

Relationship Between Adverse Childhood Experiences (ACE's) and Adult Introversiion-Extraversion Trait

Rebecca.R^{1*}, Dr. Lakshmi Arun²

ABSTRACT

The study aimed to examine the relationship between Adverse Childhood Experiences (ACEs) and adult introversiion-extraversion trait of 60 participants through the use of a questionnaire. It also aims to explore if there were gender differences with respect to the personality traits. After statistical analysis, the results showed that there was no significant relationship between Adverse Childhood Experiences and an individual's personality traits of introversiion and extraversion. There by proving the 1st hypothesis. It was also found that there was a significant difference in gender with respect to the personality traits. This finding rejects the 2nd null hypothesis which stated that there will be no significant difference between genders on personality traits. Further, this study also rejects the findings of similar studies which have shown that the Adverse Childhood Experiences influences personality traits in adults.

Keywords: *Relationship Between Adverse Childhood Experiences (ACE's), Adult Introversiion-Extraversion Trait*

Human beings are complex in nature. Each individual is different from the other in many ways. It is very difficult to understand each person's thinking and action. They may have different feelings, thoughts, emotions and memories. The way one person feels in a situation might not be the same way another person feels in the same situation. The role of environment as well as one's biological makeup is useful in determining a person's thinking, action etc.

Every individual during their developmental period, grow by observing, learning and adapting to their environment. The role of nature versus nurture has long been a debatable topic in explaining any phenomenon. While the issue is still being debated, the role of childhood experiences cannot be neglected to determine if the individual will adaptive or maladaptive in future.

Childhood experiences play a major role in an adult's personality. They tend to have adverse effect on a person's health and well-being later in their life. But the fact if childhood experiences determine a person's personality type is unknown.

¹MSc., Mount Carmel College Bangalore, India

²Assistant Professor, Mount Carmel College, Bangalore, India

*Corresponding Author

Received: August 03, 2021; Revision Received: September 15, 2021; Accepted: September 30, 2021

Relationship Between Adverse Childhood Experiences (ACE's) and Adult Introversion-Extraversion Trait

Hence the purpose of this study was to study the relationship between adverse childhood experience and its impact on adult personality traits of introversion and extraversion. Childhood memories and events are very important in formulating the personality of an individual. But do they influence an individual's personality is not widely researched upon.

Adverse Childhood Experience (ACE)

Adverse Childhood Experience (ACE), are traumatic events that occur before a person reaches 18 years of age. It includes different forms of abuse, neglect and household dysfunction. A person with greater number of ACE, is said to have significant impact in various phases of life.

Risk Factors for Adverse Childhood Experiences:

- Low socio-economic status or poverty
- Unemployment
- Deprived community
- Social isolation-
- Parenting styles and capability including age of parents and the family structure
- Household adversity

Personality

People often use the word 'personality' while defining themselves or others. First one must understand the meaning of it. The word 'personality' is derived from the Latin word '*persona*' meaning '*mask*', which refers to a melodramatic mask worn by performers in order to both venture diverse roles or disguise their identity.

Characteristics of Personality

- Consistent
- Psychological and physiological
- Behavior and events
- Multiple expressions

Biological determinants of personality- several researchers agree that there are specific neurobiological mechanisms underlying even the most complex human actions. They also have the same opinion that certain ecological factors interact with inherited factors to shape character.

Preparatory to delving into the study on "Adverse Childhood Experience and Personality", it is important to understand the existing literature. This chapter attempts to deal with the same by organizing the existing work into the following broad headings:

- Foundations of the ACE study
- Negative effects of ACE (physical and mental)
- Prevalence of ACEs and related socio-demographics around the world
- Personality development and stability
- Adverse childhood experience and personality

UE Ajake, NN Bisong, A Jamabo, (2013) studied the relationship between child abuse and trait of introversion- extraversion among senior secondary students. The data was collected from 2000 senior secondary class students in Cross River State, Nigeria. The research focused on four dimensions of child abuse- physical, emotional, sexual and childhood

Relationship Between Adverse Childhood Experiences (ACE's) and Adult Introversion-Extraversion Trait

neglect. Contingency Chi Square was used to test the hypothesis of introversion-extraversion trait at 0.05 alpha level of significance. The results showed that childhood abuse has significant influence on introversion- extraversion characteristics among senior secondary students. Thus, students who were abused were more likely to become introverts than those who did not experience abuse.

Marc Eric S. Reyes et al,(2018) investigated on the link between Adverse Childhood Experiences and Five Factor Model Traits among Filipinos was conducted on 717 Filipinos aged 18 to 87. The participants were selected through convenience sampling totaling 467 females and 250 males. The scales used were- ACE-IQ and NEO-FFI-3. The results showed that all Five Factor Model (FFM) traits were influenced by Adverse Childhood Experiences. ACEs increased neuroticism (decreased emotional stability), decreased extraversion (increased introversion), decreased conscientiousness (increased disinhibition) and decreased agreeableness (increased antagonism). However, for openness to experience, the relationship was complex. While some ACEs were positively correlated with openness, others were negatively correlated, showing no significant relationship between openness and total ACE-IQ score. ACEs thus affect the overall personality of an individual's personality pathology.

In 2020, Jessica M Grusnick et al, conducted a study to find out the associations between ACEs and personality, emotions and affect. Three waves of data was collected from Midlife Development in the United States (MIDUS) study was used. ACE was the primary independent correlate; demographic variables and survey wave were covariates; outcome variables were personality traits, generativity and affect. Data was collected from 6323 individuals with a past history of ACE. The results proved that ACE was significantly related with neuroticism and conscientiousness. All ACEs were positively associated with neuroticism and negatively associated with conscientiousness. Abuse was associated with neuroticism, conscientiousness and openness. ACEs were also found to be associated with affect.

The above studies state the effectiveness of ACEs on physical and mental well being. Hence it is very important to take precautionary care to avoid adverse experiences in childhood in order for individuals to lead a physically and mentally healthy life. Early intervention and prevention can help in reducing the future harmful consequences in individuals.

METHODOLOGY

Rationale of the Study

The intention of this study is to explore the relationship between Adverse Childhood Experience and adult Introversion-Extraversion trait. It also tries to identify if there are gender differences between male and female with respect to these personality traits.

Objectives

Primary- To administer the adverse childhood experience questionnaire and personality inventory to the subjects and analyze if there is significant relationship between ACEs and adult Introversion-Extraversion trait.

Secondary- To see if there is significant difference in adult personality based on gender.

Relationship Between Adverse Childhood Experiences (ACE's) and Adult Introversion-Extraversion Trait

Operational Definitions

- **Adverse Childhood Experience-** Adverse childhood experiences, or ACEs, are potentially traumatic events that occur in childhood: 0-17 years (Centers for Disease Control and Prevention)
- **Introversion-** "The introvert is distinguished from the extravert by the fact that he does not, like the latter, orient himself by the object and objective data, but by subjective factors." (Carl Jung 1923)
- **Extraversion-** "If a man thinks, feels, acts, and actually lives in a way that is directly correlated with the objective conditions and their demands, then he is extraverted," (Carl Jung 1923)

Hypothesis

- There is no significant relationship between Adverse Childhood Experiences and adult introversion-extraversion personality traits.
- There is no significant difference in personality traits based on gender

Variables

- Independent variable: Adverse Childhood Experience
- Dependent variable: Introversion- Extraversion trait
- Relevant demographical variable: Gender

Research Design

The study undertaken adopts a between group research design where the participants were selected through snowball sampling technique and were separated into two groups based on their scores: with ACEs and without ACEs. The scores of the two groups were analyzed and compared. The study also examines the difference in expressed personality traits between males and females.

Participants

SAMPLE- through the process of snowball sampling, a sample of 60 participants within the age group 18-25 were chosen. The participants were divided into two groups, with ACEs score 2 and below and with ACEs score 3 and above. Each group consisted of 30 members. The 30 members of each group were further sub-divided into 15 males and 15 females.

Inclusion Criteria

- Individuals within the age group 18-25
- Individuals with ACE scores of 2 and below
- Individuals with ACE scores of 3 and above

Exclusion Criteria

- Individuals below 18 years and above 25 years

Procedure

The participants were informed about the nature of the study prior to the data collection. A Google form of the Adverse Childhood Experience (ACEs) questionnaire was sent to them. The data was sent out through social media posts and referral from friends to other friends. Formal consent was taken from the participants before collecting data. They were also asked to fill the demographic details to further administer the personality scale to the selected individuals. The participants were informed beforehand that the questions from the ACE

Relationship Between Adverse Childhood Experiences (ACE's) and Adult Introversion-Extraversion Trait

scale were about certain traumatic childhood experiences. They were informed that they were free to discontinue from answering the questionnaire anytime they felt uncomfortable with any of the questions. After they were made comfortable with answering the questionnaire, the scale was administered.

The ACEs questionnaire was used as a screening device to select participants and divide them into two groups 1) who had obtained a score of 2 and below on the ACE questionnaire and 2) people who had obtained a score of 3 and above on the same. After their data was analyzed, 60 participants were selected: 30 with ACEs 2 and below and 30 with ACEs 3 and above.

These selected participants were further administered the Eysenck Personality Inventory (EPI) to measure their level of introversion-extraversion. After the respondents had finished answering, the responses were scored and interpreted according to the norms.

The scores of the two groups were then analyzed to check if these adverse experiences of childhood have any relationship with the personality traits of introversion-extraversion that develops as they mature. The gender differences are also examined to check if there is any significant difference between male and female in the expressed personality traits.

Tools

- **ACE questionnaire-** the questionnaire was developed by Centers for Disease Control and Prevention (CDC) and Kaiser Permanente in the year in the year 1995. The Adverse Childhood Experience (ACE) Questionnaire is a 10-item self-report measure developed for the ACE study to identify childhood experiences of abuse, violence, neglect, having a family member attempt or die by suicide, substance abuse, mental health problems, imprisoned family member or parental separation. Each 'yes' response gets a score of 1. Higher the score indicates the more ACEs experienced by the person and greater the damage. It has adequate internal consistency (Cronbach's alpha = .88).
- **Eysenck Personality Inventory (EPI)** - was developed by Hans Jürgen Eysenck and Sybil Bianca Giuliett Eysenck in the year 1963. This is an inventory consisting of 57 statements to assess the personality traits of a person, namely Extraversion/Introversion and Neuroticism/Stability. The scoring for EPI is done with reference to norms. The 'E' score is out of 24 and measures how much of an introvert a person is. The middle score for extraversion trait is 12, below which indicates how much of an introvert a person is and above 12 indicates how much of an extravert they are. Lower their scores, suggest their level of introversion and higher the scores suggest their level of extraversion The scale has been tested to have a good reliability of 0.82

Statistical Analysis

The data was subjected to rigorous data analysis through the IBM Statistical Package for Social Sciences (SPSS) 16. Through this software, all statistical computations were made and the data was tested for normality after which appropriate descriptive and inferential procedures were used.

Ethical Considerations

- The ethics prescribed by American Psychological Association (APA) were followed.

Relationship Between Adverse Childhood Experiences (ACE's) and Adult Introversion-Extraversion Trait

- Consent was taken from the participants before administration of the scales.
- The participants were informed about the nature and purpose of the study beforehand.
- The confidentiality of the responses was ensured.
- The participants were treated with respect, dignity and fair treatment.
- The participants were also safeguarded from any form of exploitation.
- The participants were informed about their right to withdrawal from the study whenever they wish to.
- The study is non-invasive in nature and no direct or indirect harm was caused.

RESULTS AND DISCUSSION

The research study aimed at understanding the relationship between Adverse Childhood Experience (ACEs) and an adult's personality traits of introversion and extraversion on 60 participants, who were divided into two groups:

- 1) With ACE scores 2 and below
- 2) With ACE scores 3 and above

It also aimed at exploring if there are gender differences between male and female with respect to the expressed personality traits. It was hypothesized that there is no significant relationship between ACEs and adult introversion-extraversion traits. And also, that there would be no significant difference between males and females on the personality trait scores. Statistical analysis was run on the data and the results are presented below.

- The two variables, ACE and personality was tested for normality of distribution. The Shapiro-Wilk test was used to check the same.
- The two variables, ACE and personality was tested for normality of distribution. The Shapiro-Wilk test was used to check the same.

Table 1: shows the correlation statistics of ACEs and personality

Correlations				
			ACES Score	Personality
Spearman's rho	ACES Score	Correlation Coefficient	1.000	-.207
		Sig. (2-tailed)	.	.113
		N	60	60
	Personality	Correlation Coefficient	-.207	1.000
		Sig. (2-tailed)	.113	.
		N	60	60

The correlation test was run to see if ACEs were correlated with personality. Spearman's rho was considered to check the level of significance. The selected 60 participants with ACE score 2 and below and 3 and above, were given the Eysenck Personality Inventory to check if there was any significant relationship between the two. From the above table I can be seen that the level of significance for ACEs and personality is .113. This is greater than the p value of 0.05, which indicates that there is no significant relationship between ACEs and personality.

Table 2 shows the group statistics for males and females on personality

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
Personality	Male	30	12.47	2.662	.486
	Female	30	10.57	3.945	.720

The group statistics for personality can be seen in the above table. Males have a mean score of 12.47 and females have a mean score of 10.57. This table indicates that there is a significant difference between males and females on personality traits. Males are inclined more towards the extraversion side while females have shown to be more on the introvert side.

Table 3 show s the independent samples test for male and female on personality

Independent Samples Test											
		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper	
Personality	Equal variances assumed	4.438	.039	2.187	58	.033	1.900	.869	.161	3.639	
	Equal variances not assumed			2.187	50.870	.033	1.900	.869	.156	3.644	

The above table shows the Levens test for equality of variances. It can be seen that the significance level is .033, which is lesser than the p value of 0.05, hence indicating that it is significant. This means that there is a significant difference between males and females on personality.

The aim of the study was to examine the relationship between Adverse Childhood Experiences and formation of adult introversion-extraversion trait. Adverse Childhood Experiences and personality traits were assessed. From the results, it can be seen that there is no significant relationship between ACEs and an individual's personality traits. It was seen that ACEs do have certain impact on an individual throughout their life span but they do not influence an individual's personality. Hence the first hypothesis was accepted, which suggests that there is no significant relationship between ACEs and adult personality traits of introversion and extraversion.

CONCLUSION

There was no significant relationship between Adverse Childhood Experiences and an individual's personality traits of introversion and extraversion. There by proving the 1st hypothesis.

Relationship Between Adverse Childhood Experiences (ACE's) and Adult Introversion-Extraversion Trait

It was also found that there was a significant difference in gender with respect to the personality traits. This finding rejects the 2nd null hypothesis which stated that there will be no significant difference between genders on personality traits.

This study also rejects the findings of similar studies which have shown that the Adverse Childhood Experiences influences personality traits in adults.

Implications

Since the relationship between ACEs and personality is not widely researched upon, this study adds to the limited existing literature conducted on the same topic. Studying their relationship could help us understand normal personality of an individual as well as understand disturbances in personality which may even lead to maladaptive behavior. It also helps us understand the importance of preventing ACEs to build a positive personality as well as a healthier individual. The study has also examined the gender differences in personality traits which could be useful in understanding various underlying differences between males and females.

Recommendations

Keeping in mind the limitations of the study, future studies can try to reduce these limitations and improvise on the methodology. Including a larger sample from diverse population can be useful in generalizing the results of the study to a greater extent. Since introversion-extraversion is just one dimension of personality, Studies including a variety of other personality traits on the same topic can be helpful in acquiring a wholesome understanding of an individual. This study does not indicate which form of maltreatment or abuse is related to the personality traits, hence future studies can focus on that aspect.

REFERENCES

- Ajake, Uchenna & Bisong, Nonso & A., Jamabo. (2009). Relationship between child abuse and the trait of Introversion- Extroversion among Senior Secondary School Students in Cross River State Nigeria.
- Al-Shawi, A. F., & Lafta, R. K. (2015). Effect of adverse childhood experiences on physical health in adulthood: Results of a study conducted in Baghdad city. *Journal of family & community medicine*, 22(2), 78.
- Al Shawi, A. F., Sarhan, Y. T., & Altaha, M. A. (2019). Adverse childhood experiences and their relationship to gender and depression among young adults in Iraq: a cross-sectional study. *BMC public health*, 19(1), 1-7.
- Briley, D. A., & Tucker-Drob, E. M. (2014). Genetic and environmental continuity in personality development: a meta-analysis. *Psychological bulletin*, 140(5), 1303.
- Campbell, J. A., Farmer, G. C., Nguyen-Rodriguez, S., Walker, R., & Egede, L. (2018). Relationship between individual categories of adverse childhood experience and diabetes in adulthood in a sample of US adults: Does it differ by gender? *Journal of diabetes and its complications*, 32(2), 139-143.
- Damodaran, Deepa & K, Varghese. (2019). The Unveiled Indian Picture of Adverse Childhood Experiences: Socio-Demographic Correlates Among Youth in Kerala. 6. 1248-1257. 10.2139/ssrn.3322512.
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., & Marks, J. S. (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.

Relationship Between Adverse Childhood Experiences (ACE's) and Adult Introversion-Extraversion Trait

- Fletcher, J. M., & Schurer, S. (2017). Origins of adulthood personality: The role of adverse childhood experiences. *The BE journal of economic analysis & policy*, 17(2).
- Fuller-Thomson, E., Baird, S. L., Dhrodia, R., & Brennenstuhl, S. (2016). The association between adverse childhood experiences (ACEs) and suicide attempts in a population-based study. *Child: care, health and development*, 42(5), 725-734.
- Goodwin, R. D., & Gotlib, I. H. (2004). Gender differences in depression: the role of personality factors. *Psychiatry research*, 126(2), 135-142.
- Grusnick, J. M., Garacci, E., Eiler, C., Williams, J. S., & Egede, L. E. (2020). The association between adverse childhood experiences and personality, emotions and affect: Does number and type of experiences matter? *Journal of research in personality*, 85, 103908.
- Hengartner, M. P., Cohen, L. J., Rodgers, S., Müller, M., Rössler, W., & Ajdacic-Gross, V. (2015). Association between childhood maltreatment and normal adult personality traits: exploration of an understudied field. *Journal of Personality Disorders*, 29(1), 1-14.
- Herzog, J. I., & Schmahl, C. (2018). Adverse childhood experiences and the consequences on neurobiological, psychosocial, and somatic conditions across the lifespan. *Frontiers in psychiatry*, 9, 420.
- Hopwood, C. J., Donnellan, M. B., Blonigen, D. M., Krueger, R. F., McGue, M., Iacono, W. G., & Burt, S. A. (2011). Genetic and environmental influences on personality trait stability and growth during the transition to adulthood: a three-wave longitudinal study. *Journal of personality and social psychology*, 100(3), 545.
- Hudson, N. W., & Fraley, R. C. (2015). Volitional personality trait change: Can people choose to change their personality traits? *Journal of personality and social psychology*, 109(3), 490.
- 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.
- Kubzansky, L. D., Martin, L. T., & Buka, S. L. (2009). Early manifestations of personality and adult health: a life course perspective. *Health Psychology*, 28(3), 364.
- Lee, R. D., & Chen, J. (2017). Adverse childhood experiences, mental health, and excessive alcohol use: Examination of race/ethnicity and sex differences. *Child abuse & neglect*, 69, 40-48.
- Levitt, M. (2013). Perceptions of nature, nurture and behaviour. *Life Sciences, Society and Policy*, 9(1), 1-11.
- Lynn, Richard & Martin, Terence. (1997). Gender Differences in Extraversion, Neuroticism, and Psychoticism in 37 Nations. *The Journal of social psychology*. 137. 369-73. 10.1080/00224549709595447.
- Manyema, M., & Richter, L. M. (2019). Adverse childhood experiences: prevalence and associated factors among South African young adults. *Heliyon*, 5(12), e03003.
- Miller, J. R., Cheung, A., Novilla, L. K., & Crandall, A. (2020). Childhood experiences and adult health: the moderating effects of temperament. *Heliyon*, 6(5), e03927.
- Ports, K. A., Holman, D. M., Guinn, A. S., Pampati, S., Dyer, K. E., Merrick, M. T., ... & Metzler, M. (2019). Adverse childhood experiences and the presence of cancer risk factors in adulthood: a scoping review of the literature from 2005 to 2015. *Journal of pediatric nursing*, 44, 81-96.
- Reyes, M. E., Buac, K. M., Dumaguing, L. I., Lapidez, E. D., Pangilinan, C. A., Sy, W. P., & Ubaldo, J. S. (2018). Link between adverse childhood experiences and five factor

Relationship Between Adverse Childhood Experiences (ACE's) and Adult Introversion-Extraversion Trait

- model traits among Filipinos. *IAFOR Journal of Psychology & the Behavioral Sciences*, 4(2), 71.
- Rhee, T. G., Barry, L. C., Kuchel, G. A., Steffens, D. C., & Wilkinson, S. T. (2019). Associations of adverse childhood experiences with past-year DSM-5 psychiatric and substance use disorders in older adults. *Journal of the American Geriatrics Society*, 67(10), 2085-2093.
- Sahle, B. W., Reavley, N. J., Li, W., Morgan, A. J., Yap, M. B. H., Reupert, A., & Jorm, A. F. (2021). The association between adverse childhood experiences and common mental disorders and suicidality: an umbrella review of systematic reviews and meta-analyses. *European Child & Adolescent Psychiatry*, 1-11.
- Schwartz, L. S. (2015). Childhood experiences of introversion: an exploration of navigating social and academic spaces and ways of coping.
- Sonu, S., Post, S., & Feinglass, J. (2019). Adverse childhood experiences and the onset of chronic disease in young adulthood. *Preventive medicine*, 123, 163-170.
- Yöyen, E. G. (2017). Relationship between childhood trauma and personality typology. *Balkan and Near Eastern Journal of Social Sciences*, 3(1), 123-129.

Websites:

- https://www.who.int/violence_injury_prevention/violence/activities/adverse_childhood_experiences/en/
- [https://www.goodtherapy.org/blog/psychpedia/ace-questionnaire#:~:text=The%20Adverse%20Childhood%20Experience%20\(ACE,experiences%20of%20abuse%20and%20neglect.](https://www.goodtherapy.org/blog/psychpedia/ace-questionnaire#:~:text=The%20Adverse%20Childhood%20Experience%20(ACE,experiences%20of%20abuse%20and%20neglect.)
- https://cdn2.sportngin.com/attachments/document/0129/7914/ACEs_Resilience_Questionnaire-McMillan_.pdf
- <https://acestoohigh.com/got-your-ace-score/>
- <https://www.simplypsychology.org/eysenck-inventory.pdf>
- <https://www.joiningforcesforchildren.org/what-are-aces/>
- https://www.aap.org/en-us/documents/ttb_aces_consequences.pdf
- <http://www.instituteofhealthequity.org/resources-reports/the-impact-of-adverse-experiences-in-the-home-on-children-and-young-people/impact-of-adverse-experiences-in-the-home.pdf>
- https://www.cdc.gov/violenceprevention/aces/resources.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fviolenceprevention%2Facestudy%2Fresources.html
- <https://courses.lumenlearning.com/boundless-psychology/chapter/introduction-to-personality/#:~:text=Key%20Points,among%20different%20people%20and%20groups.>
- https://www.euro.who.int/__data/assets/pdf_file/0016/181042/e96750.pdf

Acknowledgement

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Rebecca R. & Arun L. (2021). Relationship Between Adverse Childhood Experiences (ACE's) and Adult Introversion-Extraversion Trait. *International Journal of Indian Psychology*, 9(3), 1992-2001. DIP:18.01.187.20210903, DOI:10.25215/0903.187