

Attachment Style as Mediator between Adverse Childhood Experiences (ACEs) and Psychological Distress

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ABSTRACT

Adverse childhood experiences are strongly related to a variety of adverse psychological results in adulthood, embracing heightened psychological distress. This research aimed to examine the connection between adverse childhood experiences (ACEs) and psychological distress in the context of adult attachment patterns, especially avoidant, anxious, and secure attachment. It was hypothesized that H1., a) There will be relationship between ACEs and psychological distress, H2, b) there will be relationship between attachment styles (secure, anxious, avoidant) and psychological distress, and H3, c) Attachment styles (secure, anxious, avoidant) will mediate the link between ACEs and psychological distress in adults. 400 participants, ages 18 to 35, were selected for this study using convenience sampling from Multan's urban and rural populations. A cross-sectional approach was used to evaluate Adverse childhood experiences attachment styles, and psychological distress among adult participants using standardized self-report questionnaires. For statistical analysis Pearson coefficient of correlation and Mediation analyses were conducted. The findings show that ACEs are adversely related with relationship satisfaction and positively related with psychological distress. The findings further showed that ACEs had a significant positive association with psychological distress, and attachment styles (secure, anxious, avoidant) were also significantly associated to distress. However, mediation identifying revealed that none of the attachment styles significantly explained the link between ACEs and psychological distress.

Keywords: Attachment Styles, Adverse Childhood Experiences, Psychological Distress, adult mental health

INTRODUCTION

Adverse adolescence studies consisting of the extraordinary shape are extensively identified as large determinants of lifelong intellectual fitness outcome (Felitti et al., 1998). Adverse formative years studies has been always connected to heightened to a number of mental misery (Hughes et al., 2017; Merrick et al., 2017). The cumulative strain of such early adversities can disrupt emotional law and social functioning, developing enduring styles of misery that persist into adulthood (McLaughlin et al., 2010). However, the mechanisms via which ACEs exert those long-time period outcomes stay a key attention of present day mental research. Originally proposed through Bowlby (1969) after which delicate through Ainsworth (1978), attachment patterns provide an explanation for how human beings with emotional ties behave in interpersonal interactions. Childhood interactions with cares form attachment styles, which in flip have an effect on how humans emotionally bond to 1 another. Unlike insecure styles, which often bring about mental pain, solid bonds sell consider and emotional law. These patterns have the cappotential to slight the hyperlink among some of impartial outcomes, consisting of interpersonal

competence and emotional flexibility (Mikulincer & Shaver, 2007). The affiliation among attachment lack of confidence and negative emotional adjustment turned into proven with the aid of using Mikulincer and Shaver (2007), indicating that it performs a mediating feature in mental well-being. Each of those styles impacts the dynamics of relationships at some stage in life, and all of them occur otherwise in early life (Cleveland Clinic, 2022).

Attachment Style vs Adverse Childhood Experiences

Disrupted care-giving relationships hinder the building of secure attachments, and research shows an important connection between ACEs and insecure attachment patterns. While ACEs often sell insecure styles like hectic attachment, that is marked via way of means of a worry of abandonment, or avoidant attachment, described through emotional detachment. steady attachment develops with ordinary emotional support. According to studies conducted in western settings, such as Thompson et al. (2022), those who score higher on ACEs are much more probable to have insecure attachment patterns. Research in Pakistan is still lacking, nevertheless. A distinct setting that merits investigation is created by cultural norms that emphasize collectivism and the extended family structure, which may moderate the consequences of childhood trauma (ACEs) on attachment style. The public health significance of ACEs lies not only in their high prevalence but also in their capacity to disrupt normative developmental processes. Global estimates suggest that about 50% of the population has experienced the one ACEs at least with a substantial proportion experiencing multiple adversities (Merrick et al., 2018). These experiences exert both immediate and long-term effects, influencing neurobiological development, stress regulation systems, emotional functioning, and social relationships (Shonkoff et al., 2012; Teicher & Samson, 2016).

Mediating Role of Attachment Style

The impact of attachment fashion in explaining the hyperlink among courting pride and detrimental formative years experiences (ACEs) has been very well investigated. Those with anxious attachment styles often exhibit higher emotional reliance and vulnerability to rejection, which can lead to relationship instability and suffering (Shaver & Mikulincer 2007). Conversely, those who are avoidantly attached show signs of emotional detachment and a dread of intimacy, which hinders communication in interpersonal interactions (Collins & Feeney 2004).Independent of geography, empirical data from cross-cultural studies demonstrates that insecure attachment patterns are a universal predictor of increased psychological discomfort and lower relationship quality (Li & Chan, 2012). According to studies from Scandinavia, early intervention programs can help develop stable attachment, even in the face of childhood trauma, by implementing focused therapy treatments (Roisman et al., 2002).

Collectivist societies emphasize familial bonds social harmony and interdependence which can uniquely shape the experiences of adverse childhood experience (ACEs) and attachment styles. For example studies conducted in Pakistan reveal that traditional family structures and societal norms significantly influence attachment behavior's and relational dynamics(Ahmad et al., 2023). Studies have indicated that attachment styles have an influencing role in the association Spanning psychological outcomes and ACEs. Peoples who have experiences ACEs frequently develop insecure attachment patterns that are characterized by avoidance or worry. This makes them more susceptible to psychological discomfort, including anxiety and depression (Chen & Luo 2021). Because insecure attachment encourages maladaptive marital behaviors including poor communication and increased conflict, it has also been associated to decrease relationship satisfaction (Lee et al., 2023).) The importance of investigating attachment type as a mechanism via which adverse childhood experiences influence adult well-being is highlighted by these findings. The necessity to study these processes in collectivist societies like Pakistan

is becoming more widely acknowledged, even if the majority of the research that is currently available comes from western contexts.

People with insecure attachment styles reported more conflicts, more emotional distance, and worse relationship satisfaction in romantic partnerships, according to research by Simpson and Rholes (1998). Their research highlighted how attachment insecurity, which has its roots in early childhood trauma, causes maladaptive interpersonal behavior's including intimacy anxiety and trouble trusting others. (Davila et al., 1999) further explored the connection between attachment styles and relationship quality, revealing that anxious attachment was associated with dissatisfaction. (Karreman & Vingerhoets 2012) discover that the attachment insecurity mediated the relationship between ACEs and adult romantic relationships with insecurely attached individuals reporting more relational difficulties and lower satisfaction.

Psychological Distress & Adverse Childhood Experiences

Psychological distress is a broad construct encompassing symptoms of depression, anxiety, and emotional dysregulation. Numerous researches have established effected connection between ACE exposure and elevated distress in adulthood (Anda et al., 2006; McLaughlin et al., 2010). For example, McLaughlin et al. (2010) found that childhood adversities significantly predicted the severity and duration of mental illness over time. The link between ACEs and psychological distress is understood to arise from multiple pathways, including altered stress-response systems (e.g., dysregulation of the hypothalamic–pituitary–adrenal axis), maladaptive defense mechanism , and disruptions in social support networks (Heim et al., 2008; Danese & McEwen, 2012). However, the relationship between ACEs and distress is not uniform. Not all individuals with high ACE exposure develop significant psychological problems. This variability suggests that mediating and moderating mechanisms are crucial in deciding the results of mental health (Masten & Cicchetti, 2016). One such mechanism, rooted in developmental and relational theories, *is* attachment style.

Researches suggest that stress can negatively impact marital satisfaction and longevity several theoretical models help explain how stress can negatively help explain how stress affect couples. The family stress models (Hill, 1995; McCubbin & Patterson 1983) describe how the families adapt to stress, while couples , stress model (karney, Story & Bradbury, 2005; Bodenmann, 1995, 2005) focus on how stress influences interactions between partners stress can come from different sources such as internal vs external factors or major versus minor life events and it can be either short-term(acute) or long-lasting (chronic). Research on stress in relationships provides useful insights for therapy and counselling, helping couples develop better coping strategies. This review explores different stress models categorize types of stress and summarizes key findings that can be applied in clinical settings. Future studies should continue to explore ways to help couples manage stress effectively and improve relationship quality. These adverse experiences disrupt neurodevelopment leading to highlight the stress responses, immune dysfunction and maladaptive coping mechanisms that persist into adulthood (Shonkoff et al.,2012; Teicher &Samson, 2016). Additionally ACEs have been linked to difficulties in forming relationships, maintaining employment and overall life satisfaction (Metzler et al.,2017). Traditionally healthcare systems have focused on individual risk behaviours, but growing evidence supports a trauma -informed strategies that replace the focus from “what’s problem with you?” “to what’s are you doing?” (SAMHSA 2014). This paradigm shift underscores the need for early interventions and supportive policies to mitigate the lifelong effect of childhood trauma and improve overall well-being (Merrick et al.,2017).

There is research gap as past studies have not explored this phenomenon i.e. mediatory role of attachment styles in relationship between ACEs and psychological distress in adults particularly in Pakistani context so this study will extend and add scientific evidence in existing knowledge. This study focuse to

investigate the attachment styles as mediator between adverse childhood experiences and psychological distress in adults.

Hypotheses

Following hypothesis were formulated for the study in consistence with the literature review.

H1: There will be relationship between ACEs and psychological distress ,

H2 There will be relationship between attachment styles (secure, anxious, avoidant) and psychological distress.

H3: Attachment styles (secure, anxious, avoidant) will mediate the association between adverse childhood experiences (ACEs) and psychological distress in adults.

Material and method

Research design : In the present study, cross sectional research design was used.

Participants

For this study total 400 adults of age range 18 to 35, from both genders were selected from urban and rural area of Multan. Convenience sampling was use to collect data from community population.

Instruments

This study utilized the following instrument:

A **consent form** is document that informs participant about research purpose, procedures and their role in the study. The form also explains data confidentiality, potential risks and benefits. Participant sign it to confirm their understanding and agreement to take part. A demographic information was from employed to collect information on participants' age and gender, socioeconomic status, education and marital status . Childhood Adversity Assessment Tool(Felitti.et al. 1998)

The **adverse childhood experiences Questionnaire** evaluates how different forms of childhood adversity influence long-term health and psychological well-being. It consist of 10 questions each addressing different forms of childhood adversity encountered childhood to age 18. Validity data have shown strong Correlation between ACE scores and various negative outcomes healthy outcomes. The ACE questionnaire demonstrates strong reliability, with Cronbach's alpha frequently surpassing 0.70, indicating good internal consistency.

Adult attachment scale measure individual differences in Attachment patterns. the scale comprises 18 statements, each evaluated using a 5-point Likert scale ranging three subscale Each subscale exhibits good internal consistency, as indicated by Cronbach's alpha values that typically exceed 0.80.

The **Kessler Psychological Distress Scale** is a commonly used tool designed to evaluate psychological distress through symptoms of distress experienced in past four weeks. It consists of 10 questions each score on a 5-point Likert scale ranging from 1(non of the time) to 5(All of the time)Scores on the scale range from 10 to 50, where higher values represent increased psychological distress. A score of 10–19 denotes low distress, 20–24 implies mild distress, 25–29 indicates moderate distress, and 30–50 corresponds to severe levels of distress, potentially indicating a serious mental health condition.

Procedure

The authors were asked in writing for permission to use their scale in this study. Participants received an informed consent form, to give consent for participation. They were be given the demographic questionnaire to fill out. then Participants first filled out the Adverse Childhood Experience Scale (Felitti et al., 1998), followed by the Adult Attachment Scale (Collins & Read ,1990) , and Kessler Psychological Distress (Kessler, R.C. et al, 2002) to assess their psychological distress levels. During form administration all participants had an opportunity to ask questions if they need clarification. ethical consideration (IRB) was will be secured from the appropriate institutional review board before data collection begins,

RESULTS

Research data was analyzed using SPSS version 21. To assess the relationship between adverse childhood experiences and psychological distress, Pearson correlation was used to measure the mediating role of adult attachment styles (secure, anxious, and avoidant) between adverse childhood experiences and psychological distress.

Table 1 *Frequencies and percentages of demographic variables of study (N=400)*

<i>Variable</i>	<i>Category</i>	<i>F</i>	<i>%</i>
Age	18-22	47	11.8
	23-26	213	53.3
	27-30	140	35.0
Gender	Male	172	43.0
	Female	227	56.8
Residential Area	Urban	252	63.0
	Rural	145	36.3
Socio-economic Status	Lower	92	23.0
	Middle	285	71.3
	Upper	23	5.8
Marital Status	Married	257	64.3
	Committed	142	35.5
	Single	1	.3

Note: f = Frequency, % = Percentage,

Table 1 shows frequency and percentage of the variables like gender, education, family system, residence, marital status of adults. The sample comprised of 172 males (43%) and 227 females (56%). 63% students had residence of Urban and 36% had residence of Rural. Keeping in view the marital status, 64% were Married, 35% were Committed and 3% were Single.

Table 2

Psychometric properties of the study Variables/Scales (N=400)

Variables	N	A	M (SD)	Range		Skewness	Kurtosis
				Potential	Actual		
ACE	10	.95	15.3 (2.3)	11-31	0-50	1.36	2.95
Secure	6	.94	.21 (4.3)	7-28	1-30	.12	-.70
Anxious	6	.74	.25 (5.1)	7-57	1-36	.10	-.65
Avoidant	6	.87	.23 (4.7)	7-30	1-36	.30	-.49
Psychological Distress	10	.64	.36 (7.2)	13-44	10-50	1.49	-.45

ACE= Adverse Childhood Experiences, n= number of items, A= Cronbach's reliability, M= mean, SD= standard Deviation,

Table 2 shows the psychometric properties of the scale. The adverse childhood Experiences (ACEs) scale contained 10 item and demonstrated satisfactory reliability with Cronbach's alpha of $\alpha = 0.95$, the participant scored (M=15.3 and SD= 2.3) on average. value of Adult Attachment Styles factor includes Secure ($\alpha = .94$), with mean score of 0.21, SD= 4.3, the actual score ranged from 7 to 28, the distribution is approximately normal with skewness 0.12 and Kurtosis (-0.70). Anxious ($\alpha = .74$), with a mean of 0.25 (SD = 5.1), the distribution is normal (skewness = 0.10; kurtosis = -0.65). Avoidant attachment has good reliability ($\alpha = .87$) a mean of 0.23, SD = 4.7 and score ranging from 7 to 30 within the potential range of 1 to 36. The distribution is slightly positively skewness 0.30 and slightly kurtosis is -0.49, and Psychological Distress also demonstrated moderate reliability ($\alpha = .64$), with a mean of 0.36, SD = 7.2, this variable shows a strong positive skewness (1.49) and moderate kurtosis is (-0.45). which shows high internal consistency.

Alpha reliability values of scales lies between .64 to .95 which falls in acceptable range. moreover, skewness values lies between .10 and 1.49 which suggest that data is slightly positively skewed however this is very slight. Nevertheless, with an adequately large sample size (N=400), the effect of this deviation is negligible in parametric test, as evidenced by the Central Limit Theorem (Field, 2018). Previous research assures that small deviations from normality do not have much influence on the validity of parametric analysis in large samples (Ghasemi & Zahediasl, 2012).

Table 3

Pearson Correlation coefficient among study variables (N=400)

Variable		1	2	3	4	5
1	ACE	1	-.012	.007	.015	.203**
2	AAS,	-----	1	.802**	.785**	-.021

	Secure				
3	Anxious	-----	1	.775**	-.002
4	Avoidant		-----	1	-.010
5	PD				1

ACE= Adverse childhood Experience,, AAS=adult attachment scale, PD= psychological Distress. Note:
 * $p < .05$, ** $p < .01$

Table 3:. similarly, adverse childhood experiences is positively related with psychological distress ($r = .203^{**}$, $p < .05$).

Further, ACE has a non-significant correlation with Adult Attachment Styles (Secure, Anxious, Avoidant). while a significant negative weak correlation with Psychological Distress.

Table 4

The mediating effect of secure Attachment Style in the Relationship between Adverse Childhood Experiences and Psychological Distress.

Variables	B	SE	T	P	95% CL	
					LL	UL
ACE→ PD	-.60	.15	-4.00	.000	-1.18	-.14
ACE→Sc	-.61	.14	-4.12	.000	-1.16	-.13
ACE→Sc→ PD	-.31	.08	-3.93	.000	-.47	-.15
<i>Effect</i>	<i>B</i>	<i>SE</i>	<i>T</i>	<i>P</i>	<i>LL</i>	<i>UL</i>
Direct Effect	-.61	.14	-4.12	.000	-.90	-.30
Indirect Effect	.006	.03			-.05	.06
Total Effect	-.60	.15	-4.00	.000	-.90	-.32

Note: B = Unstandardized coefficient, SE = standard error, β = Standardized coefficient; t = t -statistic; p = p -value; LLCI = Lower limit of the confidence interval; ULCI = Upper limit of the confidence interval, ACEs=adverse childhood experiences, SC=secure attachment, PD= psychological distress.

Table shows the secure attachment styles in the relationship between adverse childhood experiences and Psychological Distress.

The total effect of adverse childhood experiences ACEs on psychological distress was significant ($B = -0.60$, $SE = 0.15$, $t = -4.00$, $p = .000$, 95% CI [-0.90, -0.32]), indicating that the higher adverse childhood experiences (ACEs) were associated with increased psychological distress, when secure attachment was included as a mediator, the direct effect of ACEs on psychological distress remained significant ($B = -0.61$, $SE = 0.14$, $t = -4.12$, $p = .000$, 95% CI [-0.90, -0.30]), suggesting that ACEs influence psychological distress independently of secure attachment. ACEs were also found to significantly predict negative secure attachment ($\beta = -0.61$, $SE = 0.14$, $t = -4.12$, $p = .000$), and secure attachment was significantly associated with negative psychological distress ($\beta = -0.31$, $SE = 0.08$, $t = -3.93$, $p = .000$), however the indirect effect of adverse childhood experiences ACEs on psychological distress through secure

attachment was not significant ($B = 0.006$, $SE = 0.03$, 95% $CI [-0.05, 0.06]$) as the confidence interval included zero. This indicates that although secure attachment is negatively impacted by ACEs and associated with negative effect of psychological distress, it does not significantly mediate the relationship between ACEs and psychological distress

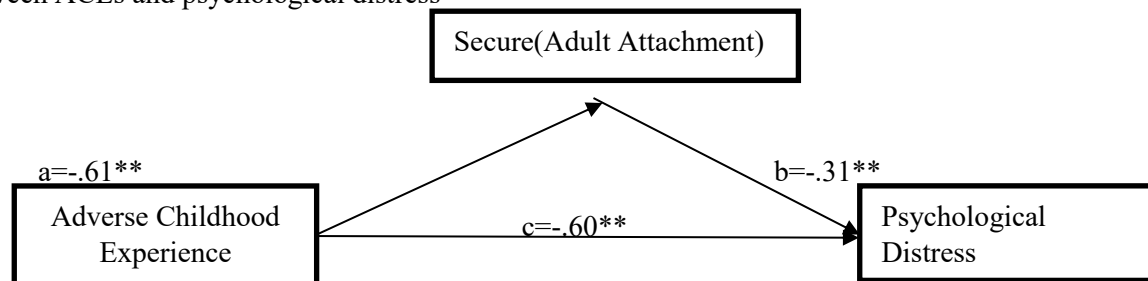


Figure 1. The mediation is further explained through the graphical representation.

Table 4.2

The mediating effect of Anxious (Adult Attachment Style) in the Relationship of Adverse Childhood Experiences and Psychological Distress.

Variables	B	SE	T	P	95% CL	
					LL	UL
ACE→PD	-.60	.15	-4.00	.000	-1.18	-.14
ACE→ Ax	-.62	.15	-4.12	.000	-1.16	-.13
ACE→Ax→PD	-.22	.07	-2.93	.000	-.34	-.07
<i>Effect</i>	B	SE	T	P	LL	UL
Direct Effect	-.60	.14	-4.05	.000	-.89	-.31
Indirect Effect	.0001	.02			-.06	.05
Total Effect	-.60	.15	-4.00	.000	-.90	-.30

Note: B = Unstandardized coefficient, SE = standard error, β = Standardized coefficient; t = t -statistic; p = p -value; $LLCI$ = Lower limit of the confidence interval; $ULCI$ = Upper limit of the confidence interval, PD =psychological distress, Ax =anxious attachment, PD =psychological distress,

This table show the results of a mediation analysis examining the relationship between ACEs and psychological distress, with anxious attachment as potential m. The total effect of ACEs on psychological distress was significant ($B = -0.60$, $SE = 0.15$, $t = -4.00$, $p = .000$, 95% $CI [-0.90, -0.30]$), indicating that higher adverse childhood experiences were associated with increased psychological distress. When the anxious attachment was included as a mediator, the direct effect of ACEs on psychological distress remained significant ($B = -0.60$, $SE = 0.14$, $t = -4.05$, $p = .000$, 95% $CI [-0.89, -0.31]$), suggesting that ACEs had a strong negative impact on psychological distress independent of anxious attachment. Additionally, ACEs significantly predicted higher levels of anxious attachment ($\beta = -0.62$, $SE = 0.15$, $t = -4.12$, $p = .000$), and anxious attachment significantly predicted greater psychological ($\beta = -0.22$, $SE = 0.07$, $t = -2.93$, $p = .000$), the indirect effect of ACEs on psychological distress through anxious attachment was not statistically significant ($B = 0.0001$, $SE = 0.02$, 95% $CI [-0.06, 0.05]$). The total effect of ACEs on

psychological distress was significant ($B = -.60, SE = .15, t = -4.00, p = .000, 95\% CI [-.90, -.30]$), indicate that higher levels of ACEs were associated with lower levels of psychological distress. The direct effect of ACEs on psychological Distress remained significant and identical to the total effect ($B = -.60, SE = 0.14, t = -4.05, p = .000, 95\% CI [-.89, -.31]$). However, the indirect effect of adverse childhood experiences ACEs on psychological distress through anxious attachment was not significant ($B = -.0001, SE = .02, 95\% CI [-.06, .05]$), as the confidence interval included zero.

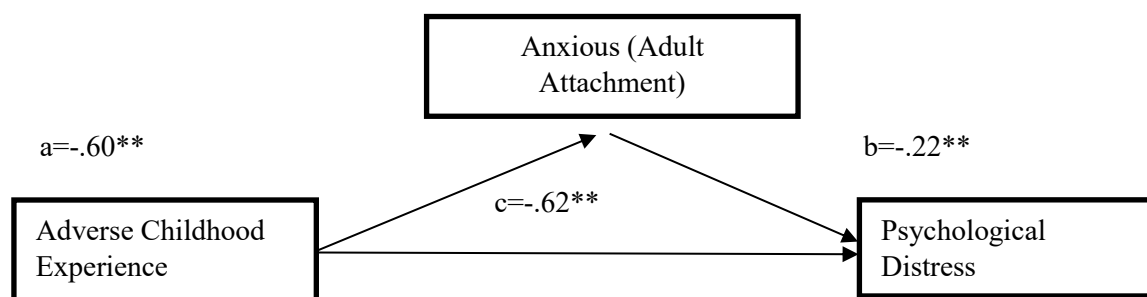


Figure 2. The mediation is further explained through the graphical representation.

Table 4.3

The mediating analysis of the effect of ACEs on psychological distress through Avoidant attachment.

Variables	B	SE	T	P	95% CL	
					LL	UL
ACE→ PD	-.60	.15	-4.00	.000	-1.18	-.14
ACE→ Av	-.60	.14	-4.05	.000	-1.19	-3.47
ACE→ Av → PD	-.22	.07	-3.06	.002	-.37	-.15
<i>Effect</i>	B	SE	T	P	LL	UL
Direct Effect	-.60	.14	-4.05	.000	-.90	-.31
Indirect Effect	-.001	.02			-.04	.04
Total Effect	-.60	.14	-4.05	.000	-.90	-.30

Note: B = Unstandardized coefficient, SE = standard error, β = Standardized coefficient; t = t -statistic; p = p -value; LLCI = Lower limit of the confidence interval; ULCI = Upper limit of the confidence interval, ACE=adverse childhood experiences, AV=avoidant attachment, PD=psychological distress,

The table illustrate the results of mediation analysis assessing whether avoidant attachment mediates the relationship between ACEs and psychological distress.

The total effect of ACEs on psychological distress was significant ($B = -.60, SE = 0.14, t = -4.05, p = .000, 95\% CI [-0.90, -0.30]$), indicating that individual with higher levels of ACEs significantly psychological distress. When avoidant attachment was included as a mediator. The direct effect of ACEs on psychological distress significant ($B = -.60, SE = 0.14, t = -4.05, p = .000, 95\% CI [-0.90, -0.31]$),

showing that ACEs predict psychological distress of avoidant attachment. ACEs were also significantly associated with higher avoidant attachment ($\beta = -0.60$, $SE = 0.14$, $t = -4.05$, $p = .000$, 95% $CI [-1.19, -3.47]$), and avoidant attachment was significantly related to high psychological distress ($\beta = -0.22$, $SE = 0.07$, $t = -3.06$, $p = .002$). However, the indirect effect of ACEs on psychological distress via avoidant attachment was not significant ($B = -0.001$, $SE = 0.02$, 95% $CI [-0.04, 0.04]$), as the confidence interval includes zero. This indicates that although ACEs influence avoidant attachment and avoidant attachment is linked to psychological distress, the mediating role of avoidant attachment in the relationship between ACEs and psychological distress is not statistically significant.

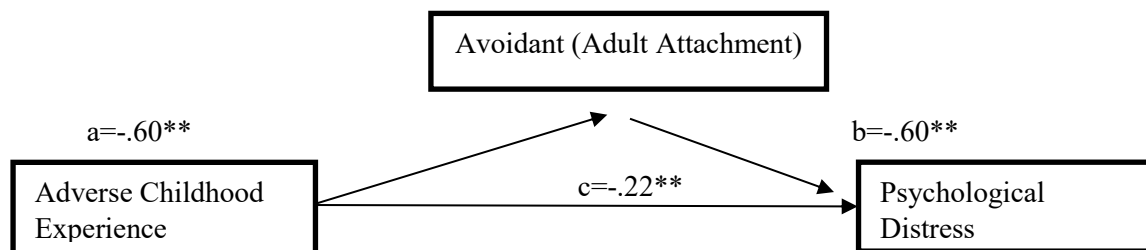


Figure 3. The mediation is further explained through the graphical representation.

Table 5

Group Comparison of ACE, Psychological Distress across Category (N = 400)

Variables	Adverse Childhood Experiences Categories			
	Low		High	
	(low)N	M (SD)	M (SD)	(High)N
ACE	272	3.41(1.5)	6.63(.79)	128
PD	317	22.7(4.4)	34.3(3.7)	89

Note. M = mean; SD = standard deviation; $p < .05$ *AEC=Adverse Childhood Experience, PD=Psychological Distress

Table 7 presents the mean differences across categories for study variables. Among the 400 participants, 272 were categorized as having low ACE scores (mean = 3.41, SD = 1.5), while 128 had high ACE scores (mean = 6.63, SD = 0.79). In terms of psychological distress, 311 individuals fell into the low PD group (mean = 22.7, SD = 4.4), and only 89 were in the high PD group (mean = 34.3, SD = 3.7). The data suggests that individuals with higher ACE scores tend to report significantly higher levels of psychological distress, highlighting a potential link between childhood adversity and adult mental health challenges.

DISCUSSION

The study explores the intricate association between adverse childhood experiences and attachment patterns and psychological distress within the community population. As adverse childhood experiences tend to have an influence on the psychological distress and relationship dissatisfaction in individuals . in correlation analysis and hypothesis testing the statistical analysis reveals that our first hypothesis (H1), a)

There will be relationship between adverse childhood experiences and psychological distress is verified. Higher ACE scores were linked to higher psychological distress levels. This finding is consistent with previous literature indicating that exposure to early-life adversity is a robust risk factor for later psychological distress, including depression, anxiety, and other forms of emotional dysregulation (Felitti et al., 1998; Hughes et al., 2017; Merrick et al., 2019).

Results suggest that our second hypothesis i.e. b) there will be relationship between attachment styles (secure, anxious, avoidant) and psychological distress Is not verified To test H3 i.e. Attachment styles (secure, anxious, avoidant) will mediate the association between adverse childhood experiences (ACEs) and psychological distress in adults mediation analysis was conducted. It revealed that none of the three attachment styles—secure, anxious, or avoidant—significantly mediated the relationship between ACEs and psychological distress. hence our hypothesis 3 is not verified.

Although ACEs significantly predicted lower secure attachment and higher anxious attachment, and both insecure styles were associated with higher distress, the indirect effects for all three attachment styles were not statistically significant, as the confidence intervals included zero. This suggests that while attachment styles are related to both ACEs and psychological distress, they do not statistically explain the link between the two. The significant association between ACEs and psychological distress found in this study aligns with the extensive evidence base demonstrating that early adversity increases the likelihood of long-term psychological challenges (Bellis et al., 2014; Merrick et al., 2019). The negative beta values here may reflect an inverse scoring direction, yet the statistical significance and confidence intervals confirm the robustness of the relationship. The significant associations between insecure attachment (anxious, avoidant) and psychological distress also replicate earlier work indicating that insecurely attached individuals have poorer coping resources and heightened sensitivity to interpersonal stress (Mikulincer & Shaver, 2016; Riggs & Kaminski, 2010). Conversely, secure attachment's negative correlation with distress supports its protective role, potentially due to enhanced emotion regulation and perceived social support (Karreman & Vingerhoets, 2012).

However, the lack of significant mediation contrasts with theoretical expectations derived from attachment theory (Bowlby, 1988) and prior empirical evidence suggesting that attachment styles can function as pathways linking childhood adversity to adult mental health (Cooke et al., 2019; Murphy et al., 2018). One explanation for the null mediation may be the relatively high internal consistency of measures combined with restricted variance in attachment scores, limiting their explanatory power in the model. Additionally, other mechanisms—such as emotion regulation deficits, maladaptive coping, or neurobiological alterations—may play a stronger mediating role between ACEs and distress (Anda et al., 2006; McLaughlin et al., 2010).

The current findings that ACEs are directly associated with psychological distress echo the results of Felitti et al. (1998), who demonstrated a graded relationship between ACE scores and a range of mental health outcomes. Similar patterns were observed by Hughes et al. (2017) in a meta-analysis, reinforcing the robustness of this link. The observed associations between insecure attachment styles and higher distress are consistent with earlier work by Riggs and Kaminski (2010) and Karreman and Vingerhoets (2012), who found that anxious and avoidant styles are associated with greater emotional vulnerability. However, the absence of a significant mediation effect diverges from studies such as Cooke et al. (2019) and Murphy et al. (2018), which identified partial mediation by attachment. These differences may be attributable to sample characteristics, cultural context, or measurement differences.

CONCLUSION

The present study examined the relationships between adverse childhood experiences (ACEs), adult attachment styles, and psychological distress, and explored whether attachment styles mediate the ACE–distress association. Results showed that ACEs were significantly associated with higher psychological

distress, and that attachment styles (secure, anxious, and avoidant) were not significantly related to distress. However, none of the attachment styles significantly mediated the relationship between ACEs and psychological distress. These findings contribute to the understanding of the long-term effects of childhood adversity, highlighting the persistent influence of ACEs on mental health in adulthood.

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