	0.000	-0.334	-0.243	0.111	1.117	H4-) Supported
Mattering à ProQOL	-0.290***	0.023	12.527	0.000	-0.335	-0.244	0.118	1.055	H5-) Supported

*p < 0.05 , **p < .01, ***p < .001

ACEs has a significant Positive effect on Loneliness (H1+)

In Table 1’s analysis of loneliness prediction, ACEs showed a t-value of 9.261 and a p-value of .000, indicating a significant association with loneliness. There were no confidence intervals straddling zero, suggesting a positive association. With a typical path coefficient of .528, loneliness increases by .528 standard deviations per standard deviation increase in ACEs. The small effect size (f² = .070) and low variance inflation factor (VIF = 1.000) suggest no significant issues with bias or collinearity, supporting hypothesis H1.

ACEs has a significant Negative effect on Mattering (H2-)

In predicting Mattering, ACEs displayed a t-value of 3.558 with a p-value of .000, indicating significant association. There were no intervals between zero and one, affirming a positive relationship. With a standard path

coefficient of .204, a small effect size (f² = .010), and a variance inflation factor of 1.000, indicating absence of collinearity, hypothesis H2 was rejected.

ACEs has a significant Negative effect on ProQOL (H3-)

When predicting ProQOL, ACEs demonstrated a significant association with a t-value of 12.933 and a p-value of .000. The standard path coefficient of - .715 suggests a negative relationship, indicating a decrease in ProQOL by .715 standard deviations with each standard deviation increase in ACEs. The moderately small effect size (f² = .162) and variance inflation factor of 1.094, below the 3.3 threshold, supported hypothesis H3.

Loneliness has a significant Negative effect on ProQOL (H4-)

When predicting ProQOL, loneliness exhibited a significant association with a t-value of 12.289 and a p-value of .000,

indicating no intervals between zero and one. The negative correlation, reflected in the standard path coefficient of $-.289$, suggests a decrease in ProQOL by $.289$ standard deviations with each standard deviation increase in loneliness. The effect size ($f^2 = .111$) was small, and the variance inflation factor of 1.117 , below the 3.3 criterion, indicated no collinearity, supporting hypothesis H4.

Mattering has a significant Negative Effect on ProQOL (H5-)

When predicting ProQOL, the likelihood of obtaining a t-value as high as 12.527 in absolute value is $.000$ for Mattering. At the $.001$ level, the regression weight differs significantly from zero, with no intervals between zero and one. With a standard path coefficient of $-.290$, a negative association is observed, indicating that for every standard deviation increase in Mattering, the ProQOL decreases by $.290$ standard deviations. The effect size, with an f^2 of $.118$,

is small. The variance inflation factor, found to be 1.055 , falls below the 3.3 criterion, indicating that collinearity is not an issue. With these data, hypothesis H5 is supported.

Examining the Mediation Effect Hypotheses

In mediation analysis, the significance of correlations between three variables (paths a, b, and c) is crucial, as outlined by Baron & Kenny (1986) and Mathieu and Taylor (2006). If any of these links is not significant, meaningful mediation cannot be established. When all three paths are significant and the direct effect of the independent variable (IV) on the dependent variable (DV) is not significant (path a'), the mediating variable acts as a full mediator. Otherwise, mediation may only be partial. If neither full nor partial mediation occurs, interactions between IV and DV can be direct, indirect, or nonexistent. Table 2 summarizes path effects and hypothesis outcomes.

Table 2. Results of Examining Mediation Effect Hypotheses

Path: IV→M→DV	Path Coefficient (β)	Standard Deviation	T-value	P-value	Hypothesis Result
ACEs → Loneliness → ProQOL					
Total Effect: ACEs → ProQOL (path a)	-0.927***	0.054	17.161	0.000	H6) Supported Mediation
Direct Effect: ACEs → ProQOL (path a')	-0.715***	0.055	12.933	0.000	
Indirect Effect: ACEs →					
Loneliness → ProQOL (path bc)	-0.153***	0.021	7.288	0.000	
ACEs → Loneliness (path b)	0.528***	0.057	9.261	0.000	
Loneliness → ProQOL (path c)	-0.289***	0.024	12.289	0.000	
ACEs → Mattering → ProQOL					
Total Effect: ACEs → ProQOL (path a)	-0.927***	0.054	17.161	0.000	H7) Supported Mediation
Direct Effect: ACEs → ProQOL (path a')	-0.715***	0.055	12.933	0.000	
Indirect Effect: ACEs → Mattering →					
ProQOL (path bc)	-0.059***	0.017	3.550	0.000	
ACEs → Mattering (path b)	0.204***	0.057	3.583	0.000	
Mattering → ProQOL (path c)	-0.290***	0.023	12.527	0.000	

* $p < .05$, ** $p < .01$, *** $p < .001$;

Loneliness (UCLA Loneliness Scale short version; ULS-6) mediates the negative relationship between ACEs and ProQOL (H6)

The findings demonstrate that Adverse ACEs significantly influences ProQOL directly and indirectly through Loneliness mediation. Without Loneliness as a mediator, ACE had a significant total effect on ProQOL (at .001 level; β_{Total} (path a) = - .927, $t > 1.645$, $p < .001$). However, when Loneliness was included as a mediator, the direct effect of ACE on ProQOL remained significant (at .001 level; β_{Direct} (path a') = - .715, $t > 1.645$, $p < .001$), indicating partial mediation. Additionally, the effect of ACE on Loneliness and its subsequent impact on ProQOL were both statistically significant (at .001 level; $\beta_{\text{IV to M}}$ (path b) = .528, $t > 1.645$, $p < .001$. and), supporting the hypothesis that Loneliness mediates the relationship between ACE and ProQOL (H6). As depicted in Table 2, the effect of ACEs independent variable on Loneliness as mediator (path b) was statistically significant at .001 level; $\beta_{\text{IV to M}}$ (path b) = .528, $t > 1.645$, $p < .001$. Further, the effect of Loneliness as mediator on ProQOL as a dependent variable (path c) was also statistically significant at .001 level; $\beta_{\text{M to DV}}$ (path c) = - .289, $t > 1.645$, $p < .001$.) Furthermore, the indirect effect of ACE on ProQOL through Loneliness mediation was also significant (β_{Indirect} (path bc) = - .153, $t > 1.645$, $p < .001$), indicating a negative influence.

Mattering (GMS) mediates the negative relationship between ACEs and ProQOL (H7)

Table 2 indicates that the total effect of ACEs on ProQOL, without Mattering as a mediator, was significant at the .001 level: \hat{a}_{Total} (path a) = - .927, $t > 1.645$, $p < .001$.

The direct effect of ACEs on ProQOL, with Mattering as a mediator (path a'), was statistically significant at the .001 level:

β_{Direct} (path a') = - .715, $t > 1.645$, $p < .001$. Additionally, in Table 8, the effect of ACEs on Mattering (path b) and the effect of Mattering on ProQOL (path c) were both statistically significant at the .001 level: $\beta_{\text{IV to M}}$ (path b) = .204 and $\beta_{\text{M to DV}}$ (path c) = - .290, respectively, with t-values greater than 1.645 and p-values less than .001.

These findings suggest that Mattering mediates the relationship between ACEs and ProQOL, supporting hypothesis H7. The mediation was partial, given the statistical significance of path a'. Additionally, ACEs has a significant indirect negative effect on ProQOL through Mattering, with a β_{Indirect} (path bc) of - .059, $t > 1.645$, $p < .001$.

The study's data analysis occurred in two main stages. Firstly, preliminary analysis ensured data met fundamental assumptions for Structural Equation Modeling (SEM), addressing issues like shared method variance and multicollinearity. Secondly, SEM was applied to evaluate hypotheses using a path analysis in SMART-PLS 4.0. Results confirmed causal hypotheses (H1, H3, H4, and H5), but disproved H2 due to surprising positive associations. Mediation hypotheses (H6 and H7) were supported, indicating ACEs negatively impact ProQOL through loneliness and mattering.

Practical implications

This study identifies ACEs as a significant risk factor for mental health issues among HCPs, suggesting the importance of screening and support. Additionally, the study highlights the role of loneliness and mattering in linking ACEs to ProQOL, suggesting interventions promoting social connections and a sense of mattering. Healthcare organizations can promote and cultivate staff connections through socializing, and nurture an environment that values and respects HCPs.

Limitations

One limitation of the study is its cross-sectional nature, allowing conclusions only about the relationships between variables at a single point in time. These relationships might vary over time, affecting the strength of the indirect effect of ACEs on ProQOL through loneliness and mattering. Another limitation is the study's focus on HCPs, possibly limiting generalizability to other populations. For instance, the indirect effect of ACEs on ProQOL via loneliness and mattering may differ among professions like doctors and teachers, who also have caregiving roles.

Conclusion and Recommendations

The impactful finding of the study suggests that loneliness and mattering play important roles as mediators in the relationship between ACEs and ProQOL.

The study reveals that loneliness and mattering act as significant mediators in the link between ACEs and ProQOL. Participants reported higher levels of loneliness with increasing ACEs ratings, indicating that loneliness mediates the adverse impact of childhood experiences on ProQOL. This is supporting earlier research suggests that ACEs, which include stressful events disrupting typical activities and relationships, can have lasting effects like loneliness (Perlman & Peplau, 1981; Bowlby & Bowlby, 2012). These experiences may originate from traumatic incidents like loss of relationships or lack of social support, leading to loneliness (Rokach, 1989). Additionally, studies show that emotional and sexual abuse (Landry et al., 2022), along with experiences of bullying for both the victim and the perpetrator, contribute to higher levels of loneliness in adulthood (Tritt & Duncan, 1997). Allen et al. (2023) found in a UK Biobank study with over 80,000 participants that childhood trauma heightened susceptibility to social exclusion, persisting

despite factors like loneliness and depressive symptoms. Ejlskov et al. (2019) demonstrated a dose-response relationship, where higher exposure to social adversities in childhood predicted increased loneliness later in life. Lin and Chiao (2020) found a significant association between ACEs and loneliness in adulthood, even after adjusting for individual characteristics, with college enrollment reducing the likelihood of severe emotional loneliness and social isolation. Additionally, individuals with many traumatic childhood experiences are prone to insecure attachment patterns and subsequent loneliness (Ahn, 2021). Jalilian et al., 2023 found that early maladaptive attachment experiences mediate loneliness in people with ambivalent and avoidant attachment styles experiencing more loneliness due to disconnection and rejection. Hyland et al. (2019) found that trauma in childhood or adulthood increases loneliness-related distress. Mumford et al. (2023) identified two categories of childhood adversity: one with family dysfunction and lower interpersonal abuse (13.4% of the sample), and one with high adversity, including parental discord and child abuse (5.1%). Both groups reported greater loneliness and lower optimism in adulthood. Wong et al. (2018) also found a positive correlation between ACE scores and adverse mental health outcomes like suicidal behavior, depression, and loneliness, due to impaired adult attachment systems and avoidance coping mechanisms.

The study also revealed a direct positive relationship between ACE scores and levels of mattering. Contrary to the initial hypothesis, participants with higher ACE scores reported higher levels of mattering. This indicates that mattering mediates the negative impact of ACE on ProQOL in HCPs, suggesting that ACEs can foster a heightened sense of mattering despite their associated trauma. Enduring ACEs can foster a strong sense of purpose and mattering. In a study

on college students, participants reflected on positive and negative past experiences, showing that unpleasant experiences were linked to higher purpose but lower importance and coherence (Rose et al., 2023). Research often overlooks childhood resilience despite focusing on adulthood resilience. Tedeschi et al. (1998) describe “posttraumatic growth” as positive effects from trauma, including renewed spiritual life and personal growth, aligning with the idea that adversity can strengthen individuals. Seery et al. (2013) found that individuals with moderate lifetime adversity report better mental health and well-being than those with high or no adversity. This association links moderate adversity to reduced discomfort, functional impairment, posttraumatic stress symptoms, and increased life satisfaction. Additionally, mild adversity may build resilience, leading to fewer negative reactions to suffering and more favorable responses to stress (Seery et al., 2013). Liu et al. (2015) suggested that early exposure to mild stressors can build resistance later in life. Moderate stressors, seen as positive stressors, depend on individual vulnerability. While specific stressors’ positive effects can’t be generalized, exposure to varied stimuli with moderate stress is thought to yield positive outcomes. Low levels of early childhood stress might increase future stress susceptibility, highlighting the complex relationship between adversity and resilience. ACEs are associated with reduced feelings of coherence and significance, yet sense of purpose remains unaffected. Instead, having a purpose may serve as motivation in overcoming childhood hardships. LaNoue et al. (2020) discovered that 15% of individuals reported primarily positive effects from adverse events, showcasing remarkable resilience. This finding aligns with research indicating positivity’s protective role in adult health. Moreover, the positive link between ACEs and

matterings implies that navigating adversity fosters a deep appreciation for one’s existence, enhancing overall life significance. These insights may help explain the study’s new findings: higher ACEs scores were associated with higher levels of matterings among the population examined.

The outcomes of this study shed significant light on how ACEs affect ProQOL, directly and indirectly, through loneliness and matterings among HCPs. These findings indicate ACEs as a clear risk factor for mental health challenges in HCPs, with positively loneliness and matterings mediating this association.

This study reveals the societal implications of acknowledging the positive link between ACEs and matterings. By changing how we view these experiences and recognizing their potential for personal growth and resilience, society can offer better support to individuals who faced early life challenges. This shift may lead to targeted interventions and support systems that empower individuals to utilize their experiences for personal development. Building upon the study’s outcomes and aiming to enhance our understanding between ACEs, ProQOL, loneliness and matterings, and offer a supportive environment for HCPs, it is imperative to refine research methodologies and mitigate potential biases, laying the groundwork for future inquiries. Diversifying data collection methods, delving into specific ACEs, exploring resilience factors, and expanding participant diversity across professions can enrich our understanding and guide targeted interventions.

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