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Original Research Article

Relationship Assessment Between Adverse Childhood Experiences (Aces) With Psychological Well-Being (PWB)

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Abstract: *Adverse Childhood Experiences (ACEs) have been recognized as potent predictors of psychological functioning in adulthood. These early life stressors, encompassing abuse, neglect, and household dysfunction, can significantly impair psychological well-being (PWB). Despite growing global evidence, the intersection of ACEs with age and gender as moderating factors in psychological outcomes remains underexplored in the Pakistani context, particularly among university students.* ***Objective:*** *To examine the relationship between adverse childhood experiences (ACEs) and psychological well-being (PWB) among university students in Quetta, Pakistan, and to investigate the moderating effects of age and gender on this relationship.* ***Methods:*** *A cross-sectional study was conducted among 145 university students, stratified into two age groups (18–24 and 25–30 years), across Quetta, Pakistan. Data were collected using the conventional 10-item Adverse Childhood Experiences (ACEs) questionnaire and a shortened 18-item version of the Psychological Well-Being (PWB) scale covering six domains (autonomy, environmental mastery, personal growth, positive relations, purpose in life, and self-acceptance). Statistical analysis included independent samples t-tests to assess mean differences by age and gender, and correlation analysis to examine the relationship between ACEs and PWB.* ***Results:*** *The results showed a statistically significant relationship between ACEs and PWB ($p < 0.05$). A mean difference was observed between the two age groups on the ACEs scale ($p = 0.04$), but the mean difference on the PWB scale was not significant ($p = 0.388$). Gender-based analysis indicated no statistically significant mean differences on the ACEs ($p = 0.782$) or PWB ($p = 0.841$) scales. However, correlation analysis affirmed a negative association between higher ACE exposure and lower psychological well-being.* ***Conclusion:*** *The findings suggest a significant inverse relationship between adverse childhood experiences and psychological well-being among university students. Although age showed a significant impact on ACE scores, gender did not appear to influence either ACEs or PWB significantly. These results underscore the importance of early trauma-informed interventions in improving psychological health outcomes in youth populations.*

Keywords: Adverse childhood Experience, Psychological well-being and Quetta

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Introduction

Adverse Childhood Experiences (ACEs)—including emotional, physical, and sexual abuse, neglect, and exposure to household dysfunction before the age of 18—are recognized as critical risk factors for negative psychological outcomes later in life. These early life stressors have been shown to significantly compromise psychological well-being (PWB), a multidimensional concept encompassing self-acceptance, autonomy, purpose in life, positive relationships, environmental mastery, and personal growth (1,2). The cumulative impact of ACEs has been linked with emotional dysregulation, depression, anxiety, and impaired social functioning in adulthood (3,4).

International research consistently demonstrates that higher ACE scores are associated with poor psychological health, including reduced resilience and increased vulnerability to mental illnesses (5,6). In low- and middle-income countries such as Pakistan, the prevalence of ACEs may be higher due to widespread issues like poverty, family violence, parental substance abuse, and lack of social support systems (7). Moreover, societal taboos and limited access to mental health resources often prevent individuals from seeking psychological support, thereby exacerbating the long-term effects of childhood trauma (8).

Despite the increasing awareness of mental health challenges in Pakistan, there remains a significant gap in empirical research focusing on the relationship between ACEs and psychological well-being in university students, a population particularly vulnerable to stress and emotional instability during the transition to adulthood (9). Understanding this relationship is crucial for informing culturally appropriate mental health interventions and policy development aimed at mitigating the long-term psychological burden of early adversity.

The current study, therefore, aims to investigate the association between adverse childhood experiences and psychological well-being among university students in Quetta, Pakistan. By focusing on this underexplored population, the research seeks to contribute to the global and regional literature and provide evidence-based recommendations for mental health promotion and trauma-informed care.

Methodology:

The present study aimed to explore the impact of Adverse Childhood Experiences (ACEs) on Psychological Well-Being (PWB) among university students. It sought to determine the nature and extent of the relationship between ACEs and the overall psychological well-being of participants. A cross-sectional correlational research design was employed, focusing on ACEs as the independent variable and PWB as the dependent variable. The study emphasized the significance of understanding how early life stressors influence adult mental health outcomes.

Participants were selected based on clearly defined inclusion and exclusion criteria. Individuals aged 18 years and older who provided informed consent, demonstrated fluency in the study's language, and were

willing to complete self-report measures regarding their psychological well-being were included. Exclusion criteria comprised individuals with cognitive impairments that hindered comprehension or accurate responses, participants unable to provide sufficient data on childhood experiences, and those with neurological or severe medical conditions potentially impacting psychological well-being independently of ACEs. Furthermore, individuals requiring unavailable translation services were excluded to ensure response reliability.

The total sample consisted of 145 university students (46 males and 99 females), aged between 18 and 32 years, currently enrolled in undergraduate or postgraduate programs at the University of Balochistan and Sardar Bahadur Khan Women's University in Quetta, Pakistan. A non-probability convenience sampling technique was utilized for participant recruitment.

Data collection was initiated following informed consent, with participants assured of the voluntary nature of their involvement, confidentiality of responses, and their right to withdraw from the study at any point. The study instruments included a demographic information form, the Adverse Childhood Experiences (ACE) questionnaire developed by Felitti et al. (1998), and the 18-item Psychological Well-Being (PWB) Scale developed by Ryff (1989). The ACE questionnaire assessed exposure to abuse, neglect, and household dysfunction before the age of 18. The PWB scale measured six dimensions of well-being: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Participants responded to items using a 7-point Likert scale ranging from "strongly agree" (1) to "strongly disagree" (7), with reverse scoring applied to negatively worded items (items 1, 2, 3, 8, 9, 11, 12, 13, 17, and 18). Total scores were computed by summing responses across all items.

The data collection process allowed participants to seek clarification on questionnaire items when needed, ensuring accurate data capture. All collected data were systematically coded and analyzed using SPSS software to explore the relationships between ACEs and PWB, including comparative analyses across different age and gender groups. The study adhered to ethical research practices and aimed to contribute to the understanding of how early adverse experiences shape psychological outcomes in emerging adulthood.

Results:

The table 1 presents mean, standard deviation median and range scores of Adverse childhood Experiences (ACEs), and Psychological Well Being (PWB). The same table also shows statistic skew of each scale in which both scales Adverse Childhood Experiences (ACEs) and Psychological Well Being (PWB) reported significant skew in score distribution.

Psychometric Properties of ACEs-Adverse childhood and PWB-Psychological Well Being. For establishing psychometric strength alpha coefficients were calculated as evidence of reliability and item scale totals were calculated as the evidence of internal consistency (construct validity) are tabulated below.

Table 2 indicates reliability of Adverse Child Experiences (ACEs) and Psychological Well Being (PWB). Reliability of ACEs scale is relatively low but reliability of PWB scale is reported to be good ($\alpha > 0.8$).

Table 4 indicates item total correlation coefficient of Adverse Childhood Experience (ACEs) Scale. Most of the items reported positive significant correlation ($p \leq .001$) with scale. Over all it indicates that items are internally consistent which reflect construct validity of scale.

Table 3 indicates item total correlation coefficient of Psychological Well Being Scale (PWB). All of the items reported positive significant correlation ($p \leq .001$) with scale accept item no 6, 10, and 15. Over all it indicates that items are internally consistent which reflect construct validity of scale.

Relationship between Adverse Childhood Experience and Psychological Well Being

As main objective and aim of the study was to find relationship between Adverse Childhood Experiences and Psychological Well-Being. Which was measured through calculating correlation coefficient

Note. ACEs= Adverse Childhood Experiences; PWB= Psychological Well Being; ***=$p \leq .001$

The table 6 indicates Total Correlation Coefficient of Adverse Childhood Experiences and Psychological Well Being Scale. The result reported that there is negative significant correlation between Adverse Childhood Experiences and Psychological Well Being total scores. Demographic Analysis of Adverse Childhood Experiences and Psychological Well-Being

Table 6 indicates mean differences and standard deviation among adult's students of university on Adverse Childhood Experience scale (ACEs) and psychological well-being scale (PWB). The result indicates that there is significant ($p \geq .01$) mean differences on two age groups on Adverse Childhood Experience scale (ACEs) and there is non-significant mean differences on two age group on Psychological Well Being (PWB) scale.

Table 5 indicate mean differences and standard deviation Among adult students of university on Adverse Childhood Experience scale (ACEs) and psychological well-being scale (PWB).The result indicates that there is non-significant mean differences among two gender groups on both scales Adverse Childhood Experience (ACEs) and Psychological Well Being (PWB).

Tale 1 Score Distribution of ACEs-Adverse Childhood Experiences & PWB-Psychological Well Being Scale

No.	Scale	No. of items	M	SD	Median	Range		Skewness	
						Min.	Max.	Skew	Std. error
1.	ACEs	10	4.63	2.77	5.00	0	9	.161	.201
2.	PWB	18	81.12	19.32	79.00	30	110	-.286	.201

Note; ACEs=Adverse Childhood Experiences; PWB= Psychological Well Being

Table 2 Reliability Coefficient of Adverse Child Experiences (ACEs)and Psychological Well Being (PWB) scale (N=145)

Sr.no	Scales	No. of items	Cronbach's Alpha
1	ACEs	10	.412
2	PWB	18	.854

Note. ACEs=Adverse Child Experiences; PWB=Psychological Well Being.

Table 3 Total Item Correlation Coefficient of Adverse Childhood Experiences (ACEs), (N=145)

Serial No	No of items	Total score of Adverse Childhood Experiences	
		R	P
1	1	.452*	.000
2	2	.524*	.000
3	3	.407*	.000
4	4	.420*	.000

5	5	.442*	.000
6	6	.471*	.000
7	7	.447*	.000
8	8	.419*	.000
9	9	.218*	.000
10	10	.442*	.000

Note. **=p≤.001

Table 4 Total Item correlation coefficient of Psychological Well Being Scale (PWB), (N=145)

Item no.	*r*	*P*	Item no.	*r*	*p*
1	.726**	.000	12	.671**	.000
2	.746**	.000	13	.604**	.000
3	.721**	.000	14	.436**	.000
4	.451**	.000	15	.111	.183
5	.536**	.000	16	.259	.002
6	.342	.207	17	.568**	.000
7	.393*	.010	18	.666**	.000
8	.597**	.000	-	-	-
9	.699**	.000	-	-	-
10	.137	.101	-	-	-
11	.769**	.000	-	-	-

Note. **p≤.001.

Table 5 Correlation Coefficient of Adverse Childhood Experiences (ACEs) and Psychological Well Being scale (PWB) (N=145).

Serial no	Scale	PWB	
		r	*P*
1	ACEs	-.494***	.000

Table 6 Differences in Mean and Standard Deviation among Adults Students of University Scores on Adverse Childhood Experience scale (ACEs) and Psychological well Being scale (PWB) on Gender Groups (N=145)

S.no	Scale	18 to 24 (*N*=99)		24 to 30 (*N*=46)		*t* (143)	*p*	CI 95%		Cohen's d
		M	SD	M	SD			LL	UL	
1.	ACEs	3.39	1.86	4.15	1.79	-2.43	.016	-1.37	-.143	28.21
2.	PWB	72.22	19.02	68.74	16.78	1.06	.288	-2,98	9.95	399.89

Note. ACEs=Adverse Childhood Experience Scale; PWB= Psychological well-being Scale.

Table 7 Differences in Mean and Standard Deviation among adults of University Students Scores on Adverse Childhood Experience scale (ACEs) and Psychological well Being scale (PWB) on Gender Groups (N=145)

S.no	Scale	Men (*N*=51)		Women (*N*=94)		*t* (143)	*p*	CI 95%		Cohen's d
		M	SD	M	SD			LL	UL	
1.	ACEs	3.75	.23	3.57	.19	.55	.582	-.44	.78	201.65
2.	PWB	70.43	2.88	71.49	1.76	-.33	.741	7.38	5.26	368.72

Note. ACEs=Adverse Childhood Experience Scale; PWB= Psychological well-being Scale

Discussion

The present study aimed to investigate the relationship between Adverse Childhood Experiences (ACEs) and Psychological Well-Being (PWB) among university students in Quetta, Pakistan. Findings revealed a statistically significant negative correlation between ACEs and PWB ($r = -0.494$, $p < .001$), indicating that individuals with higher exposure to adverse experiences during childhood tend to report lower levels of psychological well-being. These results are consistent with global research asserting that exposure to early life trauma disrupts psychological development and predisposes individuals to emotional dysregulation, poor coping mechanisms, and reduced life satisfaction (10,11). The psychometric assessment of the scales used in this study provides further validation for the observed associations. The ACEs questionnaire showed modest internal consistency ($\alpha = .412$), which, although relatively low, is not uncommon given its dichotomous response format and broad categorical domains (12). Conversely, the PWB scale demonstrated excellent reliability ($\alpha = .854$), consistent with previous studies that have established Ryff's scale as a robust instrument for assessing psychological wellness across diverse populations (13).

The item-total correlation analysis of the ACEs scale indicated that most items were significantly correlated with the total score ($p \leq .001$), supporting the construct validity of the tool in the local context. Similarly, the PWB scale items showed high internal consistency, with the exception of items 6, 10, and 15, which failed to reach significance. These discrepancies may reflect cultural or contextual factors affecting how well-being constructs are understood or reported in Pakistani populations,

aligning with prior research suggesting that Western-developed psychological scales may require cultural adaptation (14).

In terms of demographic analysis, significant differences in ACE scores were observed between age groups, with students aged 24 to 30 reporting more adverse childhood experiences compared to younger participants ($p = .016$). This may reflect retrospective bias or increased awareness of early trauma with age, as suggested by earlier findings in trauma literature (15). However, no significant age-related differences were observed for PWB scores, suggesting that current well-being may be influenced by a broader set of dynamic variables including peer relationships, academic stress, and social support systems (16).

Gender-based comparisons revealed no significant differences in ACEs or PWB scores, indicating that the negative impact of childhood adversity on well-being is comparably distributed among male and female students. This is supported by international evidence suggesting that while types of adversity may vary by gender, the psychological toll remains significant across both sexes (17). However, cultural norms surrounding emotional expression and stigma may underreport psychological distress among males in conservative societies like Pakistan (18).

Overall, the study reinforces the growing body of literature highlighting the lasting effects of early adversity on psychological functioning. Importantly, it underscores the urgent need for trauma-informed mental health interventions and screening programs within academic institutions. Given the lack of mental health infrastructure in Pakistan, universities can play a critical role in fostering resilience, offering psychosocial support, and integrating mental health education into student services (19).

Future research should consider longitudinal designs to assess causal pathways, explore protective factors such as social support or coping strategies, and include clinical interviews alongside self-report tools to enhance data accuracy. Furthermore, qualitative exploration could provide deeper insights into how individuals interpret and internalize their childhood experiences in the context of psychological well-being.

The finding of this research has many implications in educational setting, family interaction, and clinical settings and in counselling program. Counselling professionals in college campuses can design various programs to assist students with ACEs, in educational setting teacher can aware their students regarding affect adverse childhood experiences. Considering familial interaction and relationship, parents should be aware of the impact of adverse childhood experience on psychological well-being. Furthermore, organization and NGOs can conduct programs aware people about childhood adversity and their effects.

Declarations

Data Availability statement

All data generated or analysed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department concerned. (IRBEC-BUMH-6 952-24)

Consent for publication

Approved

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Conflict of interest

The authors declared the absence of a conflict of interest.

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All authors reviewed the results and approved the final version of the manuscript. They are also accountable for the integrity of the study.

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