

A Study Exploring the Relationship Between Adverse Childhood Experiences and Mental Health in Adulthood Based on Socio-Demographic Factors

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ABSTRACT

This paper examined the long-term outcomes of Adverse Childhood Experiences (ACEs) on mental health and coping mechanisms in adulthood with reference to gender variations and socioeconomic status of childhood. The respondents included in the study are students at the University of the Punjab who were sampled using structured questionnaire which measured childhood trauma, present mental health and coping behaviors. There were non-parametric statistical tests such as Chi-square, Mann-Whitney U, and Kruskal-Wallis tests carried out because the data is not normally distributed. The results indicated that childhood adversity was prevalent among the students. There was also a significant difference in the ACEs that are associated with domestic and community violence based on gender but there was not a significant difference in mental health outcomes in gender. There were differences in stress levels, anxiety and the choice of coping strategies, but there was no difference in overall coping and mental health levels between genders. There was no significant correlation between childhood socioeconomic status and ACE exposure, mental health outcomes, and coping mechanisms.

Because of the results, it is stated that gender does not significantly affect the mental health of adults and their coping ability, although it affects the kind of childhood trauma that an individual experiences. Likewise, financial well-being in childhood is not a predictor of emotional well-being. These results demonstrate the necessity of the existence of trauma-informed and inclusive mental health intervention in the university, which would provide service to students irrespective of their gender or socioeconomic status.

Keywords: Adverse Childhood Experiences (ACEs), Mental Health, University Students, Coping Mechanisms, Gender Differences, Socioeconomic Status (SES), Psychological Well-being.

INTRODUCTION

Adverse Childhood Experiences (ACEs) include potentially traumatic childhood experiences, which include physical, emotional, or sexual abuse, neglect, and household dysfunction including domestic violence, substance abuse, and parental separation. Such experiences cripple the safety, stability and growth of a child. ACEs are generally acknowledged as highly important stressors which might interfere with emotional control and raise the risk of unfavorable consequences in adulthood. (Sindhura & J, 2025). These childhood experiences have been associated with lifelong emotional imbalance, mental vulnerability, and psychological frailty in adulthood (Silva et al., 2024). ACEs may interfere with neurobiological development processes, as well as with chronic stress response systems, which puts a person at a higher risk of developing anxiety, depression, and behavioral issues later in life. Adulthood, especially in students of the university, is associated with distinct academic, social, and emotional difficulties that can enhance the consequences of early trauma (Irshad and Lone, 2025). Both adaptive and maladaptive coping mechanisms such as social support seeking and problem solving as well as avoidance contribute to moderation of the effects of childhood adversity on adult psychological well being.

According to the recent evidence, ACEs are very common in the South Asian setting, such as Pakistan, and there is a strong correlation between ACE exposure and the poor mental wellbeing of young adults (Mahmood and Fatmi, 2025). As an illustration, a recent study in Pakistan found that almost all young adults had experienced at least one ACE, and individuals who had larger ACE exposure had much higher chances of having poor mental wellbeing. The possibility of negative experience on emotional health, social functioning, personality development, and academic performance is further supported in qualitative research carried out among Pakistani university students (Fatima et al., 2024). Although this growing amount of evidence exists, the majority of studies in ACEs are limited to Western population and there is a critical gap of knowledge on the effects of these experiences on mental health and coping mechanisms in Pakistani university students (Sindhura & J, 2025).

The cultural stigma of mental illness and childhood adversity in Pakistan tends to reduce the discussion and early diagnosis of trauma, leading to late help-seeking and poor help provision. The current research paper analyzes the long-term impacts of ACEs on mental health symptoms and coping strategies in the students at the University of the Punjab, one of the most diverse academic institutions, which represent a broad spectrum of socio-demographic factors. Knowledge of these associations is essential in creating trauma-informed mental health care and strengthening university support networks and informing policy responses to support the wellbeing of the student demographic irrespective of gender and socioeconomic status in childhood.

Adverse Childhood Experiences (ACEs), including abuse, neglect, and family dysfunction since childhood, are set to be known as potent social determinants of mental and emotional health throughout life (Felitti et al., 1998; Hughes et al., 2017). An extensive amount of literature indicates dose-response, graded cumulative exposure to ACE is associated with elevated risks of risk of depression, anxiety disorder, substance misuse, suicidal thoughts, and psychological distress in adulthood (Chapman et al., 2004; McMenamin, Halpin, and Bellows, 2006). Longitudinal and life-course studies also support the point that ACEs have long-term influence on mental health patterns in adolescence and adulthood, regardless of subsequent adversities in the life (Bethell, Jones, Gombojav, Linkenbach, and Sege, 2019; Gondek, 2021; McLaughlin et al., 2010). Causal inference is enhanced by twin and genetically informed researches which indicate that ACEs predict psychiatric disorders in adults, independent of shared genetic and family environmental factors (Danielsdottir et al., 2024; Jaffee et al., 2013). In systematic reviews and meta-analyses, emotional abuse, sexual abuse, family violence, and neglect are always mentioned as the most notable predictors of depression, anxiety, PTSD, and substance misuse (Bernal et al., 2013; Hughes et al., 2017).

Explicit results have shown that certain ACEs like living with a mentally ill parent or witnessing violence in the home are some of the best predictors of low adult mental health (Dube et al., 2003; Mwachofi, Imai, and Bell, 2020). Life-course models show that ACEs have a direct and indirect impact on adult mental health by way of socioeconomic disadvantage, exposure to chronic stress factors, and lack of social support (Jones and Kierzkowski, 2018; Pearlin, Schieman, Fazio, and Meersman, 2005).

The gender factor has been noted to have a significant moderating effect in the ACE-mental health relationship, and adaptive coping strategies have been associated with resiliency and maladaptive coping mechanisms with stress intensifying the psychological distress (Taylor and Stanton, 2007). There has been a consistent gender difference in ACE and mental health relationship, with females reporting higher levels of ACE exposure and vulnerability to depression, anxiety, and suicidal tendencies (Merrick et al., 2017). The validity of ACEs in low- and middle-income countries is becoming more and more confirmed by research, and national studies in Saudi Arabia and Iran provide strong cumulative implications on mental disorders and high-risk behaviour (Almuneef, 2021; Pournaghash-Tehrani and Amini-Tehrani, 2019). Recent studies in South Asia, and, in particular, Pakistan, have shown a worryingly high prevalence of ACE in university students and close correlations with depression, anxiety, lower levels of psychological well-being, and substance use (Chaudhary et al., 2022; Nichols et al., 2022; Riaz, Abid, and Bano, 2021). A qualitative research conducted on Pakistani students also demonstrates that unresolved childhood trauma has adverse effects on emotional control, interpersonal relationships, identity development, and functioning in academics (Bertolazzi, Quaglia, and Bongelli, 2024; Khan, Khan, Khan, and Nawaz, 2020). This accumulating evidence notwithstanding, ACE studies are still skewed towards the Western settings, with major gaps in culturally sensitive, gender-sensitive studies on coping and mental health among populations of South Asian universities (Gautam, Jain, Gautam, Vahia, and Grover, 2017; Patel et al., 2018).

In addition to psychological consequences, an increasing literature on interdisciplinary models indicates that early trauma may be biologically embedded, with neuroendocrine functions, stressed reactions, and brain development increasing susceptibility to mental illness throughout life (Shonkoff et al., 2012; Teicher, Samson, Anderson, and Ohashi, 2016). There is neuroscientific evidence that long-term stress on children disrupts the hypothalamic-pituitary-adrenal (HPA) axis and causes long-term cortisol exposure, which has adverse effects on emotional regulation, memory, and executive functions in adulthood (Lupien, McEwen, Gunnar, and Heim, 2009; McCrory, De Brito and Viding, 2011). The stress proliferation framework is a stressor-focused approach to explaining the relationship between childhood adversity and mental health risk, which states that low socioeconomic status (SES) enhances the psychological effects of childhood trauma due to lack of access to necessary resources, parental buffering, and chronic environmental stress (Reiss, 2013; Slopen et al., 2016).

Nonetheless, multiple mass investigations have shown that ACEs have detrimental impacts on socioeconomic lines, so emotional trauma is not a product of financial loss but of social and environmental insecurity (Gondek, 2021). Gender-based analyses also show the patterns of exposure and vulnerability differences with females more likely to report interpersonal ACEs of emotional and sexual abuse and males more likely to report community violence and physical punishment (Afifi, Asmundson, Taylor, and Jang, 2010). Notably, gender differences are not solely a matter of exposure, also covering coping styles and emotional expression, female ones being inclined to internalizing symptoms (e.g. anxiety, depression) more frequently and males to externalizing behaviors or emotional suppression (Nolen-Hoeksema, 2012). The coping theory is a theory that offers the critical perspective on the variability of outcomes in ACE as those who have been exposed to the same adversity but exhibit very different psychological routes basing on coping ability, emotions regulation aptitude, and availability of social support (Southwick, Bonanno, Masten, Panter-Brick, & Yehuda, 2014).

One of the most significant groups of the ACE research should be university students because at the beginning of adulthood the identity formation, autonomy and the increased academic and social demands may trigger unresolved childhood trauma (Stallman, 2010). Research findings are always similar, high ACE students are found to report worse academic performance, heightened stress, poor concentration and psychological well-being as compared to their counterparts (Ford et al., 2011). Collectivist cultures, including in Pakistan, family, gender, and mental health stigma can also influence the experience of ACEs, how they are interpreted, and managed, which tends to dishearten disclosure and seeking help (Husain et al., 2016).

Pakistani recent research confirms that exposure to ACE is common and significantly linked to depression, anxiety, deteriorated psychological well-being, and maladaptive coping patterns with university students. Trauma-informed mental health services in Pakistani universities are not widespread even though awareness of those is on the rise, and most institutions do not screen the ACEs or offer specific interventions. Taken together, the literature highlights the complexity of the mechanisms of ACEs, and the final results depend upon gender, approaches to coping, and aspects of context. Nevertheless, there is a lot of missing information on how these factors interact within Pakistani university students, especially with the use of a gender sensitive and culturally based approach.

METHODOLOGY

Research Design

This paper has used the descriptive cross-sectional survey design to investigate the association between adverse childhood experiences (ACEs) and mental health outcomes and coping strategies in college students, and how these variables show gender variability. Quantitative data was collected using a structured questionnaire hence providing systematic and standardized measurements of variables.

Target Population

The target population consisted of students pursuing different academic departments of the University of the Punjab. The results of the research were applied to this group of students.

Sampling Technique and Sample size

Convenience sampling method was used because of the time constraints and accessibility. Students available and willing to participate were included in different departments and hostels. There were no limiting inclusion criteria. One hundred and sixty-nine students of various academic backgrounds were involved in the study.

Pretesting

To enhance clarity and reliability, the questionnaire was pretested on 10 students prior to final data collection. Feedback from the pilot study helped refine wording, remove ambiguities, and ensure that the instrument adequately addressed the study objectives.

Data Collection Procedure

Data were collected over a 15-day period. The researcher personally distributed questionnaires across departments and hostels and collected responses immediately after completion. Participants were briefed about the study objectives, assured of confidentiality, and provided assistance when required. Overall, the data collection process was smooth and yielded complete and usable responses.

Research Instrument

A structured questionnaire consisting of 41 items was used. It included:

- Demographic information
- Adverse Childhood Experiences (10 yes/no items)
- Mental Health Assessment (Likert-scale items assessing emotional and psychological symptoms)
- Coping Mechanisms (yes/no items reflecting behavioral strategies)

The questionnaire was written in clear and simple English to facilitate accurate and honest responses.

Type of Data

The study relied on primary data, collected directly from participants through the questionnaire, to address the research questions.

Data Coding and Variable Construction

Collected data were entered and analyzed using IBM SPSS. All variables were numerically coded based on their measurement level (nominal, ordinal, or scale).

Three composite variables were created:

- ACEs Score: Sum of 10 ACE items (0–10)
- Mental Health Score: Sum of Likert-scale mental health items
- Coping Mechanism Score: Sum of coping behavior items

These composite scores represented overall exposure, mental health status, and coping capacity.

Coding Scheme of Demographic Data

Sr. #	Variable	Type	Coding
1	Age	Continuous	Enter actual value
2	Gender	Categorical	0=Female , 1= Male
3	Degree Program	Categorical	1=BS , 2=MS/MPhil , 3=PhD , 4=Other
4	Semester	Continuous	Enter actual Value
5	Accommodation Status	Categorical	1=Hostelite , 2=Day Scholar

6	Socioeconomic Status	Categorical	1=low , 2=middle , 3=high
7	Family Structure	Categorical	1=Both Parents , 2=Single Parent , 3=Guardian/Relatives
8	Parents Mental Illness	Categorical	0=no , 1=yes
9	Financial hardships	Categorical	0=no , 1=yes
10	Area	Categorical	1=urban , 2=rural
11	Healthcare access	Categorical	0=no , 1=yes
12	Parents Separation	Categorical	0=no , 1=yes

Coding Scheme of ACEs Data

Sr. #	Variables	Type	Coding
13	ACEs_1	Categorical	0=no , 1=yes
14	ACEs_2	Categorical	0=no , 1=yes
15	ACEs_3	Categorical	0=no , 1=yes
16	ACEs_4	Categorical	0=no , 1=yes
17	ACEs_5	Categorical	0=no , 1=yes
18	ACEs_6	Categorical	0=no , 1=yes
19	ACEs_7	Categorical	0=no , 1=yes
20	ACEs_8	Categorical	0=no , 1=yes
21	ACEs_9	Categorical	0=no , 1=yes
22	ACEs_10	Categorical	0=no , 1=yes

Coding Scheme of MHA Data

Sr. #	Variables	Type	Coding
23	MHA_1	Categorical	0=never , 1=occasionally , 2=frequently , 3=always
24	MHA_2	Categorical	0=never , 1=occasionally , 2=frequently , 3=always
25	MHA_3	Categorical	0=never , 1=occasionally , 2=frequently , 3=always
26	MHA_4	Categorical	0=never , 1=occasionally , 2=frequently , 3=always
27	MHA_5	Categorical	0=never , 1=occasionally , 2=frequently , 3=always
28	MHA_6	Categorical	0=never , 1=occasionally , 2=frequently , 3=always
29	Diagnosed	Categorical	0=no , 1=yes
30	Sought MH Support	Categorical	0=no , 1=yes
31	Suicidal Thought	Categorical	0=no , 1=yes
32	Rate MH	Categorical	1=very poor , 2=poor , 3=average , 4=good

Coding Scheme of CM Data

Sr. #	Variable	Type	Coding
33	CM_1	Categorical	0=no , 1=yes
34	CM_2	Categorical	0=no , 1=yes
35	CM_3	Categorical	0=no , 1=yes
36	CM_4	Categorical	0=no , 1=yes
37	CM_5	Categorical	0=no , 1=yes
38	CM_6	Categorical	0=no , 1=yes

39	CM_7	Categorical	0=no , 1=yes
40	CM_8	Categorical	0=no , 1=yes
41	CM_9	Categorical	0=no , 1=yes

Data Analysis Techniques

Descriptive Analysis

Demographic characteristics and important study variables were summarized using descriptive statistics in the form of frequency distributions and percentages.

Inferential Analysis

To investigate the relationships and group differences that can be detected concerning adverse childhood experiences (ACEs), mental health outcomes, and coping styles, inferential statistical analysis was performed. The data did not follow the assumption of normality and therefore the non-parametric statistical tests were used. The statistical analyses were done on all the data using IBM SPSS and the level of significance to determine whether it was statistically significant was set at $p < 0.05$.

1. Chi-Square Independent T-test

The Chi-Square Test of Independence was applied in testing relationships between categorical variables such as gender, parental mental illness, financial hardship and certain types of adverse childhood experiences. This test was used to ascertain whether there was a significant difference in the distribution of ACEs and mental health indicators, across demographic groups.

Hypotheses:

H₀: The variables are not significantly related.

H₁: The variables are significant.

The p-value of less than 0.05 showed that the relationship between the two variables was statistically significant.

2. Mann-Whitney U Test

Mann-Whitney U Test was used to determine gender differences regarding ACEs scores, Mental health indicators, and weighted scores of coping mechanisms. This was a non-parametric test of median scores of male versus female participants and was suitable because of the ordinal nature of data and non-normality.

Hypotheses:

H₀: There is no significant difference between the male and female subject.

H₁: The difference between the male and female participants is significant.

A p-value of below 0.05 was a sign of significant difference between the two groups.

3. Independent Sample Kruskal-Wallis H Test

Comparison of ACEs exposure, mental health outcomes, and coping strategies in three or more independent groups was done by the Independent Sample Kruskal-Wallis H Test, especially based on childhood socioeconomic status (low, middle and high). This test was used as a non-parametric alternative of one-way ANOVA.

Hypotheses:

H₀: There is no meaningful difference between the groups.

H₁: one of the groups is significantly different to the others.

A p-value of less than 0.05 was an indication of statistically significant differences among the groups.

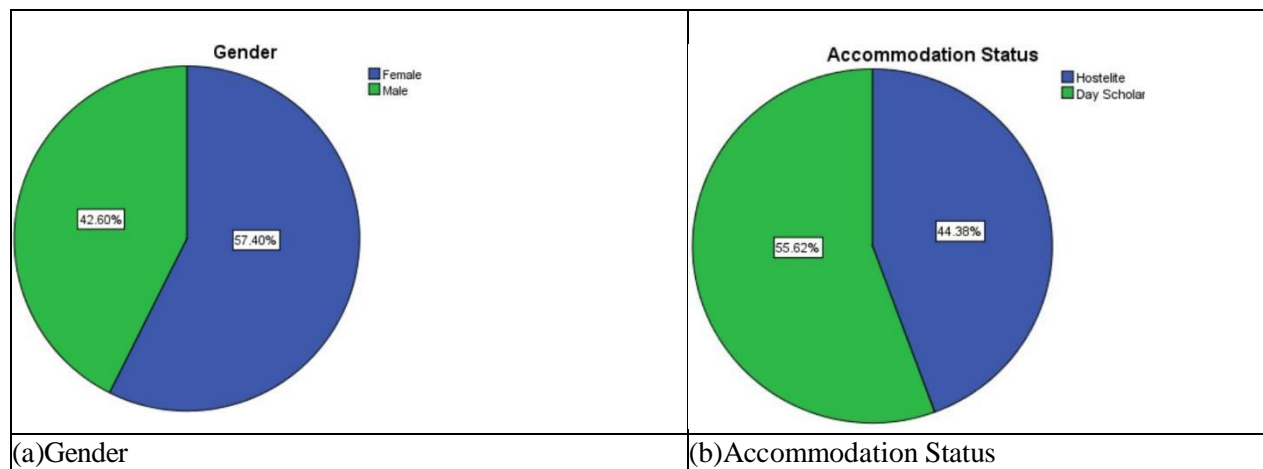
The systematic inferential analysis provided the study with a solid testing of the correlations and grouping differences, which added to the validity and interpretability of the study outcomes in the long-term effects of adverse childhood experiences on the mental health and coping strategies of university students.

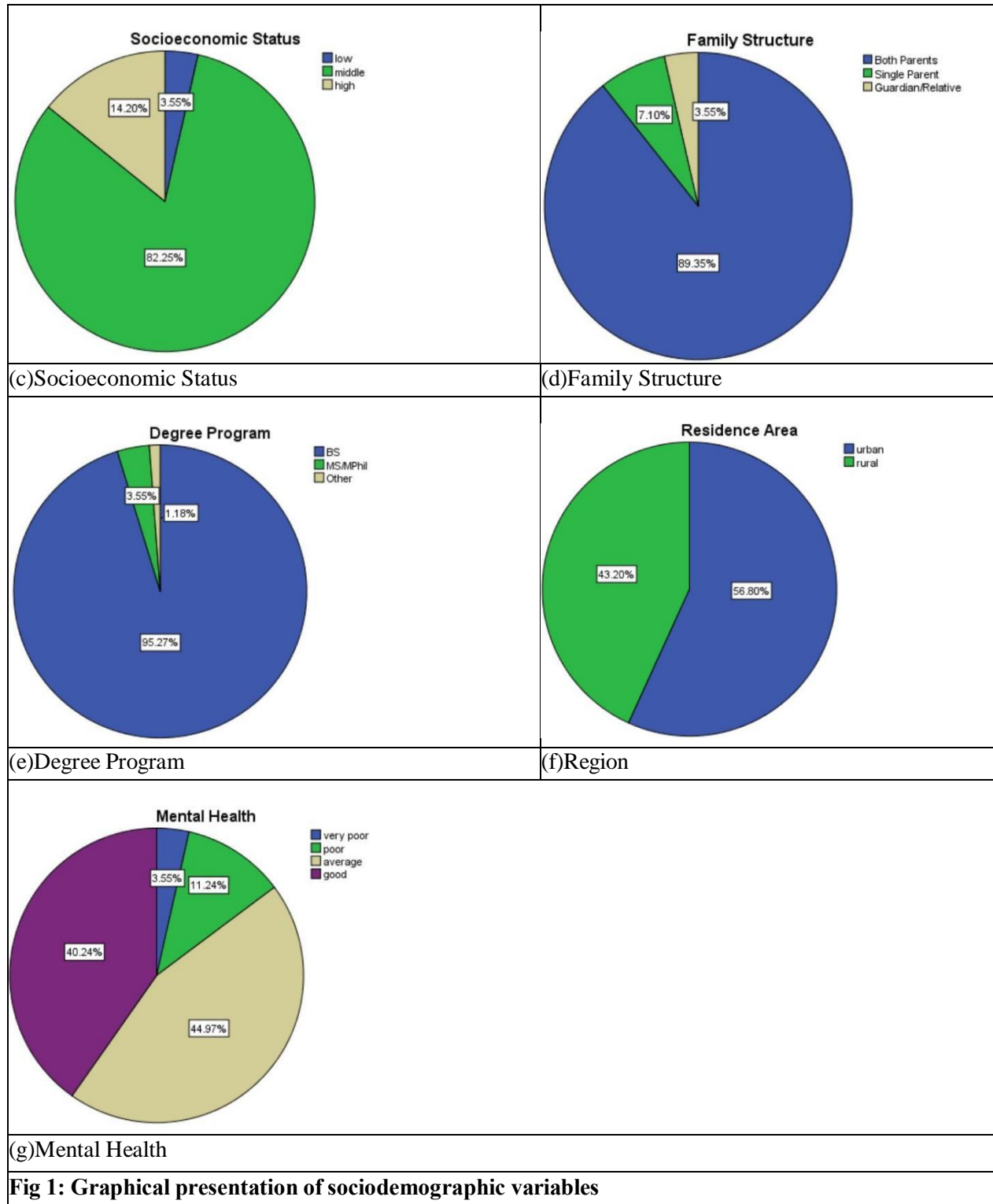
RESULTS AND DISCUSSION

In this section, the statistical results of the study are given and are discussed with the current researches on Adverse Childhood Experiences (ACEs), mental health, and coping mechanisms. Descriptive and inferential analyses were done to observe patterns, associations and group differences among university students in University of the Punjab.

Descriptive Results

The sociodemographic and mental health status of the participants (N = 169) along with the main variables of the study were summarized with the help of descriptive analysis. This analysis was used to create a general picture of the sample and put the inferential results into context.





The sample population was composed of a little more female students than males. The majority of the respondents were day scholars, and childhood middle-income earners who were co-residing with both parents. Most of them were undergraduate students, which reflects early adulthood, a time of critical

exposure when the psychological outcome of childhood trauma usually becomes more evident. The participants were of both urban and rural background and this allowed diversity in their upbringing and exposure to the environment.

In terms of mental health, a majority of the students gave average/good ratings of their mental health but a significant percentage gave poor/very poor ratings of their mental health. It means that although a great number of students seem to operate well, there is a large number of individuals who might be emotionally upset, which could be addressed.

TABLE 1: Descriptive Statistics of ACEs, MHA, and CM Scores)

	Minimum	Maximum	Mean	Std. Deviation
ACEs Score	0	7	2.04	2.194
MHA Score	0	18	6.89	3.344
CM Score	0	8	5.44	1.565

The average score on the ACEs showed that the majority of the students had at least one or two adverse childhood experiences, but others had more cumulative exposure. The mental health scores were highly variable indicating a difference in the degree of psychological distress among students. The scores of coping mechanisms were also quite similar and this means that the students tended to be dependent on a similar set of coping strategies.

INFERENCE RESULTS

Associations and group difference were analyzed through inferential analysis to determine associations and group differences depending on gender and childhood socioeconomic status (SES). The non-parametric tests were used as the data did not comply with the principle of normality.

Gender-based Relations with ACEs, Mental Health, and Coping

The Chi-Square test of Independence was applied to test the relationship between gender and particular ACEs, mental health symptoms, and coping measures.

Table 2: Chi-Square Test of Association between Gender and Adverse Childhood Experiences (ACEs)

Variable	Chi-Square Value (χ^2)	df	p-value
Emotional Abuse	2.519	1	0.112
Physical Abuse	4.518	1	0.034
Sexual Abuse	6.391	1	0.011
Neglect	1.426	1	0.232
Domestic Violence	7.411	1	0.006
Suicidal Family Member	0.002	1	0.963
Substance Abuser	0.053	1	0.817
Parents Divorced	0.199	1	0.655
Community Violence	12.490	1	0.000
Bullying	1.315	1	0.252

Significant gender correlation was observed on physical abuse, sexual abuse, domestic violence and community violence, which implies that physical and sexual abuse and domestic violence as well as community violence were not equally exposed to both sexes. Other ACEs including emotional abuse, neglect, separation between parents, substance abuse within the home and bullying were also reported alike by male and female students. These results stand out the gendered nature of some of the traumatic experiences and also point out that most of the misfortunes are common to both genders.

Table 3: Chi-Square Test of Association between Gender and Mental Health Status (MHA)

Variable	Chi-Square Value (χ^2)	df	p-value
Stress or Anxiety	8.496	3	0.037
Symptoms of Depression	2.654	3	0.448
Socially Isolated or Lonely	1.502	3	0.682
Difficulty in Making Decisions	2.867	3	0.413
Experience Nightmares	3.757	3	0.289
Emotional Outbursts	8.265	3	0.041

Among the mental health indicators, emotional outbursts and stress/anxiety were found to have a significant correlation with gender, which implied that the emotional expression and responses to stress vary between genders. However, on the other hand, only the symptoms of depression, loneliness, nightmares, and decision-making difficulties were reported equally by both sexes, which means that many mental health issues are not gender-specific among university students.

Table 4: Chi-Square Test of Association between Gender and Coping Mechanism (CM)

Variable	Chi-Square Value (χ^2)	df	p-value
Strong Support System	0.247	1	0.619
Relaxation Techniques	1.500	1	0.221
Creative Activities	13.009	1	0.000
Talk to Someone	8.224	1	0.004
Active Outlets	0.835	1	0.361
Substance Abuse	0.937	1	0.333
Mental Health Awareness	0.997	1	0.318
Participate in MH Programs	3.658	1	0.056
Good Health Way	1.168	1	0.280

Coping behaviors were also found to vary among gender. Gender was highly correlated with physical activity and discussion with someone, which demonstrates gender-specific tastes regarding stress management and help-seeking behavior. The rest of the coping tactics, such as the use of relaxation methods, creative activities, mental health education and involvement in mental health programs did not differ by gender hence, indicating the possibility of common patterns of coping.

Gender-Based Comparison of ACEs, Mental Health, and Coping Scores

Normality testing confirmed that ACEs, mental health, and coping scores were not normally distributed.

Table 5: Normality Test results of ACEs, MHA, CM scores

Gender		Kolmogorov-Smirnov		
		Statistic	df	p-value
ACEs_Score	Female	0.278	97	0.000
	Male	0.160	72	0.000
MHA_Score	Female	0.126	97	0.001
	Male	0.093	72	0.200
CM_Score	Female	0.195	97	0.000
	Male	0.141	72	0.001

Accordingly, the Mann–Whitney U Test was used to compare scores between male and female students.

Table 6: Results of Mann-Whitney U Test for Gender Differences in ACEs, Mental Health, and Coping Strategies

Variable	p-value	Decision
ACEs_Score	0.001	Reject
MHA_Score	0.125	Accept
CM_Score	0.597	Accept

Findings revealed that there was a statistically significant gender variation in ACEs scores, which means that there was unequal exposure to childhood adversity. Nonetheless, there were no significant gender differences in the mental health or coping mechanism scores. This creates a suggestion that, irrespective of the disparities in the exposure to childhood trauma, male and female students are at same levels in terms of facing and coping with mental health challenges in university life.

Childhood Socioeconomic Status Effect

The Kruskal-Wallis H Test was applied to determine the differences in ACEs, mental health, and coping among childhood SES groups.

Table 7: Kruskal-Wallis Test Results for ACEs, Mental Health, and Coping Mechanism Scores Across Socioeconomic Status Groups

Variable	p-value	Decision
ACEs_Score	0.082	Accept
MHA_Score	0.306	Accept
CM_Score	0.060	Accept

There were no significant differences between low, middle and high SES groups in all the three variables. According to these findings, childhood financial background does not, by itself, predict consequential exposure to trauma, current mental health status, or coping capacity among the members of this sample. Rather, emotional well-being seems to be predisposed through a wider scope of psychosocial and environmental influences. All in all, the results indicate that gender will have a moderating effect on the kind and the rate of specific childhood adversities, although it will not have a serious impact on mental health or level of coping in adulthood. In the same way, the socioeconomic status of childhood did not play a crucial role as an outcome determinant. These findings support the fact that childhood trauma has long term impacts that cuts across the male and female gender lines as well as the financial threshold. The

research highlights the significance of inclusive mental health care that is trauma-informed in higher education institutions. Different forms of support should be offered by the institutions that would deal with the common emotional issue as well as the gender specific trauma. The interventions to promote the well being and academic achievement of the students include early recognition, counseling, resilience-building programs, and stigma reduction programs.

Universities can be key in reducing negative effects of childhood adversity by acknowledging that so many students silently bear a psychological burden of early adversity, and can be more helpful in reducing the negative effects of this occurrence and creating a healthier and more supportive academic environment.

CONCLUSION

This paper examined how the Adverse Childhood Experiences (ACEs) are related to the mental health of adults among the students in Punjab University and the relationship between gender and socioeconomic status. Based on the data of 169 participants and non-parametric analysis, the results give valuable information about the way in which early-life adversity conditions psychological outcomes in the early adulthood. The findings showed that there is a large disparity in exposure to violence-related ACEs such as physical, sexual abuse, domestic violence, and community violence where females reported a higher level of adversity. Gender distinctions also existed in certain symptoms of mental health especially stress/anxiety and emotional outbursts. Nonetheless, there were no significant gender differences in the overall mental health status and the coping processes, which implies that even though there is an imbalanced exposure to childhood trauma, students exhibit similar mental functioning and coping strategies in adulthood. This means that socioeconomic background in childhood did not make any significant predictors of ACEs, mental health outcomes and coping strategies. This means that the emotional and psychological problems are common among socioeconomic lines and exist not only with the finances crippled backgrounds of this group of students.

On the whole, the research demonstrates the multifaceted nature of the problem of gender in exposure to childhood adversity and emphasizes that mental health issues are a common problem among college students. The findings also underscore the need to adopt trauma-informed and gender-sensitive mental health services in universities. That is why counseling resources should be more accessible and inclusive to meet the psychological needs of many students, irrespective of their gender or socioeconomic status. Providing empirical data in the context of a Pakistani university, this study helps to complement the gap in the literature on the topic of ACEs in the region and promote the creation of specific mental health interventions, awareness campaigns, and preventive support tools in accordance with the specifics of the experience of higher-education students.

REFERENCES

- Afifi, T. O., Asmundson, G. J., Taylor, S., & Jang, K. L. (2010). The role of genes and environment on trauma exposure and posttraumatic stress disorder symptoms: a review of twin studies. *Clinical psychology review, 30*(1), 101–112.
- Almuneef, M. (2021). Long term consequences of child sexual abuse in Saudi Arabia: A report from national study. *Child abuse & neglect, 116*, 103967.
- Bernal, S. A., Provis, J. L., Walkley, B., San Nicolas, R., Gehman, J. D., Brice, D. G., . . . Van Deventer, J. S. (2013). Gel nanostructure in alkali-activated binders based on slag and fly ash, and effects of accelerated carbonation. *Cement and Concrete Research, 53*, 127–144.

- Bertolazzi, A., Quaglia, V., & Bongelli, R. (2024). Barriers and facilitators to health technology adoption by older adults with chronic diseases: an integrative systematic review. *BMC Public Health*, 24(1), 506.
- Bethell, C., Jones, J., Gombojav, N., Linkenbach, J., & Sege, R. (2019). Positive childhood experiences and adult mental and relational health in a statewide sample: Associations across adverse childhood experiences levels. *JAMA pediatrics*, 173(11), e193007–e193007.
- Chapman, D. P., Whitfield, C. L., Felitti, V. J., Dube, S. R., Edwards, V. J., & Anda, R. F. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of affective disorders*, 82(2), 217–225.
- Chaudhary, F. A., Fazal, A., Ahmad, B., Khattak, O., Hyder, M., Javaid, M. M., . . . Issrani, R. (2022). The impact of COVID-19 pandemic on the psychological health and dental practice of oral healthcare workers: a scoping review. *Risk Management and Healthcare Policy*, 1421–1431.
- Daníelsdóttir, H. B., Aspelund, T., Shen, Q., Halldorsdottir, T., Jakobsdóttir, J., Song, H., . . . Fall, K. (2024). Adverse childhood experiences and adult mental health outcomes. *JAMA psychiatry*, 81(6), 586–594.
- Dube, S. R., Felitti, V. J., Dong, M., Chapman, D. P., Giles, W. H., & Anda, R. F. (2003). Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: the adverse childhood experiences study. *Pediatrics*, 111(3), 564–572.
- Fatima, R., Saleem, J., Ishaq, M., Khan, H. Z., Javaid Bukhari, G. M., Naz, M., . . . Jain, M. (2024). Effects of adverse childhood experiences on university students' ability to lead healthy lives: an exploratory qualitative study in Lahore, Pakistan. *BMC Public Health*, 24(1), 2897. doi:10.1186/s12889-024-20391-2
- Felitti, V. J. M. D., FACP, Anda, R. F. M. D., MS, Nordenberg, D. M. D., Williamson, D. F. M. S., . . . Mph. (1998). Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, 14(4), 245–258. doi:10.1016/S0749-3797(98)00017-8
- Ford, P., De Ste Croix, M., Lloyd, R., Meyers, R., Moosavi, M., Oliver, J., . . . Williams, C. (2011). The long-term athlete development model: Physiological evidence and application. *Journal of sports sciences*, 29(4), 389–402.
- Gautam, S., Jain, A., Gautam, M., Vahia, V. N., & Grover, S. (2017). Clinical Practice Guidelines for the management of Depression. *Indian Journal of Psychiatry*, 59(Suppl 1), S34–S50. doi:10.4103/0019-5545.196973
- Gondek, P. (2021). Creativity and intentionality: A philosophical attempt at reconstructing a creative process. *Creativity Studies*, 14(2), 419–429.
- Hughes, K., Bellis, M. A., Hardcastle, K. A., Sethi, D., Butchart, A., Mikton, C., . . . Dunne, M. P. (2017). The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis. *The Lancet public health*, 2(8), e356–e366.

- Husain, S., Sole, A., Alexander, B. D., Aslam, S., Avery, R., Benden, C., . . . Fedson, S. (2016). The 2015 International Society for Heart and Lung Transplantation Guidelines for the management of fungal infections in mechanical circulatory support and cardiothoracic organ transplant recipients: Executive summary. *The Journal of Heart and Lung Transplantation*, 35(3), 261–282.
- Irshad, S., & Lone, A. (2025). Adverse childhood experiences and their influence on psychological well-being and emotional intelligence among university students. *BMC Psychol*, 13(1), 255. doi:10.1186/s40359-025-02565-8
- Jaffee, S. R., Bowes, L., Ouellet-Morin, I., Fisher, H. L., Moffitt, T. E., Merrick, M. T., & Arseneault, L. (2013). Safe, stable, nurturing relationships break the intergenerational cycle of abuse: A prospective nationally representative cohort of children in the United Kingdom. *Journal of Adolescent Health*, 53(4), S4–S10.
- Jones, R. W., & Kierzkowski, H. (2018). The role of services in production and international trade: A theoretical framework. *World Scientific Book Chapters*, 233–253.
- Khan, M., Khan, H., Khan, S., & Nawaz, M. (2020). Epidemiological and clinical characteristics of coronavirus disease (COVID-19) cases at a screening clinic during the early outbreak period: a single-centre study. *Journal of medical microbiology*, 69(8), 1114–1123.
- Kruglanski, A. W. (2013). Only one? The default interventionist perspective as a unimodel—Commentary on Evans & Stanovich (2013). *Perspectives on Psychological Science*, 8(3), 242–247.
- Lupien, S. J., McEwen, B. S., Gunnar, M. R., & Heim, C. (2009). Effects of stress throughout the lifespan on the brain, behaviour and cognition. *Nature reviews neuroscience*, 10(6), 434–445.
- Mahmood, S., & Fatmi, Z. (2025). Prevalence of Adverse Childhood Experiences (ACEs) and its association with current mental wellbeing among young adults in Pakistan. *Child Abuse Negl*, 163, 107318. doi:10.1016/j.chiabu.2025.107318
- McCrary, E., De Brito, S. A., & Viding, E. (2011). The impact of childhood maltreatment: a review of neurobiological and genetic factors. *Frontiers in psychiatry*, 2, 48.
- McLaughlin, K. A., Green, J. G., Gruber, M. J., Sampson, N. A., Zaslavsky, A. M., & Kessler, R. C. (2010). Childhood adversities and adult psychiatric disorders in the national comorbidity survey replication II: associations with persistence of DSM-IV disorders. *Archives of general psychiatry*, 67(2), 124–132.
- McMenamin, S. B., Halpin, H. A., & Bellows, N. M. (2006). Knowledge of Medicaid Coverage and Effectiveness of Smoking Treatments. *American Journal of Preventive Medicine*, 31(5), 369–374. doi:10.1016/j.amepre.2006.07.015
- Merrick, M. T., Ports, K. A., Ford, D. C., Afifi, T. O., Gershoff, E. T., & Grogan-Kaylor, A. (2017). Unpacking the impact of adverse childhood experiences on adult mental health. *Child abuse & neglect*, 69, 10–19.
- Mwachofi, A., Imai, S., & Bell, R. A. (2020). Adverse childhood experiences and mental health in adulthood: Evidence from North Carolina. *Journal of affective disorders*, 267, 251–257.

- Nichols, E., Steinmetz, J. D., Vollset, S. E., Fukutaki, K., Chalek, J., Abd-Allah, F., . . . Akram, T. T. (2022). Estimation of the global prevalence of dementia in 2019 and forecasted prevalence in 2050: an analysis for the Global Burden of Disease Study 2019. *The Lancet public health*, 7(2), e105–e125.
- Nolen-Hoeksema, S. (2012). Emotion regulation and psychopathology: The role of gender. *Annual review of clinical psychology*, 8(1), 161–187.
- Patel, V., Saxena, S., Lund, C., Thornicroft, G., Baingana, F., Bolton, P., . . . Eaton, J. (2018). The Lancet Commission on global mental health and sustainable development. *The Lancet*, 392(10157), 1553–1598.
- Pearlin, L. I., Schieman, S., Fazio, E. M., & Meersman, S. C. (2005). Stress, health, and the life course: Some conceptual perspectives. *Journal of health and Social Behavior*, 46(2), 205–219.
- Pournaghash-Tehrani, S. S., & Amini-Tehrani, M. (2019). The Impact of Adverse Experiences in Childhood Relationships on the Mental Health of University Students. *Iranian Journal of Health Education and Health Promotion*, 7(2), 231–244.
- Reiss, F. (2013). Socioeconomic inequalities and mental health problems in children and adolescents: a systematic review. *Social science & medicine*, 90, 24–31.
- Riaz, M., Abid, M., & Bano, Z. (2021). Psychological problems in general population during covid-19 pandemic in Pakistan: role of cognitive emotion regulation. *Annals of medicine*, 53(1), 189–196.
- Shonkoff, J. P., Garner, A. S., Child, C. o. P. A. o., Family Health, C. o. E. C., Adoption,, Dependent Care, Developmental, S. o., . . . Wood, D. L. (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics*, 129(1), e232–e246.
- Silva, C., Moreira, P., Moreira, D. S., Rafael, F., Rodrigues, A., Leite, Â., . . . Moreira, D. (2024). Impact of Adverse Childhood Experiences in Young Adults and Adults: A Systematic Literature Review. *Pediatric Reports*, 16(2), 461–481. doi:10.3390/pediatric16020040
- Sindhura, B. K. S., & J, G. K. (2025). A bibliometric analysis of scientific literature on adverse childhood experiences (2004–2024). *Cambridge Prisms: Global Mental Health*, 12, e60. doi:10.1017/gmh.2025.10009
- Slopen, N., Shonkoff, J. P., Albert, M. A., Yoshikawa, H., Jacobs, A., Stoltz, R., & Williams, D. R. (2016). Racial disparities in child adversity in the US: Interactions with family immigration history and income. *American Journal of Preventive Medicine*, 50(1), 47–56.
- Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014). Resilience definitions, theory, and challenges: interdisciplinary perspectives. *European journal of psychotraumatology*, 5(1), 25338.
- Stallman, H. M. (2010). Psychological distress in university students: A comparison with general population data. *Australian psychologist*, 45(4), 249–257.
- Taylor, S. E., & Stanton, A. L. (2007). Coping resources, coping processes, and mental health. *Annu. Rev. Clin. Psychol.*, 3(1), 377–401.

Teicher, M. H., Samson, J. A., Anderson, C. M., & Ohashi, K. (2016). The effects of childhood maltreatment on brain structure, function and connectivity. *Nature reviews neuroscience*, 17(10), 652–666.