

The Influence of Adverse Childhood Experiences on Health-Related Quality of Life

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ABSTRACT

Background: Stressful and traumatic adverse childhood experiences (ACEs) are linked to poor physical and mental well-being in the future. **Objectives:** The present study aimed to investigate the correlation between Adverse Childhood Experiences and Health related quality of Life in Young adults across various states in India. Furthermore, the study intended to look into gender disparities in these variables. **Methods:** This study looked at survey data from 100 people, 50 males and 50 females. The Adverse Childhood Experiences Questionnaire (ACE) created by Felitti et al. (1998) was used to evaluate Adverse Childhood Experiences, and the Short Form Health Survey (Rand, SF-36) developed at RAND as part of the Medical Outcomes Study was used to measure Health Related Quality of Life. Pearson's correlation technique and the t-test were used to evaluate the data. **Results:** Results of independent samples t-test showed gender differences in domains of Health-Related Quality of Life – males scored significantly higher than females. There were no gender disparities in ACE. Pain and general health are negatively correlated with ACE in females at a 0.01 significance level, whereas physical functioning and emotional well-being are negatively correlated with ACE at a 0.05 significance level in males. **Conclusion:** The findings of this research give useful suggestions for understanding the negative effects of ACEs and its impact on health of an individual which can be reduced with early intervention and prevention.

Keywords: Adverse childhood experiences, Health Related Quality of Life, Health

According to the World Health Organization, “Health is a condition of complete physical, mental, and social well-being, not merely the absence of sickness and infirmity” (WHO, 2014). Traumatic and adverse experiences in one’s childhood are commonly linked to psychiatric and physical difficulties in young adults, constituting individuals in the age group of 18-30 (CDC, 2021). (Hogan, Astone 1986).

Adverse childhood experiences (ACEs) can be defined as the traumatic events which occur before age 18 in individuals. Sexual violence, physical abuse, mental abuse, physical neglect, emotional neglect, and household instability are all examples of ACEs (Felitti et al.

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1998). The more ACEs experienced, the greater is the risk for mental health status in the later stage of these individuals (CDC, 2000) (Petruccelli et al, 2019). Theories of Adverse childhood experiences include the Social Ecological Theory which suggests that children develop with multi layered ecosystems which supports the ability to develop and bond, or the Family Stress Theory which defines how the stressors in the family can lead to types of trauma (Bronfenbrenner, 1980) (Hill, 1949). The Bowlby's Attachment Theory believes children with more consistent support, affection and care develop a better social life than others and finally Bandura's Child Development Theory suggests that observation plays a critical role in learning, hence a child living in a toxic environment is risky (Bowlby, 1958) (Bandura, 1977). The following paragraphs will provide more information on the health variable in this research.

Health related quality of life is a multi-dimensional idea that incorporates physical, mental, emotional and social working. There are different types of health which involve mental, physical, spiritual, financial and emotional levels (CDC, 2000). According to anthropologists, there are two categories of illness- Personality and Naturalistic Theory (Good, 1994). In the former, illness is believed to be caused by the intervention of a supernatural being, a human being with special powers while in the latter illness is explained as the balance of body with nature, with more balance, the state of health prevails.(Hahn, 1999).

LITERATURE

A research conducted in youth in eight eastern European nations assessed the relationship between ACEs and health status to obtain results that revealed that one ACE expanded the likelihood of having other ACE which is linked to poor health during life. Individuals with minimum four ACEs were at increased risk of health issues (Bellis 2014). Physical inactivity, overweight or obesity, and diabetes, as well as smoking, heavy alcohol consumption, low self-rated health, cancer, heart disease, respiratory disease, sexual risk-taking, mental ill health, and problematic alcohol and drug use, and interpersonal and self-directed violence were identified with increase in adverse childhood experiences (Hughes et al 2017) (Mersky, Topitzes, and Reynolds 2013) While analyzing gender differences, another research showed that inner family afflictions were related with expanded danger for addictive practices, especially in boys, with women showing a greater number of challenges than men. Exposure to violence were higher in males than in females (El Mhamdi 2021) it also showed males had higher HRQOL than females with them showing significant relationships between the ACEs and psychological disorders (Cambron et al, 2021) (Jörngården, Wettergen and von Essen, 2006) (Cherepanov, Palta, Fryback, & Robert 2010).

Rationale

Physical and emotional abuse, as well as neglect and household dysfunction, are all examples of Adverse Childhood Experiences (ACEs). The Centers for Disease Control and Prevention (CDC) and Kaiser Permanente released a groundbreaking study (Felitti, V.J., et al (1998) that looked at the effect of ACEs on physical and mental health issues in over 17,000 adults. Adults were given a survey asking about ten different types of ACEs and whether or not they had encountered them before the age of 18 (Anda et al., 2008; Felitti et al., 1998). Adults who agreed with four of the ACE categories (ACE score of four or more) were much more likely to suffer from multiple chronic illnesses than adults who did not, like those who scored 4 ACE categories were 2.6 times more likely to have Chronic Obstructive Pulmonary Disease (COPD), when compared to those with 0 ACE categories (Dube et al., 2009). Similar results were found in case of Hepatitis (2.4), sexually transmitted infections

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(2.5) and injection drug use (46.0) (Felitti, 2002; Felitti et al., 1998). Mental health issues like depression and suicidality also were more prevalent in the first group (ACE=>4), with a relative risk of 4.6 and 12.2 (Felitti et al., 1998). Furthermore, further research into ACEs may aid in identifying children at risk for chronic diseases and/or psychological problems later in life.

The disturbing prevalence of aversive childhood experiences (ACEs) in the young population underscores the urgent need for ACEs screening procedures to be implemented across health-care settings. A research in Kerala (Damodaran, 2018) gathered information from 600 young people who were chosen using a multi-stage stratified selection process. The findings revealed that ACEs were extremely common among children (91%) and that more than half of them had been exposed to three or more ACEs. Gender was found to be strongly related with psychological, physical, and sexual abuse in ACE. This emphasizes the importance of ACE preventive initiatives and legislation.

Adverse childhood experiences can lead individuals to have a number of health problems in the future, some young people are at greater risk for negative effects due to ACEs (e.g., chronic illness, posttraumatic stress symptoms) than adults (De Bellis, 2001). Mental health care providers should be aware of the impact ACEs may have on prevention and intervention strategies for these problems. Also, there are various gender differences, like exposure to violence was higher in males than in females and also the study affirmed that openness to such adversities expanded the danger for addictive practices both in male and females by a few creases though some studies convey results didn't differ essentially by sex (El Mhamdi, et al., 2021) (Grigsby et al., 2020). These researches on gender have helped understand the impact of ACE and health related quality of life to facilitate the understanding of gender differences in the association.

This research aims to link the work of such traumatic encounters with their health-related quality of life. Any problematic behaviors of an individual could be the adaptations to the events that happen in their childhood (Ellis, 2015) (Bellis et. al. 2018).

Objectives

The aim of the present study is to study the association between adverse childhood experiences and health related quality of life in young adults. Based on the focus of the study the following objectives can be formulated:

- To analyze the prevalence of adverse childhood issues.
- To examine if there were any gender differences in the adverse childhood experiences.
- To examine if there are any gender differences in the various domains of health-related quality of life.
- To analyze the relationship between adverse childhood experiences and the domains of health-related quality of life in females.
- To analyze the relationship between adverse childhood experiences and the domains health related quality of life in males.

Hypotheses

In accordance with the theoretical orientation and the review of literature the following hypotheses were formulated:

H₁: Females will be higher in adverse childhood experiences than males.

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- H₂: Males will be higher in the domains of health related quality of life than females.
- H₃: Adverse childhood experiences will be negatively correlated to the domains of health related quality of life- physical functioning, role limitations due to physical health, role limitations due to emotional problems, energy/fatigue, emotional well-being, social functioning, pain and general health in females
- H₄: Adverse childhood experiences will be negatively correlated to the domains of health related quality of life- physical functioning, role limitations due to physical health, role limitations due to emotional problems, energy/fatigue, emotional well-being, social functioning, pain and general health in males.

METHODOLOGY

The present study investigated the association between adverse childhood experiences and health related quality of life in young adults living in India.

The sample was collected from 100 individuals using convenience sampling. The following were the sample's inclusion criteria: Participants must fall in the age group of 18-30 years old and be an Indian citizen with a average level of understanding English, should have an adverse childhood experience, must hold a minimum educational qualification of 12th standard and must be able to participate fully in the informed consent process. The exclusion criteria included the following: Participants with very low economic status insufficient to manage daily requirements, low educational qualification, live in prisons or are homeless, have untreated severe physical/ neurodevelopmental/ mental health disorders or who cannot provide consent, those who has spent their childhood (till 18 years of their life) abroad and who are not fluent in English and individuals who do not fall into the particular age group.

The geographical locations of the participants across different states and cities in the country were as follows:

Table 1- Number of Participants from each state in India

State	Number of participants
Assam	1
Goa	1
Karnataka	15
Kerala	46
Maharashtra	33
Odisha	1
Rajasthan	3

Tests and tools

The socio-demographic form contained questions regarding the name, age, gender and location of the participants to determine whether or not the participants meet the inclusion criteria for the study. The first tool was the Adverse Childhood Experiences Questionnaire (ACE; Felitti et al., 1998). It is a 10- item questionnaire intended to assess 10 types of childhood adversities before the age of 18 which include physical abuse and neglect, emotional abuse and abuses that is associated living in a dysfunctional family It is reliable and provides an adequate internal constituency of Cronbach's alpha 0.88 (Wingenfeld et al., 2010) (Murphy et al, 2014). The second tool was the Short Form Health Survey (Rand, SF-36) created by RAND created as part of the Medical Outcomes Study (Hays and Morales 2001) which can analyze 8 health concepts which includes physical functioning, bodily pain, role limitations due to physical health problems, personal/ emotional problems, emotional

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well-being, social functioning, energy/fatigue, and overall health perceptions, as well as perceived health improvement. Cronbach's alpha for the different subscales ranges from 0.78 to 0.93 (Hays et al, 1992).

Procedure

The permission to start the study was given from Amity University Maharashtra. The informed consent was taken from the participants and they were requested to participate on a voluntary basis promising confidentiality. The scales were made available through Google Forms. Scoring of the questionnaires was then carried out and data was exported and arranged in Microsoft Excel. The association between the variables were analyzed later using statistical functions in Microsoft Excel and SPSS software. The research is a correlational study to find the relation between adverse childhood experiences and health related quality of life in young adults. The analysis plan involved the following: descriptive analyses and inferential analyses.

Ethical Considerations

Respondents were asked to participate in the study voluntarily and given the option to withdraw at any time. There was no rude, discriminatory, or other inappropriate language in the surveys. Throughout the research, confidentiality and privacy were preserved. The APA style was used to acknowledge the contributions of other authors. Objectivity was maintained throughout the investigation in conversations and analyses.

FINDINGS

Descriptive Analysis

The socio-demographic characteristics of the participants are briefly described in this section. On the variables under study-Adverse Childhood Experiences and the domains of Health-Related Quality of Life-the means, standard deviations, and distributions of young adults in India (N=100) were computed and presented as shown in the subsequent sections. A number of socio-demographic details like age, gender, location were included to attain a more comprehensive understanding of the socio-demographic background of the participants as presented in Table 2

Table 2: Socio-demographic characteristics of participants (N=100)

Socio-demographic characteristics	Category	N%
Age	18-21 years	30 (30%)
	22-25 years	62 (62%)
	26-30 years	8 (8%)
Gender	Male	50 (50%)
	Female	50 (50%)
Location	Assam	1 (1%)
	Goa	1 (1%)
	Karnataka	15 (15%)
	Kerala	46 (46%)
	Maharashtra	33 (33%)
	Odisha	1 (1%)
	Rajasthan	3 (3%)

Majority (62%) of the participants belonged to the age group 22-25 years, as seen in Table-2. There were an equal number of males and females and nearly half of them belonged to

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Kerala. The mean and standard deviation for young adults in India on Adverse Childhood Experiences and Health related quality of life are shown in Table 3 and Table 4 as follows.

Table 3: Mean and Standard deviation of Adverse Childhood Experiences (ACE) Scores of participants (N=100)

	Possible Range	Category	Mean	Standard Deviation
ACE	1-10	Total	2.67	1.61
		Male	2.48	1.69
		Female	2.86	1.52

Table 4: Mean and Standard deviation of various domains under Health related quality of life scores of participants (N=100)

HRQOL	Possible Range	Category	Mean	Standard Deviation
Physical functioning	0-100	Total	75.3	26.05
		Male	79.5	22.27
		Female	71.1	28.96
Role limitations due to physical health	0-100	Total	49	41.57
		Male	57	39.78
		Female	41	42.18
Role limitations due to emotional problems	0-100	Total	42.66	39.94
		Male	45.33	40.27
		Female	40	39.84
Energy/fatigue	0-100	Total	54.85	17.82
		Male	60.2	17.17
		Female	49.5	17.00
Emotional well-being	0-100	Total	58.68	19.99
		Male	60.56	22.52
		Female	56.8	17.12
Social functioning	0-100	Total	61	22.35
		Male	62.25	24.93
		Female	59.75	19.60
Pain	0-100	Total	72.2	22.40
		Male	77.15	17.43
		Female	67.25	25.701
General health	0-100	Total	62.5	19.79
		Male	68.8	18.99
		Female	56.2	18.69

The data presented in Table-3 shows that females (M= 2.86, SD=1.52) scored higher in the Adverse childhood questionnaire compared to males (M= 2.48, SD= 1.69). The standard deviation score shows that the values of the data points do not vary comparatively. The data presented in table-4 shows that males scored higher in the various domains of health related quality of life than females, also the lowest score in males is in the domain role limitations due to emotional problems (M= 45.3, SD= 40.27) and females (M= 40, SD= 39.84). In general the most scored domain is physical functioning for both males (M= 79.5, SD= 22.27) and females (M= 71.1, SD= 28.96). The standard deviation in all these domains show that the values are moderately varied.

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The prevalence of adverse childhood experiences is shown in the below table

Table 5: Prevalence of Ace

Ace Score	Females (50)	Males (50)
1	20%	40%
2	26%	20%
3	24%	16%
4 or more	30%	24%

A minority of girls (20%) had had at least one ACE before the age of 18, whereas 40% of males had experienced at least one ACE. Individuals who have had at least two ACEs are remarkably similar, with females reporting 26% and males reporting 20%. Females accounted for 24% of those with three ACEs, while males accounted for 16%. When it comes to 4 or more CAEs, which is the most serious, females have a nearly 30% prevalence rate, while males have a 24% prevalence rate.

Inferential Analysis

The testing of hypotheses is the subject of this segment. To begin, it was determined whether the assumptions (normality and homogeneity of variance) had been met. Then, for all of the variables under consideration, independent samples t-tests are used to determine gender differences. Furthermore, both variables are subjected to correlational analysis to determine the type, degree, and significance.

Independent samples t-test

Table 6- Gender Differences in ACE (N=100)

Variable	Group	Mean	SD	Mean Difference	t-value	Sig (2 tailed)
ACE	Male	2.48	1.69	0.38	1.179	0.241
	Female	2.86	1.52			

Table 7- Gender Differences in domains of Health Related Quality of life (N=100)

Domains	Group	Mean	SD	Mean Difference	t-value	Sig (2 tailed)
PF	Male	79.5	22.27	-8.40	-1.625	0.107
	Female	71.1	28.96			
RLPH	Male	57.00	39.78	-16.0	-1.951	0.054*
	Female	41.00	42.18			
RLEP	Male	45.33	40.27	-5.33	-0.666	0.507
	Female	40.0	39.84			
EF	Male	60.2	17.17	-10.70	-3.131	0.002**
	Female	49.5	17.0			
EWB	Male	60.5	22.52	-3.76	-0.94	0.35
	Female	56.8	17.12			
SF	Male	62.25	24.93	-2.5	-0.557	0.579
	Female	59.75	19.6			
P	Male	77.15	17.43	-9.90	-2.254	0.026*
	Female	67.25	25.7			
GH	Male	68.8	18.99	-12.60	-3.343	0.001**
	Female	56.2	18.69			

PF- physical functioning, RLPH- role limitations due to physical health, RLEP- role limitations due to emotional problems, E/F- energy/fatigue, EWB- emotional well-being, SF- social functioning, P- pain and GH- general health

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The table-6 shows that there is no significant difference in the scores of ACE in males (M= 2.48, SD= 1.69) and females (M= 2.86, SD= 1.52) in ACE; $t= 0.179$ and $p= 0.241$ whereas table 7 shows that there is significant difference in the domains of health related quality of life; in Role limitation due to physical health ($t= -1.951$, $p= 0.054$), Energy/fatigue ($t= -3.131$, $p= 0.002$), Pain ($t= -2.254$, $p= 0.026$) and General health ($t= -3.343$, $p= 0.001$). In all these domains, the males have shown higher means than the females.

Correlational Analysis

Correlation coefficients for ACE with the domains of Health related quality of life in female and males participants were computed in table 8 and 9 respectively.

Table 8- Correlation between ACE and domains of Health Related Quality of life in Female Young Adults (N=50)

Variables	ACE	Health Related Quality of Life							
		PF	RLPH	RLEP	E/F	EWB	SF	P	GH
ACE	1								
PF	0.029	1							
RLPH	0.083	0.169	1						
RLEP	0.038	0.209	0.613**	1					
E/F	-0.137	0.045	0.442**	0.487*	1				
EWB	-0.258	0.132	0.392**	*	0.670*	1			
SF	-0.167	0.071	0.178	0.431*	*	0.353*	1		
P	-	0.318*	0.097	*	0.493*	0.121	0.368**	1	
GH	0.464*	0.381*	0.331*	0.198	*	0.392*	0.187	0.398**	1
	*	*		0.061	0.217	*			
	-			0.249	0.291*				
	0.402*								
	*								
Mean	2.86	71.1	41	40	49.5	56.80	59.75	67.25	56.20
Standard deviation	1.52	28.96	42.18	39.84	17.0	17.12	19.60	25.70	18.69

** Correlation significant at 0.01 level (2-tailed); * Correlation significant at 0.05 level (2-tailed); PF- physical functioning, RLPH- role limitations due to physical health, RLEP-role limitations due to emotional problems, E/F- energy/fatigue, EWB-emotional well-being, SF- social functioning, P- pain and GH-general health

Table-8 indicates that pain and adverse childhood experiences in female participants negatively correlate at 0.01 level of significance i.e., $p < 0.01$. The data also indicates that general health and adverse childhood experiences are negatively correlated in female participants at 0.01 significance level i.e., $p < 0.01$ which means as ACEs increases general health and relief from pain decreases in females. No significant correlations were found between the remaining domains of health related quality of life in female participants.

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Table 9- Correlation between ACE and domains of Health Related Quality of life in Male Young Adults (N=50)

Variables	ACE	Health Related Quality of Life							
		PF	RLPH	RLEP	E/F	EWB	SF	P	GH
ACE	1								
PF	0.326*	1							
RLPH	0.025	0.159	1						
RLEP	-0.176	0.026	0.339*	1					
E/F	-0.147	0.282*	0.203	0.247	1				
EWB	-0.318*	0.348*	0.212	0.541**	0.631**	1			
SF	-0.209	0.275	0.182	0.545**	0.375**	0.694**	1		
P	0.144	0.268	0.245	0.202	0.268	0.334*	0.402**	1	
GH	-0.071	0.404**	0.339*	0.477**	0.573**	0.637**	0.568**	0.457**	1
Mean	2.48	79.5	57.0	45.33	60.20	60.56	62.25	77.15	68.80
Standard deviation	1.69	22.27	39.78	40.27	17.17	22.52	24.93	17.43	18.99

** Correlation significant at 0.01 level (2-tailed); * Correlation significant at 0.05 level (2-tailed); PF- physical functioning, RLPH- role limitations due to physical health, RLEP- role limitations due to emotional problems, E/F- energy/fatigue, EWB- emotional well-being, SF- social functioning, P- pain and GH- general health

Table-9 indicates that physical functioning and adverse childhood experiences in male participants positively correlate at 0.05 level of significance i.e., $p < 0.05$, which implies as ACEs increases physical functioning increases too. The data also indicates that emotional well-being and adverse childhood experiences are negatively correlated in male participants at 0.05 significance level i.e., $p < 0.05$. This shows that as ACEs increase emotional well-being decreases in male participants. No significant correlations were found between the remaining domains of health related quality of life and adverse childhood experiences in male participants.

DISCUSSION

The aim of the present research was to study the association between adverse childhood experiences and various domains of the health related quality of life as well as to analyze the significant differences amongst males and females. The results of the statistical analyses (descriptive, inferential) implemented in the study are discussed at length here.

In Adverse childhood experiences, the data presented in table 3 shows that females (M= 2.86, SD=1.52) scored higher in the Adverse childhood questionnaire compared to males (M= 2.48, SD= 1.69). The standard deviation score shows that the values of the data points do not vary comparatively whereas, in case of Health related quality of life, the data presented in table 4 shows that males scored higher in the various domains of health related quality of life than females. The table shows the lowest score in males is in the domain role limitations due to emotional problems (M= 45.3, SD= 40.27) and females (M= 40, SD= 39.84). In general, the most scored domain is physical functioning for both males (M= 79.5, SD= 22.27) and females (M= 71.1, SD= 28.96). The standard deviation in all these domains show that the values are moderately varied. The significance of the gender difference in ACE in the present study will be discussed in the following sections.

The prevalence of ACE is mentioned in table 5 which shows that 20% of girls had at least 1 ACE compared to 40% males. Similarly, as the number of ACEs increases to four or more, females have a nearly 30% prevalence rate, while males have a 24% prevalence rate.

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Gender differences in Adverse Childhood experiences show that though the mean ACE score of females was higher than males, results of the independent samples t-test indicated that this difference is not significant. Thus, H_1 is rejected. This result is contradictory to many researches which convey that in adulthood, females were substantially more likely than males to report a variety of ACE's as well as mental health, social, and emotional issues (Pederson, et al. 2020). According to another research, female patients were significantly more likely than male patients to have encountered sexual abuse (42.4 percent versus 10.6 percent, $p < 0.00$); female patients were significantly more likely to have experienced sexual abuse (42.4 percent versus 10.6 percent, $p < 0.00$) (Winstanley et al. 2020).

Similarly results for gender differences in Health related quality of life showed significant gender differences in four of the eight domains. This partially supports the first hypothesis (H_2) which states that males will be higher in role limitations due to physical health, energy and fatigue, pain and general health. The gender difference in role limitations due to physical health and pain was found to be significant at 0.05 level ($p < 0.05$) whereas the gender difference in energy/fatigue and general health was found to be significant at 0.01 level ($p < 0.01$). This result agrees with the research by Jörngården, Wettergen and von Essen, L. (2006) measured the health-related quality of life in adolescents and young adults, a sample of 585 people were chosen with equal number of males and females, a gender comparison was also conducted. The results showed that males had higher HRQOL than females.

Pearson correlation analysis between Adverse Childhood Experiences and Health related Quality of Life was first done on female participants ($N = 50$). Results showed that pain and general health is negatively correlated with adverse childhood experiences at 0.01 significance level. This indicated that women with more Adverse Childhood Experiences experience lesser pain and comparatively lower general health in the future. No significant correlation was found between the other domains of Health Related Quality Of Life and Adverse Childhood Experiences. Hence H_3 is partially satisfied.

Later the Pearson correlation analysis between Adverse Childhood Experiences and Health related quality of Life was done on male participants ($N = 50$). Results showed that physical functioning is positively correlated whereas emotional well-being is negatively correlated with adverse childhood experiences at 0.05 level. This indicated that men with more Adverse Childhood Experiences tend to exhibit higher physical functioning and lower emotional well-being in the future. No significant correlation was found between the other domains of Health Related Quality Of Life and Adverse Childhood Experiences. Hence H_4 is partially satisfied.

Overall, from both correlational studies, it can be said that adverse childhood experiences can be negatively correlated to some of the health domains in both males and females. Several researches have pointed out how the intensity of adverse childhood experiences can play a negative role on future health of individuals. Ujhelyi, Kuritár, Hann and Kósa (2019) examined the prevalence of Adverse Childhood Experiences by survey research methods. They found that child ill-treatment has been firmly established as an elementary risk issue for adult health. A study focusing on women convey various health indicators in women in later life like mental health disorders by Cambron, Gringeri and Vogel-Ferguson (2021) studied low-income women's physical and mental wellbeing is examined in relation to adverse childhood experiences. The results demonstrated significant relationships between the variables and also the existence of anxiety disorder, posttraumatic stress

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disorder, bipolar disorder and other mental health diagnoses in later life. The study by Hughes et al (2021) conducted a systematic study and meta-analysis on the impact of several adverse childhood experiences on wellbeing. An increasing body of research discusses the negative consequences of adversity in childhood can have on health throughout life. Individuals with minimum four ACE's were at increased risk of health issues. Some correlations were found with physical inactivity, overweight or obesity, and diabetes, etc.

Implications of the study

The results of the present research highlights the association between adverse childhood experiences and health related quality of life. Adverse childhood experiences are negatively correlated with health related quality of life. This suggests the vulnerability of an individual in the future. Increased public recognition of the long-term effects of ACE's, on children's physical and mental health provides a vital opportunity to put this knowledge into action. Caregivers and other providers should learn about trauma-informed care and incorporate it in child and family service programmes. The negative effects of ACE's can be reduced with early intervention and prevention. As a result, it's critical that ACE's are identified early in the healthcare system, knowing this history will also help us understand the symptoms and make medical decisions later in life.

Limitations of the study

The study is inevitably subjected to some possible limitations mainly through methodological constraints. The study's shortcomings include the fact that it only looked at a relatively particular population of young adults and also the sampling method was confined to a certain geographic area. In the areas covered by this study, there is a limited quantity of previous research done in India for reference. The scales employed in the study are self-report questionnaires, which rely largely on self-perception and are subject to biases and difficulties with honesty, which can obstruct the collection of accurate data.

Suggestions for future research

Since adverse childhood experiences underlie traumatic and personal experiences for many participants, different types of research method may be suggested to get an in-depth angle about their childhood, Thus, rather than self-report questionnaires, other methods like a qualitative study can be used for assessing the same though it can be highly complex and challenging. Lastly, Cross-cultural comparison as well as age-group differences can also be studied.

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Conflict of Interest

The author declares no conflict of interests.

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