DOI: 10.52131/pjhss.2025.v13i1.2762

Pakistan Journal of Humanities and Social Sciences

Volume 13, Number 01, 2025, Pages 509-518
Journal Homepage:
https://journals.internationalrasd.org/index.php/pjhss

Relationship between Adverse Childhood Experiences and Daily Stress Responses: Moderating Roles of Pet Attachment and Coping Strategies among Pet Owners

Hooria Azam [1], Neelam Ehsan [2], Fiza Rehman[3]

[1] MS Scholar, Department of Clinical Psychology, Shifa Tameer e Millat University Islamabad, Pakistan.
Email: hooriaazamkhan@gmail.com
[2] Professor, Department of Clinical Psychology, Shifa Tameer e Millat University Islamabad, Pakistan.
Email: neelam.dcp@stmu.edu.pk
[3] Senior Lecturer, Department of Clinical Psychology, Shifa Tameer e Millat University Islamabad, Pakistan.
Email: fiza.dcp@stmu.edu.pk

ARTICLE INFO

Article History:
Received: January 17, 2025
Revised: March 28, 2025
Accepted: March 29, 2025
Available Online: March 30, 2025

Keywords:
Adverse Childhood Experiences
Daily Stress Responses
Pet Attachment
Coping Strategies

Funding:
This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

ABSTRACT

The purpose of the study was to investigate the relationship between adverse childhood experiences (ACEs) and daily stress responses, focusing on the moderating roles of pet attachment and coping strategies among pet owners residing in Rawalpindi and Islamabad, Pakistan. A sample of 130 individuals aged 20 to 37 years, were collected through snowball sampling technique. The study employs of self-report measures, including the Adverse Childhood Experiences (ACEs) Questionnaire, the Daily Stress Response Scale (DSRS), The Scale of Comfort from Companion Animal (CCAS), and the Coping Scale (CS). Descriptive, correlational and regression analyses were computed to analyze the relationship between adverse childhood experiences, daily stress response, and the moderating roles of pet attachment and coping strategies. The results of the study suggested a significant positive correlation between ACEs and daily stress responses, supporting the hypothesis that individuals with a history of ACEs experience elevated stress. The regression analysis demonstrated that the coping strategies and pet attachment significantly moderated the relationship between ACEs and daily stress responses. These finding further suggest that emotional support from pets and effective coping mechanisms can guard the adverse and negative effects of childhood experiences on daily stress responses, in the adulthood. The study focused on the importance of pet attachment and coping strategies in reducing increased stress, particularly for individuals which are affected by ACEs. This research highlights the importance of applying early interventions for individuals with adverse childhood experiences (ACEs) which is essential in reducing the risk of long-term negative impacts on stress regulation and overall mental well-being.

Corresponding Author's Email: hooriaazamkhan@gmail.com

1. Introduction

The adverse childhood experiences are defined as possibly traumatic situations and events that take place during individual's childhood. These can include events of physical, emotional, or sexual abuse, experiencing domestic violence, having a family member attempt or had a fatal outcome, or growing up in a home environment affected by substance abuse, mental health issues, verbal abuse or uncertainty from parental separation, or divorce. Since the original ACEs study was conducted by the Centers for Disease Control and Prevention in 1998, over two decades of research have repeatedly shown the link between ACEs and long-term effects on well-being and mental health (Jones, Merrick, & Houry, 2020). According to, World Health Organization (WHO) stress is a feeling of unease or tension that comes from

facing challenging situations. It is a natural response that helps an individual to deal with obstacles and risks in their lives, and everyone experiences it to some degree. However, how we handle stressful situation plays a big role in our overall well-being. Stress affects both the minds and the bodies. However a small amount of stress can be beneficial in getting things done, but too much of it can result in both mental and physical health difficulties. Managing stress effectively can help a person feel less overwhelmed and distressed which supports both our mental and physical health. If stress becomes on-going and starts affecting our capability to function in day to day life, whether at work or school, it may lead to mental health consequences. Every individual experiences stress differently, with varying coping strategies and symptoms (Stress, 2022, June 17).

Furthermore, coping strategies play a very critical role in how individuals manage and oppose stressful situations. These strategies involve the mental and behavioral attempts an individual makes to reduce or adjust to stressful situations and the emotional distress that comes with them. Generally, coping strategies are classified into two main types: approach-oriented and avoidance-oriented strategies. Approach strategies involve directly addressing and responding to the problem, such as problem-solving or gathering information to deal with the stressor. The individuals who use these strategies tend to deal with stressful situations more efficiently and have shown better adjustment to life difficulties and challenges. On the other hand, the avoidance strategy aims on decreasing emotional tension by not coping with the problem openly and directly. This may involve dismissal of unrealistic optimism, or avoiding the situation altogether. While these methods might provide short-term relief from a stressor but they are typically related with higher levels of psychological discomfort in the longer run. Studies regularly shows that those who rely more on approach coping strategies tend to go through better mental and emotional outcomes, while those individuals who use avoidance strategies often face increased challenges in handling and coping with stress (Sahler & Carr, 2009). Moreover, pet attachment indicates to the emotional connection that is formed between humans and their pets. This attachment is characterized by feelings of affection, warmth, companionship, and a sense of accountability for the well-being of the animal. There are some important factors that contribute to pet attachment including the physical proximity shared between the pet and the owner, as well as the daily acts of caregiving. For many people, pets typically serve as a foundation of comfort, emotional support, and companionship, especially during times of stress or isolation. Furthermore, pet attachment has been associated to various psychological benefits, including decreased levels of stress, anxiety, and feelings of loneliness. The connection formed with pets often enhances the overall well-being and promotes a sense of purpose of the pet owners. This bond emphasizes the importance of animals in offering not only companionship but also a feeling of connection that improves the quality of life for many individuals (Faner et al., 2024).

Additionally, childhood adversity has very prolonged negative effects on health throughout individual's life. Study revisions the frequency estimates of ACEs using the most wide ranging and comprehensive sample available. The ACEs questionnaire covered eight dimensions: physical, sexual and emotional abuse, mental illness in household, substance abuse or use, domestic violence, confinement, and parental separation or divorce. The results were examined by demographic factors and group variations were measured. The outcomes revealed that childhood adversity was prevelant worldwide, there were certain groups facing higher rates (Giano, Wheeler, & Hubach, 2020). However, the impacts of pet ownership on human well-being have diverse evidence based results, despite of widespread beliefs that pets elevate wellness. A study was conducted to investigate how pet guardianship can affect the well-being during and after COVID-19 pandemic by comparing pet owners and non-pet owners; using large reflective sample of Canadian adults which included 1220 pet owners and 1204 non-pet owners. The findings of the study revealed that the individuals with pets documented high level of well-being on most indicators compared to non-pet owners, despite of the type of pet they owned. However, more dog owners reported elevated well-being than those with other types of pets (Amiot, Gagné, & Bastian, 2022). The biopsychosocial model aims to improve the awareness of Adverse Childhood Experiences (ACEs) by incorporating insights from socio-ecological systems theory by Bronfenbrenner (1977) and developmental model by Belsky (1980). This theory highlights how human development is affected by various interrelated environmental systems, particularly the family and more extensive social environments. Furthermore, the focus is on two key ecological levels: the individual and the family context. At

the individual level, child's personal experiences, psychological development and biological responses, which involves how ACEs like abuse or disregard impact their emotional and intellectual advancement of an individual.

Furthermore, one of the initial theories are linked to the stress response is "fight or flight" theory, developed by Cannon. Cannon acknowledged that in stress response the autonomic nervous system is triggered and activated, which trains individual's body to either fight (confront) or flight (escape) from the dangerous situation. When the threats were more prompt and physical, this reaction may have been beneficial for sustenance during early human history. The contemporary life often presents stressors that are ongoing over longer periods, such as job demands, academic responsibilities, or social pressures. These situations are more complicated and need extended coping mechanisms, and the fight-or-flight response is often inadequate or maladaptive for coping with chronic stressors (MSEd, 2024, June 17). Moreover, the perception of stress was further expanded by developing the idea and theory of the General Adaptation Syndrome (GAS) introduced by Selye, which explained the body's physiological reaction to prolonged stress experiences. The GAS comprises of three phases: alarm, resistance, and exhaustion. The alarm phase is parallel to Cannon's fight-or-flight response, where the body primarily prepares to activate its defenses against a threat. The hypothalamus sends signals to the pituitary gland, precipitating to the arousal of the sympathetic nervous system. In the second phase of resistance, the body normalize and adapt to the ongoing stressor, sustained to release stress hormones to preserve its defense mechanisms. However, if the stress continues for too long, the body's support becomes depleted, which results to the exhaustion phase. At this point, the body's capability to sustain its stress response lessens, leaving the individual fragile to stress-related issues, as the body can no longer cope with the collective strain (Edwards, 2024, February 3).

The present research aims to offer deeper insights and knowledge on the relationship between adverse childhood experiences (ACEs) and daily stress levels, with a particular emphasis on the moderating roles of pet attachment and coping strategies among pet owners. This study performs as a crucial reference for future researchers interested in investigating the interplay between ACEs and daily stress responses of pet owners. By providing a comprehensive examination of these variables, the research enhances the in understanding how owning a pet may facilitate individuals in coping with daily stress responses which would have probably originated from early ACEs. Additionally, this research is influential for educators, including professors and lecturers, in forming courses and lessons related to stress management strategies and coping involving animal companionship as an interventional plan. The findings may offer valuable background for discussing the therapeutic potential benefits of owning pets and exploring pioneering approaches and intervention to manage stress. For centuries, humans have kept companion animals, implying shared benefits, though scientific studies demonstrated mixed results. A study examined how social support from pets affects the wellbeing of cat and dog owners. This proposes that pets can enhance psychological functioning, with emotional proximity being a significant influencing factor (Hardie, Mai, & Howell, 2023). Similarly a study conducted by Kalmakis and Chandler (2014) determined the social advantages of human animal relationships, especially in providing assistance and companionship in an urban setting in Bangladesh. Moreover**,** a study examined the psychological well-being, perceived stress, and coping strategies of pet owners (dogs, cats, or both) contrasted to non-pet owners. Participants comprised of male and female Bengali individuals. The study proposed that owning a pet positively influences physical health and psychological well-being (Sarkar, Ghosh, & Bose, 2022).

The objectives of the current study were to examine the association between adverse childhood experiences (ACEs) and daily stress response among pet owners. Furthermore, to investigate if pet attachment and coping strategies moderates the relationship between adverse childhood experiences (ACEs) and daily stress response. Despite these findings, an evident research gap exists regarding the role of pet ownership in coping with daily stress responses, especially in Pakistan where people are not very used to keeping pets. The current study targets to address this gap by assessing the relationship between ACEs and daily stress responses, and analyzing how pet attachment and coping strategies may regulate these effects. Additionally, this research enhances in filling the literature gap in the context of Pakistan, as no such studies have been administrated within Asian population.

2. Materials and Method

The study is based on cross sectional and correlational research design. The snowball sampling technique was utilized. The sample comprised of 130 participants both males and females in their early adulthood, having age range of 20 to 37 years. All of whom were pet owners, located in Rawalpindi and Islamabad, Pakistan. The present study incorporated individuals who are the primary caretakers of a pet, such as a dog, cat, or bird, during their early adulthood. Participation was restricted to those who are actively accountable for the daily care and well-being of their pet, which guaranteed that the study concentrates on the experiences of those explicitly involved in pet care.

The Questionnaire of Adverse Childhood Experiences was developed by Felitti et al. (1998), consists of 10 items, the participants provided their response on a dichotomous scale (i.e. Yes = 1, and No = 0). It is a self-report assess for individuals of 18 years and above. The severity of the scores were classified in into three ranges, (Low number of ACEs: 0-1, Moderate Number of ACEs: 2-3, High Number of ACEs: 4-10). Cronbach's alpha is 0.86, which indicates high internal consistency. The Daily Response Stress Scale developed by Debowska et al. (2022), consists of 30 items scored on 5-point Likert scale (Never: 0, Rarely: 1, Occasionally: 2, A lot of the Time: 3, Nearly all the Time: 4). High scores show increased level of stress response. Cronbach's alpha for stress response range is .91. This reliability coefficient demonstrates that DRSS subscales have strong internal consistency. The Comfort from Companion Animal Scale developed by Zasloff (1996), consists of 11 items to evaluate the level of emotional comfort companion animal owners receive from their companion animal. The responses were provided on a 4-point Likert scale ranging from "strongly disagree" to "strongly agree". High scores indicates more attachment and emotional comfort from companion animal. Cronbach's alpha is .91 which shows high internal consistency. The 4 point likert, Coping Scale includes13 items (Hamby, Grych, & Banyard, 2015), (Mostly true about me: 4, somewhat true about me: 3, A little true about me: 2, Not true about me: 1). Higher scores indicated higher levels of cognitive, emotional and behavioral coping. Cronbachs alpha of coping scale is .91 which shows high internal consistency.

2.1. Procedure

In the current study, correlational research design was employed. The sample was obtained by employing a non-random snowball sampling technique. The sample of 130 pet owners was approached. Participants were offered with written and verbal informed consent. Assurance was given to them about confidentiality and anonymity of their data. The guidelines were provided in to ensure that participants are completely aware. After that the participants were asked to sign the consent form after that they filled out the demographic variable sheet, Adverse childhood experiences (ACES) questionnaire, Daily response stress scale, Comfort from Companion Animals Scale (CCAS) and Coping scale. In order to identify the results, SPSS was used for descriptive statistics, Correlation Analysis, Linear Regression Analysis and Moderation Analysis.

2.2. Ethical Considerations

Under professional supervision, the current research was conducted. Approval of Institutional Review Board and Ethical Committee of Department of Psychology was attained, to ensure the safety of the participants of the study. In addition, consent was obtained and none of the participants was forced to participate in the study. All details and data were kept confidential. Comprehensive details were given to every participant.

3. Results

Table 1: Frequencies and Percentages of Demographic Variables (N = 130)

S.no	Variable	Groups	*f* (%)
1.	Gender	Male	64 (49.2)
		Female	66 (50.8)
2.	Age	20 to 29	78 (60.0)
		30 to 39	52 (40.0)
3.	Socioeconomic Status	Lower Class	30 (23.1)
		Middle Class	71 (54.6)
		Upper/Elite Class	29 (22.3)
4.	Pet Ownership		130 (100)
5.	Type of Pet	Dogs	40 (30.8)

	Cats	64 (49.2)
	Birds	26 (20.0)

Note: f = Frequency; % = Percentage

The Table suggests that percentages and frequencies of the demographic variables of the study that were gender, age, socio economic status, pet ownership and the type of pet (i.e. Dogs, cats and birds). Both genders had fair opportunity to participate in the study. The minimum age range was 20 and the maximum age range was 37. The participants from lower middle class were 23.1%, the participants from middle class were 54.6 percent and the participants from upper/elite class were 22.3 percent. All the participants in the study were pet owners and the type of pet they owned were 30.8% dog owners, 49.2 cat owners and 20.0 were bird owners.

Table 2: Severity Ranges of Adverse Childhood Experiences Questionnaire, Daily Stress Response Scale, Comfort from Companion Animal Scale and Coping Scale.

S. no			Scoring		
1.	ACEs	No Experiences	Low Risk	High Risk	
		0	1 – 3	4 – 10	
2.	DSRS	Minimal Stress	Low Stress	Moderate Stress	High Stress
		0 – 30	31 – 60	61 – 90	91 – 120
3.	CCAS	Minimal	Mild	Moderate	Severe
		0 – 11	12 – 22	23 – 33	34 – 44
4.	CS	Minimal	Mild	Moderate	Severe
		0 – 13	14 – 26	27 – 39	40 – 52

Note: ACEs= Adverse Childhood Experiences Questionnaire; DSRS = Daily Stress Response Scale; CCAS = Comfort from Companion Animal Scale; CS = Coping Scale

The Table suggests that the scoring and severity ranges of adverse childhood experiences questionnaire, daily stress response scale, comfort from companion animal scale and coping scale.

Table 3: Pearson Bivariate Correlation Analysis for study variables (N = 130).

S. no	Variables	M	SD	1	2	3	4
1.	ACEs	*61.92*	*18.65*	-	-	-	-
2.	DSRS	*84.70*	*24.87*	.86**		-	-
3.	CCAS	*35.01*	*5.70*	.28**	.34**	-	-
4.	CS	*32.83*	*9.30*	–.22*	–.25**	.19*	-

Note: M = Mean; SD = Standard Deviation; ACEs = Adverse Childhood Experiences Questionnaire; DSRS = Daily Stress Response Scale; CCAS = Comfort from Companion Animal Scale; CS = Coping Scale

The Table presents the correlational analyses to examine the relationships among adverse childhood experiences (ACEs), daily stress response, coping strategies, and pet attachment on 130 participants. A very strong positive correlation was found between ACEs and daily stress response ($r = .86$, $p < .01$), supporting the hypothesis that greater childhood adversity is associated with increased stress in daily life. The coping strategies were positively associated with both ACEs ($r = .28$, $p < .01$) and stress ($r = .34$, $p < .01$), suggesting a compensatory use of coping mechanisms in response to higher stress. Pet attachment was negatively correlated with ACEs ($r = –.22$, $p < .05$) and stress ($r = –.25$, $p < .01$), indicating that stronger bonds with pets may buffer against the impact of childhood trauma and current stress. These results provided initial support for the moderating role of pet attachment and coping strategies in ACEs and daily stress relationship.

Table 4: Linear Regression Analysis for the Impact of Adverse Childhood Experiences Questionnaire, and Daily Stress Response Scale (N = 130).

Variables	B	S.E	B	p
Constant	13.605	3.875		
ACEs	1.148	.060	.861	.000
R	.861			
R^2	.741			
ΔF	367.007			

Note: ER = Emotional Regulation; B = Unstandardized Coefficient; S.E = Standard Error; β = Standardized Coefficient; p = Significant value; R = Correlation; R_2 = Correlation Square; △ F = F Statistics

The Table 4 suggests the linear regression analysis to assess the impact of Adverse Childhood Experiences (ACEs) on Daily Stress Responses among the sample (N = 130). The result indicate that the ACEs significantly predicts DSRS scores (B = 1.148, β = .861, p < .001). The unstandardized coefficient (B) suggests that for every one-unit increase in ACEs, DSRS cores increase by 1.148 units. A strong positive correlation (R = .861) between the variables, with Adverse Childhood Experiences explaining approximately 74.1% of the variance in Daily Stress Response Scores (R_{2} = .741). The change in F Statistic ($\triangle F$ = 367.007, p < .001) confirms the model is statistically significant. These findings highlight the impact of ACEs on daily stress responses, and emphasizing the essential and important role of early life experiences in affecting daily life stress regulation.

Table 5: Moderating Role of Pet Attachment in Relationship of Adverse Childhood Experiences and Daily Life Stress Responses (N=130).

	Model 1		**95% CI** **LL**	**UL**	
Variables	*B*	*SE*	*LL*	*UL*	*P*
Constant	39.18	18.50	2.74	75.62	.0350
ACEs	.74	.32	.11	1.37	.0210
CCAs	-.73	.29	-1.29	-0.17	.0110
ACEsxCCAs	.-0117	.0045	-.0206	.0028	.0120
R^2	.74				
ΔR	.025				

Note: ΔR2 = Per Unit Change, B = Standard Coefficient, SE = Standard Error, Cl = Confidence Interval, LL = Lower Limit, UL = Upper Limit, p = Significance level (p<.05).

The results of the moderation analysis (Model 1) suggests that adverse childhood experiences (ACEs) are positively associated with daily life stress responses (B = 0.74, p = .021), which suggests that individuals with more ACEs tend to report higher level of stress in daily life. Conversely, animal attachment is negatively associated with daily stress responses (B = -0.73, p = .011), indicating that stronger pet attachment may buffer against stress. Importantly, the interaction term between ACEs and pet attachment is (B = -0.0117, p = .012) which is significant, supporting the hypothesis that pet attachment moderates the relationship between adverse childhood experiences and daily life stress responses. Additionally, as pet attachment increases, the positive relationship between ACEs and daily life stress response decreases, this suggests a protective effect. The model explains 74% of the variance in daily stress responses (R^2 = .74), with the interaction term accounting for an additional 2.5% of the variance (ΔR^2 = .025). This finding underscores the potential mitigating role of pet attachment in the context of adverse childhood experiences and daily stress regulation.

Figure 1: Mod Graph

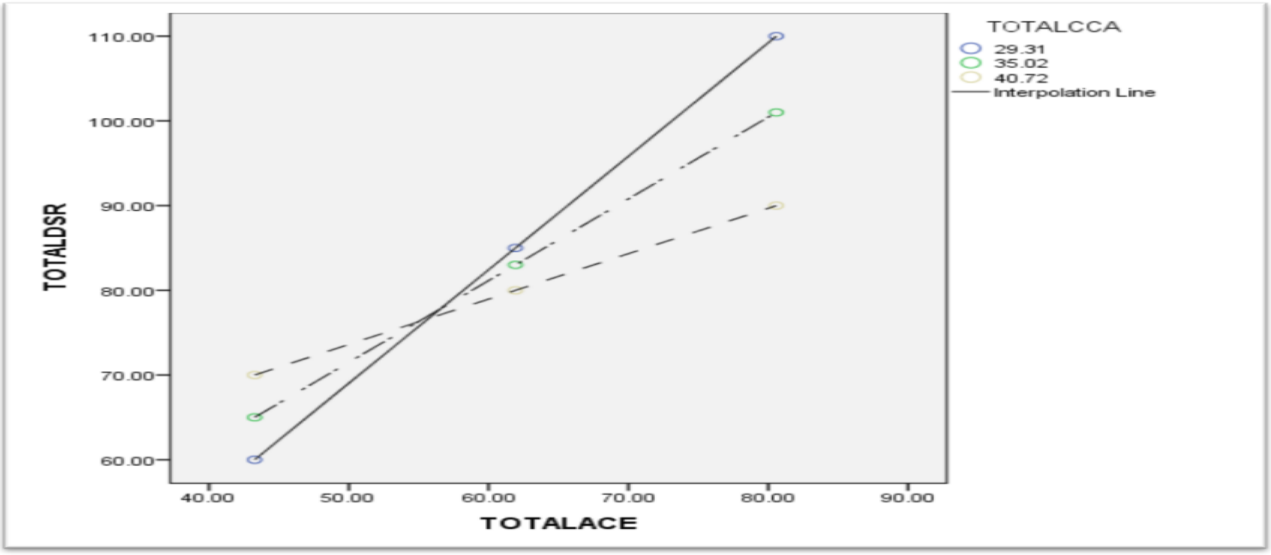


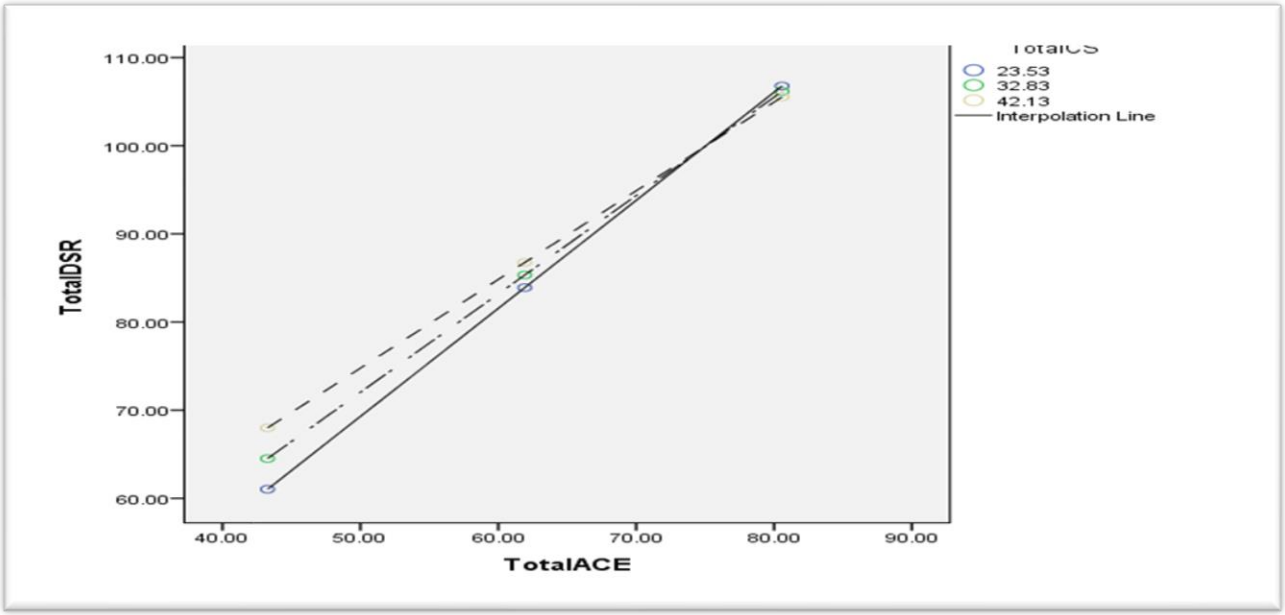
Table 6: Moderating role of Coping Strategies in relationship of adverse childhood experiences and daily life stress responses (N=130).

	Model 1		95% CI LL	UL	
Variables	**B**	**SE**	**LL**	**UL**	**P**
Constant	-12.83	11.20	-34.86	9.20	.2430
ACEs	1.503	.230	1.046	1.960	.0003
CS	.8855	.320	0.254	1.517	.0062
ACEs X CS	-.0118	.0034	-.0185	-.0051	.0012
R^2	.7466				
ΔR	.0046				

Note: ΔR^2 = Per Unit Change, B = Standard Coefficient, SE = Standard Error, Cl = Confidence Interval, LL = Lower Limit, UL = Upper Limit, p = Significance level (p<.05).

In Table 6, the moderation analysis examines the role of coping strategies (CS) in the relationship between adverse childhood experiences (ACEs) and daily life stress response which reveals several significant findings. ACEs are positively associated with daily stress responses (*B* = 1.503, *p* = .0003), which indicates that individuals with more childhood adverse experiences tend to have greater daily stress. Additionally, the coping strategies themselves are positively related to daily stress (*B* = 0.8855, *p* = .0062), suggesting that if an individual uses more coping strategies, he/she reports heightened acknowledgment or awareness of stress. The interaction between ACEs and coping strategies is significant (*B* = -0.0118, *p* = .0012), which indicates that coping strategies moderate the relationship between adverse childhood experiences and daily stress responses. Additionally, as the use of coping strategies increases, the strength of the positive association between ACEs and daily stress responses decreases, it reflects as a buffering and protective effect. The overall model explains 74.66% of the variance in daily stress responses (R^2 = .7466), with the interaction term contributing an additional 0.46% (ΔR^2 = .0046). This result highlights the importance and significance of adaptive coping in reducing the impact of adverse childhood experiences on daily stress.

Figure 2: Mod Graph



4. Discussion

The study was aimed to examine the relationship between adverse childhood experiences and daily stress responses with specific emphasis on moderating roles of pet attachment and coping strategies among pet owners. The study aimed to comprehend how adverse childhood experiences can influence daily life stress responses. Specifically, the study highlights the significance and importance of the moderating roles of pet attachment and coping strategies among pet owners. By focusing on pet owners, the research reveals on the possible effects of emotional support from pets to their owners and the role of individual coping mechanisms in managing stress in daily life. For this a sample of 130 pet owners were approached in their early adulthood, aged 20 to 37 years, through snowball sampling

technique, residing in Rawalpindi and Islamabad, Pakistan. The inclusion criteria targeted on individuals who are the primary caretakers of pets, such as dogs, cats or birds, ensuring that the participants are directly responsible for the daily care of the pets and well-being. This assured that participants have ongoing, significant relationship with their pets, which is central for the research objectives. The tables presented various statistical analyses. The results suggested the descriptive characteristics of demographic variables in terms of gender, age, socioeconomic status, pet ownership and type of pet (i.e. Dogs, cats or Birds). The findings showed the frequency and percentage of demographic variables in terms of gender, age, socioeconomic status, pet ownership and type of pet. Additionally, result suggested that the alpha reliabilities which are good, as indicated all the measures demonstrated satisfactory to excellent internal consistency. The findings revealed a notable positive correlation between adverse childhood experiences and heightened daily life stress levels, backing the Hypothesis of the study which is, higher levels of adverse childhood experiences will increase daily stress response among pet owners. The linear regression analysis additionally supports this relationship illustrating that ACEs significantly anticipate daily stress responses.

Furthermore, the results of the current study corresponds with prior research, such as the short-term longitudinal study by Karatekin (2018), demonstrated that adverse childhood experiences predict worsening mental health and stress regulation. The finding of this current study was moreover supported by this prior research, which emphasized the significant relationship between adverse childhood experiences (ACEs), stressors and psychosocial resources in shaping the well-being. It highlights that adverse childhood experiences are connected to increased stressors, emotional coping and lower emotional wellbeing (Mc Elroy & Hevey, 2014). Additionally, the aim of the study was to investigate the moderating effects of coping strategies and pet attachment, the findings revealed moderating roles of pet attachment and coping strategies which displayed that both contributors have significant, and modest moderating effects on the relationship between ACEs and daily stress responses. The results validated that the coping strategies will significantly moderate the relationship between adverse childhood experiences (ACEs) and daily stress response among pet owners. Moreover, pet attachment significantly moderates the relationship between adverse childhood experiences (ACEs) and daily stress response among pet owners is validated by the analysis. Pet attachment and coping strategies were found to protect the effect of adverse childhood experiences (ACEs), on daily stress responses. The prior research by Tang, Chen and Chou (2013) aligns with the findings of the current study, by exhibiting the psychological benefits and positive effects of pet attachment and its impact on stress regulation and overall well-being of an individual. It emphasizes that pet attachment not only offer emotional support but also enhances happiness by means of coping activities, such as mood enhancement, emotional improvement and companionship. The goal of the study and the analysis verified that ACEs are a strong predictor of stress, implying that the childhood adversities play a very significant and vital role in shaping how individuals cope with stress in their daily lives Elroy et al., (2013). This corresponds with the current literature that emphasizes the long-term adverse outcomes of childhood trauma on stress responsiveness in adulthood.

Furthermore, the moderating roles of coping strategies and coping strategies were apparent in the analysis. Both factors were found to significantly moderate the relationship between ACEs and daily stress responses. These results have supported the hypotheses of the current study. Similarly, a study supports the findings of the current study by stressing the importance of coping strategies and social support in reducing stress and mitigating psychological distress. The study focuses on fostering supportive relationships and supporting adaptive coping mechanisms to strengthen emotional adaptability and stress regulation (Akbar & Aisyawati, 2021). Together all these findings highlighted the importance of both coping strategies and pet attachment in mitigating the effects of childhood hardships. While the buffering effects, provides meaningful insight into the potential interventions that can improve the stress resilience among the individuals with a history of adverse childhood experiences. The findings of this prior study supplement the current research by demonstrating the role of coping capacity as a factor in lowering and mitigating the perceived stress among individuals with adverse childhood experiences (Gissandaner et al., 2022).

4.1. Limitations and Suggestions

1. The dependence on self-report measures is a constraint of the study participants may have exaggerated or under reported their adverse childhood experiences, which might affect the precision of the data. Future studies can use substitute data collection methods like interviews, to complement the self-reported information.
2. One limitation of the study is cross-sectional design, as it limits the prolonged effects and directionality of adverse childhood experiences on stress regulation, since the data was gathered at a single point in time. Longitudinal studies can be helpful in providing more detailed and comprehensive insights into these variables over time.
3. The study focused on coping strategies generally, which may fail to reflect the specific coping strategies individuals use. Multiple types of coping strategies, such as emotion-focused coping, solution-focused coping, problem-focused coping and social support seeking, which could have differing effects on stress responses. Future research can examine which coping strategies can be more efficient for individuals with background of adverse childhood experiences.
4. Despite the results of the study suggests that both coping strategies and pet attachment can moderate the effects of ACEs, further researches on these variables can provide in depth information and findings which can be integrated into therapeutic interventions. It would be beneficial to establish the specific types of coping strategies and pets, which can be effective for individuals with ACEs, and how these interventions can be encouraged and tailored to meet the requirements of different populations.

5. Conclusion

The study intended to explore the relationship adverse childhood experiences and daily stress responses, with a specific focus on the moderating roles of pet attachment and coping strategies among pet owners. The results verifies that the adverse childhood experiences significantly influence the effect of daily stress responses, which suggests that individuals who have adverse early life experiences, may be more susceptible to intensified stress in their adulthood. This brings attention to the lasting effect of childhood experiences and trauma on stress sensitivity in adulthood. Additionally the study found that both coping strategies and pet attachment serve as effective and important moderators in this relationship. Specifically, the emotional support which is obtained from the pets and the use of adaptive coping strategies were found to buffer the adverse and negative effects of ACEs on daily stress responses. The study's findings support in understanding the significance of external factors, such as pets and coping strategies can have an effect on stress management and regulation in adults with a history of adverse childhood experiences. The findings suggested that promoting a deeper connection with companion animals could play an important and vital role in mitigating stress for individuals endured adverse experiences from formative years. These findings have applicable implications and can be impactful for interventions targeted to enhance stress resilience among individuals who have experienced ACEs. These interventions can include strengthening pet attachment and together with training individuals to adjust effective coping techniques.

References

Akbar, Z., & Aisyawati, M. S. (2021). Coping Strategy, Social Support, and Psychological Distress Among University Students in Jakarta, Indonesia During the COVID-19 Pandemic. *Frontiers in Psychology*, *12*, 694122. https://doi.org/10.3389/fpsyg.2021.694122

Amiot, C. E., Gagné, C., & Bastian, B. (2022). Pet ownership and psychological well-being during the COVID-19 pandemic. *Scientific Reports*, *12*(1), 6091. https://doi.org/10.1038/s41598-022-10019-z

Belsky, J. (1980). Child maltreatment: An ecological integration. *American Psychologist*, *35*(4), 320-335. https://doi.org/10.1037/0003-066X.35.4.320

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, *32*(7), 513-531. https://doi.org/10.1037/0003-066X.32.7.513

Debowska, A., Horeczy, B., Boduszek, D., Dolinski, D., & Von Bastian, C. C. (2022). Development and validation of a stress response measure: the Daily Stress Response Scale (DSRS). *Health Psychology Report*, *10*(3), 238-248. https://doi.org/10.5114/hpr.2022.116812

Edwards, R. (2024, February 3). What is General adaptation Syndrome (GAS)? Verywell Health. https://www.verywellhealth.com/general-adaptation-syndrome-overview-5198270

Faner, J. M. V., Dalangin, E. A. R., De Leon, L. A. T. C., Francisco, L. D., Sahagun, Y. O., & Acoba, E. F. (2024). Pet attachment and prosocial attitude toward humans: the mediating role of empathy to animals. *Frontiers in Psychology*, *15*, 1391606. https://doi.org/10.3389/fpsyg.2024.1391606

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. *American Journal of Preventive Medicine*, *14*(4), 245-258. https://doi.org/10.1016/S0749-3797(98)00017-8

Giano, Z., Wheeler, D. L., & Hubach, R. D. (2020). The frequencies and disparities of adverse childhood experiences in the U.S. *BMC Public Health*, *20*(1), 1327. https://doi.org/10.1186/s12889-020-09411-z

Gissandaner, T. D., Gette, J. A., Schmidt, A. T., & Littlefield, A. K. (2022). Mitigating the Relation Between Adverse Childhood Experiences and Perceived Stress: The Role of Resilience. *Adversity and Resilience Science*, *3*(1), 53-63. https://doi.org/10.1007/s42844-022-00057-x

Hamby, S., Grych, J., & Banyard, V. (2015). Life Paths measurement packet: Finalized scales. *Life Paths Research Program*.

Hardie, S., Mai, D. L., & Howell, T. J. (2023). Social Support and Wellbeing in Cat and Dog Owners, and the Moderating Influence of Pet–Owner Relationship Quality. *Anthrozoös*, *36*(5), 891-907. https://doi.org/10.1080/08927936.2023.2182029

Jones, C. M., Merrick, M. T., & Houry, D. E. (2020). Identifying and Preventing Adverse Childhood Experiences: Implications for Clinical Practice. *JAMA*, *323*(1), 25. https://doi.org/10.1001/jama.2019.18499

Kalmakis, K. A., & Chandler, G. E. (2014). Adverse childhood experiences: towards a clear conceptual meaning. *Journal of advanced nursing*, *70*(7), 1489-1501.

Karatekin, C. (2018). Adverse Childhood Experiences (ACEs), Stress and Mental Health in College Students. *Stress and Health*, *34*(1), 36-45. https://doi.org/10.1002/smi.2761

Mc Elroy, S., & Hevey, D. (2014). Relationship between adverse early experiences, stressors, psychosocial resources and wellbeing. *Child Abuse & Neglect*, *38*(1), 65-75. https://doi.org/https://doi.org/10.1016/j.chiabu.2013.07.017

MSEd, K. C. (2024, June 17). What is the Fight-or-Flight response? Verywell Mind. https://www.verywellmind.com/what-is-the-fight-or-flight-response-2795194#:~:text=In%20the%201920s%2C%20American%20physiologist,to%20deal%20with%20threatening%20circumstances

Sahler, O. J. Z., & Carr, J. E. (2009). COPING STRATEGIES. In *Developmental-Behavioral Pediatrics* (pp. 491-496). Elsevier.

Sarkar, S., Ghosh, S., & Bose, N. (2022). Psychological wellbeing, perceived stress, coping strategy of the Bengali young adult pet owners. *The International Journal of Indian Psychology*, *10*(4), 1596-1603.

Stress. (2022, June 17). https://who.int//news-room/questions-and-answers/item/stress/?gad_source=1&gclid=CjwKCAjwpbi4BhByEiwAMC8JnQLwEevzoUxfksTaPTZNng388aaaauNmcr5x23c0aYjsL3hwQypiQBoCjsEQAvD_BwE

Tang, T.-W., Chen, C.-C., & Chou, J.-C. (2013, 07/2013). Understanding Pet Attachment and Happiness Linkages: The Mediating Role of Leisure Coping. 2013 7th International Conference on Complex, Intelligent, and Software Intensive Systems (CISIS),

Zasloff, R. L. (1996). Measuring attachment to companion animals: a dog is not a cat is not a bird. *Applied Animal Behaviour Science*, *47*(1-2), 43-48. https://doi.org/10.1016/0168-1591(95)01009-2