

Examining the Relationship Between Adverse Childhood Experiences, Empathy, and Altruism Among Young Adults

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ABSTRACT

Adverse childhood experiences (ACEs), which include incidents such as neglect and abuse, can have long-term consequences for both physical and psychological well-being throughout adulthood. According to study, people who have had negative childhood experiences frequently struggle with interpersonal skills and self-esteem, which can lead to difficulties in relationships and increased aggressive tendencies later in life. With a sample size of 150 participants, comprising 86 females and 64 males, this study looks into the relationship between Adverse childhood experiences (ACEs), empathy, and altruism in young adults, with a focus on gender disparities. The Adverse Childhood Experience (ACE) questionnaire was used to measure participants' exposure to childhood adversity. Empathy and altruistic tendencies were assessed using the Toronto Empathy Questionnaire (TEQ) and Self-Report Altruism Scale (SRAC). This study uses statistical methods, including correlation analysis and T-tests, to investigate potential relationships between Adverse childhood experiences, Empathy, and Altruism, as well as gender variations in these relationships. The study's findings suggested that there were no substantial gender disparities in Adverse childhood experiences (ACEs), but female participants displayed higher levels of Empathy. However, there were no considerable variations between genders in terms of altruistic behaviours. The study revealed a positive correlation between Empathy and Altruism, but Adverse childhood experiences showed no substantial association with either Empathy or Altruism.

Keywords: *Altruism, Young Adults, Gender, Helping, Empathy, Prosocial, Childhood Adversity*

According to World Health Organization “Childhood adversity refers to potentially traumatic events that occur in childhood and/or adolescence and can be detrimental to health and wellbeing.” According to a number of researchers, Adverse childhood experiences (ACEs) are prevalent in a significant portion of the population. Subjects who have had adverse childhood experiences are more likely to be exposed to various types of violence. Many authors discuss how a history of childhood adversity, such as sexual, emotional, or physical abuse, incarcerated household members, family mental illness or suicide, physical or emotional neglect, household substance abuse, and parental separation or divorce, can affect emotional and social functioning, health, delinquency, and psychopathology. The circumstances in which a child grows in has a significant impact on

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Received: April 17, 2024; Revision Received: April 29, 2024; Accepted: May 03, 2024

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their growth and development, and it can be strongly influenced by unfavourable experiences they may encounter during their lifetime. Research on the historical adversity faced by children has expanded in recent years to better understand and identify the long-lasting effects of these experiences on their lives.

Adverse childhood experiences, often referred to as ACEs, are stressful events that take place before an individual reaches the age of 18. These experiences may include instances of abuse, neglect, or any other disruptive events that occur within the home environment. These experiences can have a lasting impact, and the more Adverse childhood experiences a child experiences, the greater the risk of negative outcomes. Adverse childhood experiences (ACEs) are shockingly common, with research indicating that a significant proportion of people in the United States, ranging from 60% to 80%, have experienced at least one type of ACE during their crucial growth years (ages 1-17). Furthermore, of the same population, about one in six persons stated that they had four or more adverse childhood events in their childhood. Adverse childhood experiences can impact any child under the age of 18 and tend to be more prevalent among specific demographic groups, such as girls or children assigned female at birth, racial or ethnic minority communities, children facing socioeconomic challenges, those with parents or caregivers grappling with stress, and those with family members or friends diagnosed with substance use disorders or mental health conditions.

Trauma may have a substantial influence on a person's development and well-being at any stage of life, but it can be especially severe when it occurs during childhood. This is because childhood trauma often occurs during critical psychosocial and biological developmental stages, which can result in long-lasting effects that persist into adulthood. While childhood trauma has been linked to a variety of unfavourable health consequences, there is also evidence that it can promote beneficial growth, such as enhanced compassion and prosocial behaviour. Despite the amount of studies on the harmful repercussions of trauma, there has been an increasing awareness of trauma's capacity to support post-traumatic growth (Department of Psychology, University of Cambridge, United Kingdom). Traumatic experiences in childhood can have lasting effects on adults, impacting their health, quality of life, and access to opportunities in education and career. Such experiences can cause depression, anxiety, post-traumatic stress disorder (PTSD), phobias, substance use disorders, and even chronic illnesses like cancer and heart disease. People who have had adverse childhood experiences (ACEs) may have a roughly 20-year lower life expectancy than those who have not had any adverse childhood experiences.

Many scientific studies have shown the link between childhood exposure to adverse experiences and long-term health and psychological repercussions. Researchers discovered that traumatic childhood experiences can have a significant influence on a person's general well-being, possibly resulting in the emergence of mental health disorders and physiological health concerns. Adverse childhood experiences (ACEs) are also harmful to a person's social and emotional development. According to studies, adverse childhood experiences can influence interpersonal interactions, increase feelings of loneliness, and contribute to aggressive behaviours.

According to the American Psychological Association, "Empathy refers to understanding a person from their frame of reference rather than one's own, or vicariously experiencing that person's feelings, perceptions, and thoughts." In recent studies, Empathy is typically divided

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into two main types: Affective Empathy involves the emotional response to others' emotions, which includes mirroring their feelings or experiencing stress in response to their fear or anxiety. Cognitive empathy, also known as perspective-taking, is the recognition and understanding of other people's feelings. According to research, those who have endured traumatic events in their childhood have higher levels of empathy than those who have not endured such experiences. However, one of the areas of interest in this field of study is the potential connection between childhood adversity and the development of increased Empathy and Altruism in young adults. It is essential to understand how adverse experiences during childhood could affect empathetic and altruistic tendencies, given their significant impact on adult behavior. Despite increasing recognition of the importance of empathy and altruism in promoting positive social interactions and mental health outcomes, there is a significant gap in the literature regarding the specific relationship between adverse childhood experiences (ACEs) and these prosocial traits, especially when gender differences are taken into consideration.

This research intends to bridge the existing gap by carrying out a statistical analysis to explore the connection between Adverse childhood experiences, Empathy, and Altruism in young adults, with a special emphasis on the potential variations between males and females. Previous studies have shown that individuals who have experienced adverse life events often report higher levels of Empathy and prosocial behavior. However, it remains unclear whether this Empathy is advantageous or detrimental. It is crucial to note that although some literature proposes that adversity over an individual's lifetime can lead to personal growth, there is substantial evidence that highlights the negative consequences of Adverse childhood experiences (ACEs). Empathy is a multifaceted concept that encompasses cognition, emotion, and motivation. It is commonly examined as a concept involving both self and others, focusing on the thoughts, feelings, and actions of others.

Altruism refers to the motivation to alleviate the suffering of others in need and it is essential for social and societal well-being. Childhood adversity has long been acknowledged as a significant factor influencing various psychological and behavioral outcomes in adulthood. A particular area of interest is whether individuals who experienced adversity in their early years exhibit higher levels of Altruism than those who did not encounter such challenges.

Previous research has commonly characterized Altruism as a positive emotion or motivation that should be fostered. Altruism, which is defined as a selfless concern for the well-being of others, holds significant importance in social behaviour and has extensive consequences for both individual and societal prosperity. Examining the connection between childhood adversity and Altruism can provide insights into the factors that contribute to resilience and compassionate behaviour in challenging circumstances. Several studies have found that individuals who experienced significant adversity during their childhood tend to engage more in altruistic behaviours later in life, such as volunteering and assisting those in need.

In summary, the connection between childhood adversity and empathy or altruism is essential for comprehending the influence of early experiences on emotional and behavioural consequences that manifest in adulthood. Delving into these complex connections can reveal important insights into resilience and compassionate behaviours in difficult situations. This study not only enriches our knowledge of human development but also highlights the importance of cultivating Empathy and Altruism to create supportive and nurturing environments for future generations.

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MATERIALS AND METHODS

Purpose

This study seeks to explore how adverse childhood experiences (ACEs) may influence empathy and altruistic behaviour in young adults, with a particular emphasis on potential differences between males and females. Through this investigation, the research hopes to clarify how early life experiences, like trauma or adversity, may affect an individual's ability for empathy and altruism in later life.

Objectives

- To assess the correlation between Childhood Adversity, Empathy and Altruism in young adults.
- To determine whether there is a correlation between Empathy levels and Altruistic behaviours in young adults.
- To explore gender differences on Adverse childhood experiences (ACEs), Empathy, and Altruism.

Hypotheses

- H1: Females experience higher levels of Adverse childhood experiences (ACEs) than males.
- H1: Empathy levels differ drastically between men and women, with women showing higher levels of empathy than men on average.
- H1: Females will engage in more Altruistic behaviours than males.
- H1: A positive correlation exists between Empathy and Altruism among young adults.
- H1: There exists a substantial connection between adverse childhood experiences and altruism.
- H1: There exists a substantial correlation between Adverse childhood experiences and Empathy.

Variables

Following variables were examined in the research,

- **Adverse childhood experiences** – Adverse childhood experiences (ACE) encompass many forms of maltreatment and household dysfunction that may occur throughout a person's first 18 years of life. These experiences include sexual abuse, physical, or psychological, as well as witnessing violence against one's mother and living with persons who battle with substance misuse, mental illness, suicide, or jail. In essence, ACE comprises a broad spectrum of bad experiences during infancy that can have persistent repercussions on an individual's health and overall well-being.
- **Empathy**- Empathy is an emotional process that involves understanding and responding to the emotions of others.
- **Altruism**- Altruism is the selfless care for the welfare of others, demonstrated by actions performed with the aim of assisting others without expecting anything in exchange.
- **Gender**- Female and Male

Sample

The study involved 150 young adults aged between 18 to 25 years, with 64 men and 86 women, who resided in India. Convenience sampling was used to select participants from

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Lucknow, a choice that was practical and accessible, making it easier to recruit those who were available and willing to participate in the research

Research Design

This study used a correlational research approach to investigate the association between adverse childhood experiences (ACEs), empathy, and altruism in young adults, with a particular emphasis on potential gender differences. The correlational methodology allowed researchers to investigate relationships between variables without manipulating them.

Instruments

- 1. Adverse childhood experiences (ACE) Questionnaire:** This questionnaire was developed by Vincent J. Felitti, and Robert F. Anda in the 1990s, and is a widely recognized tool for evaluating individuals' exposure to various types of childhood adversities. This standardized questionnaire consists of 10 items that delve into physical, emotional, and sexual abuse, as well as neglect, and household dysfunction such as substance abuse, domestic violence, and mental illness. The Adverse childhood experiences (ACE) Scale is highly reliable, with Cronbach's alpha scores consistently exceeding 0.70. Furthermore, it has high content validity, encompassing a broad spectrum of negative experiences. Significant correlations with a number of health and social outcomes confirm criterion validity, while factor analysis supports construct validity.
- 2. Toronto Empathy Questionnaire (TEQ):** R. Nathan Spreng, Brian Levine, Raymond A. Mar, and Margaret C. McKinnon developed the Toronto Empathy Questionnaire (TEQ), which is used in this study. It is a 16-item scale that measures empathy largely as an emotional activity. Multiple investigations have shown that the TEQ is reliable and valid, with good test-retest reliability and internal consistency.
- 3. Self-Report Altruism Scale:** The study utilised the Self-Report Altruism Scale (SRA-Scale), developed by Rajesh Khanna, Poonam Singh, and J. Philippe Rushton. This scale is a framework for individuals to self-report their engagement in altruistic behaviours across various scenarios. The scale comprises 20 statements, prompting respondents to indicate the frequency of their altruistic actions using response categories ranging from "never" to "very often." The scale demonstrated a high level of split-half reliability, internal consistency, and test-retest reliability, indicating that it is stable over time.

Procedure

A total of 150 individuals, comprised of 86 females and 64 males, were selected using the convenience sampling method. Each participant was given a questionnaire and instructed to complete it truthfully. Before administering the questionnaire, participants were informed about the study's purpose and procedures. Demographic information, such as name, age, gender, educational qualification, occupation, and contact details, was gathered from each participant. To participate in the study, all subjects gave consent. After that, the acquired data was analysed to determine the relationships between the variables being investigated.

Ethical Considerations

The ethical guidelines that governed this research were getting participants' informed consent, protecting the privacy and confidentiality of the information gathered, limiting potential risks, honouring participants' autonomy, optimizing benefits, and upholding

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transparency and integrity. These principles were implemented to protect the rights, welfare, and privacy of the participants throughout the entire research process.

RESULTS

The data collected was subjected to statistical analysis, which comprised conducting t- tests and correlation analyses to investigate the relationship between the variables.

t- test

Table 1: Gender Disparities in Adverse childhood experiences

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Adverse Childhood Experience	Equal variances assumed	0.358	0.550	-1.437	148	0.143	-0.47093	0.31977
	Equal variances not assumed			-1.470	134.888	0.144	-0.47093	0.32040

The sample is homogenous

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Adverse Childhood Experience	Male	64	1.2500	1.95180	0.24398
	Female	86	1.7209	1.92599	0.20768

The research suggests that there is no considerable variation in adverse childhood experiences between genders, as indicated by non-significant p-values (>0.05). While female individuals have slightly higher mean scores, the discrepancy is not statistically significant, casting doubt on its practical importance.

Table 2: Gender Disparities in Empathy Levels

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Empathy	Equal variances assumed	2.183	0.142	-2.353	148	0.020	-3.42551	1.45597
	Equal variances not assumed			-2.335	131.848	0.021	-3.42551	1.46727

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The sample is homogenous

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Empathy	Male	64	41.6094	9.08272	1.13534
	Female	86	45.0349	8.61933	0.92945

The study suggests that there exists a notable difference in empathy levels between genders, with females displaying higher levels than males. The results of both tests indicate a statistical significance, as demonstrated by the substantial mean difference and standard error values, with p-values less than 0.05. Therefore, the findings imply a notable gender disparity in empathy levels within the sampled population.

Table 3: Gender Disparities in Altruism

		Levene's Test for Equality of Variances		t-test for Equality of Means		Sig. (2-tailed)	Mean Difference	Std. Error Difference
		F	Sig.	t	df			
Altruism	Equal variances assumed	1.156	0.284	1.956	148	0.052	4.31468	2.20621
	Equal variances not assumed			1.995	144.107	0.048	4.31468	2.16329

The sample is homogenous

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Altruism	Male	64	71.5938	12.32203	1.54025
	Female	86	67.2791	14.08683	1.51902

The research suggests a possible difference in altruism levels between genders, with males showing slightly higher scores on average compared to females. However, both tests' p-values (>0.05) show that the disparity cannot be considered statistically significant.

Table 4: Correlation Analysis of Adverse childhood experiences, Empathy, and Altruism among Males

		Adverse Childhood Experience	Empathy	Altruism
Adverse Childhood Experience	Pearson Correlation	1	-0.117	-0.104
	Sig. (2-tailed)		0.357	0.414
	N	64	64	64
Empathy	Pearson Correlation	-0.117	1	.312*
	Sig. (2-tailed)	0.357		0.012
	N	64	64	64
Altruism	Pearson Correlation	-0.104	.312*	1
	Sig. (2-tailed)	0.414	0.012	
	N	64	64	64

* Correlation is significant at the 0.05 level (2-tailed).

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The findings from the correlation analysis suggest that among males, there is no notable connection between adverse childhood experiences and either empathy or altruism. Nevertheless, there is a substantial positive correlation between empathy and altruism, indicating that males who display higher levels of empathy are more likely to exhibit altruistic behaviour to a greater extent.

Table 5: Correlation Analysis of Adverse childhood experiences, Empathy, and Altruism among Females

		Adverse Childhood Experience	Empathy	Altruism
Adverse Childhood Experience	Pearson Correlation	1	0.115	0.112
	Sig. (2-tailed)		0.290	0.304
	N	86	86	86
Empathy	Pearson Correlation	0.115	1	.392*
	Sig. (2-tailed)	0.290		0.000
	N	86	86	86
Altruism	Pearson Correlation	0.112	.392*	1
	Sig. (2-tailed)	0.304	0.000	
	N	86	86	86

* Correlation is significant at the 0.01 level (2-tailed).

There is a small, negligible correlation between negative childhood events and empathy/altruism in females. Nonetheless, there is a noticeable and somewhat positive correlation between altruism and empathy, indicating that greater altruistic behaviour is linked to elevated empathy levels.

DISCUSSION

This study intended to explore the connection between adverse childhood events, altruism, and empathy in young adults, taking into account potential gender differences. Through this investigation, the research aimed to enhance our understanding of how early life adversities might impact individuals' empathetic abilities and altruistic tendencies later in life, while also considering variations between genders within these constructs.

The study employed a correlational research design, examining the connections between Adverse childhood experiences, Empathy, and Altruism without manipulating the variables. This approach enabled the exploration of natural associations between these factors in a real-world context. The sample comprised 150 young adults aged 18 to 25, including 64 males and 86 females, recruited through convenience sampling from Lucknow, India. While convenient, this sampling method has limitations in terms of its representativeness and generalizability to broader populations.

To assess childhood adversity, the study used the validated Adverse Childhood Experiences (ACE) Questionnaire, and the Toronto Empathy Questionnaire (TEQ) to measure empathy, with a focus on its emotional aspect. The Self-Report Altruism Scale (SRA-Scale) was used to assess altruistic behaviours among individuals in a variety of circumstances. These tools demonstrated high reliability and validity. Participants were informed about the study's objectives, gave informed consent, and answered truthfully. Demographic data was gathered to contextualise the findings.

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Afterward, a series of statistical tests were performed to investigate the connections and disparities between the variables, including t-tests and correlation analyses. T-tests were utilized to determine if there were substantial variations in Adverse childhood experiences, Empathy, and Altruism among the male and female participants. Pearson correlation coefficients were calculated to examine the linear relationship and direction between Adverse childhood experiences, Empathy, and Altruism in each gender group. These tests aimed to uncover any potential patterns or differences in the associations between variables based on gender.

The study's main objective was to contribute to our understanding of how early life adversities affect empathetic capacities and altruistic behaviours among young adults, taking into account gender variations within these constructs. The research findings provide insight into the intricate connection between Adverse Childhood Experiences (ACEs), Empathy, and Altruism among young adults, taking into account the distinctions between genders. The initial hypotheses aimed to investigate these connections and evaluate potential disparities between males and females. The findings provide valuable insights into how early life experiences can shape socio-emotional outcomes later in life, particularly concerning Empathy and altruistic behaviours.

Nevertheless, the study found no statistically significant differences in ACE levels across male and female individuals, defying Hypothesis 1, which predicted that females would report more incidents of adverse childhood experiences compared to males. Table 1 displays that the statistical analysis revealed a non-significant difference between males (1.26 +- 1.95) and females (1.72 +- 1.93) regarding Adverse childhood experiences ($t(148) = -1.473$, $p = 0.143$). This contradicts previous research indicating gender disparities in ACE prevalence, such as Felitti et al. (1998), suggesting a need for further investigation into the cultural and contextual factors influencing Adverse childhood experiences. Various factors may explain the conflicting results. For instance, societal expectations of masculinity may discourage males from openly discussing their Adverse childhood experiences, leading to underreporting. This reluctance to share vulnerability or seek assistance may skew the data, masking any differences between genders in ACE prevalence. Additionally, social desirability bias may compel male participants to minimize their adverse experiences, fearing the societal stigma associated with discussing trauma. Furthermore, cultural norms dictating emotional expression and help-seeking behaviour may influence participants' willingness to disclose Adverse childhood experiences, particularly within the specific cultural context of the study. These interconnected factors contribute to a multifaceted dynamic that affects how traumatic experiences are reported by both males and females.

According to the results, women displayed higher levels of empathy than men, as shown in Table 2. The statistical analysis found significant differences in empathy levels amongst female and male individuals ($t(148) = -2.353$, $p = 0.02$). Male participants showed lower levels of empathy (41.61 +- 9.08) than their female counterparts (45.03 +- 8.62). This finding aligns with existing literature suggesting that women typically score higher on Empathy measures compared to men (Baron-Cohen & Wheelwright, 2004). The observed disparity in Empathy levels between genders may be attributed to societal norms and gender roles that shape emotional development. Girls are often encouraged to be more empathetic from a young age, while boys may receive messages emphasizing stoicism. Additionally, biological factors and cultural norms could also play a role, with women potentially having more opportunities for emotional expression and connection within their social

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environments. These various influences likely contribute to the higher levels of Empathy observed among female participants.

The results in Table 3 illustrate the outcomes of an independent samples t-test examining gender differences in altruistic behaviours among young adults. The mean Altruism scores for male and female participants are showcased, with males exhibiting a higher mean score (71.5938) compared to females (67.2791). However, the statistical analysis revealed that this difference is not statistically significant, with p-values surpassing the conventional threshold of 0.05 ($p = 0.052$ for equal variances assumed and $p = 0.048$ for equal variances not assumed). Despite the numerical discrepancy favouring males, the lack of statistical significance suggests that this observed difference may have arisen by chance rather than indicating a genuine gender disparity in Altruism levels. Possible explanations for the absence of significant gender disparities in Altruism could stem from societal norms and expectations. While stereotypes and cultural perceptions may assume females to be inherently more altruistic, individual variations within each gender may overshadow broad gender differences. Additionally, factors such as upbringing, socialization, and personal experiences likely exert significant influences on the development of altruistic behaviours, potentially outweighing any intrinsic gender-based predispositions. Furthermore, conflicting findings in existing literature regarding gender and Altruism underscore the need for further research to elucidate the complexities surrounding this relationship (Gahlot and Patil, 2022). Table 4 and 5 indicate a positive relationship between Empathy and Altruism among young adults. Upon examining the correlation tables for both males and females, it becomes evident that there is a positive relationship between Empathy and Altruism. Specifically, for males, the correlation coefficient is 0.312, with a significance level of 0.012 (significant at $p < 0.05$), while for females, it is stronger at 0.392, with a significance level of 0.000 (significant at $p < 0.01$). This suggests that individuals who score higher on Empathy tend to also exhibit higher levels of altruistic behaviour. These findings align with the concept that Empathy plays a crucial role in fostering altruistic tendencies (Batson et al., 2007). Moreover, they support the Empathy-Altruism hypothesis, which posits that Empathy, characterized by the ability to understand and share the feelings of others, leads to altruistic behaviour - selfless concern for the well-being of others. According to this hypothesis, individuals experiencing Empathy towards someone in need are more inclined to engage in helping behaviours, driven by a genuine desire to alleviate the other person's suffering, even at a personal cost.

The correlation analysis results show no significant relationship between Adverse childhood experiences and Altruism for both males and females, as indicated by p-values surpassing 0.05 (0.414 for males and 0.304 for females). This implies that the available data does not provide compelling evidence of a connection between Adverse childhood experiences and altruistic behaviour among young adults. Similarly, there is no significant correlation between Adverse childhood experiences and Empathy for both males ($p = 0.357$) and females ($p = 0.290$). These findings suggest that experiencing adverse events during childhood does not necessarily predict one's level of Empathy as a young adult, based on the data collected.

Several factors may contribute to these outcomes, such as socialization processes, inherent personality traits, coping mechanisms, resilience, interpersonal relationships, cultural influences, and study limitations. A positive upbringing, inherent personality traits, and resilient coping mechanisms could potentially foster Empathy and Altruism despite Adverse

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childhood experiences. Additionally, supportive relationships and cultural norms promoting prosocial behaviour may further bolster these traits. However, individual differences and contextual factors may also play a role in shaping the nuanced relationships observed, highlighting the complexity of understanding Empathy and Altruism in the context of early life experiences.

CONCLUSION

This study investigates the effects of early life experiences, particularly Adverse Childhood Experiences (ACEs), on the socio-emotional growth of young adults, concentrating on Empathy and Altruism. Although there is no significant difference in ACE prevalence between genders, females exhibit higher levels of Empathy. However, a gender gap is not apparent in Altruism. A strong positive correlation is found between Empathy and Altruism, emphasizing the crucial role of Empathy in fostering altruistic actions. The findings stress the importance of implementing early intervention programs to cultivate Empathy and encourage pro-social behaviours, regardless of gender. Further examination of cultural influences and long-term effects of ACEs on empathy and altruism is necessary, suggesting potential changes over time. In essence, this research contributes to comprehending the intricate link between childhood experiences, empathy, and altruism, advocating for comprehensive approaches to support the emotional and social well-being of young adults.

Limitations

- The findings of a small sample may not fully represent the total population, which could restrict their generalizability.
- The use of convenience sampling may lead to a decrease in the statistical strength of a study, resulting in an increased likelihood of Type II errors and compromising the dependability of the findings.
- Self-report measures for ACEs, Empathy, and Altruism could introduce biases like recollection and social desirability, potentially compromising data accuracy.
- Failure to control for confounding variables such as socioeconomic status and cultural background may bias the connection among Adverse Childhood Experiences, Empathy, and Altruism in the results.
- Limited qualitative data collection could impede understanding the nuanced experiences and motivations related to ACEs, Empathy, and Altruism among young adults.

Directions For Future Research

- Expand and diversify sample pools to gain richer insights into the interplay between ACEs, Empathy, and Altruism.
- Evaluate the long-term consequences of ACEs on empathy and altruism through longitudinal study.
- Investigate whether adversity in childhood is connected with increased altruism and empathy.
- Incorporate qualitative data collection methods to attain a more profound comprehension of the experiences and motivations underlying these phenomena.
- Examine protective factors, such as social support and resilience, in mitigating the impact of ACEs on socio-emotional development.

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Acknowledgment

The researchers extend their heartfelt appreciation to everyone who participated in the study and aided in the smooth progression of the research process.

Conflict of Interest

Researchers reported no potential conflict of interests.

How to cite this article: Rastogi, H. & Kewalramani, S. (2024). Examining the Relationship Between Adverse Childhood Experiences, Empathy, and Altruism Among Young Adults. *International Journal of Indian Psychology*, 12(2), 674-688. DIP:18.01.067.20241202, DOI:10.25215/1202.067