Adverse Childhood Experiences and Substance Abuse in Young Adults: A Correlational Study

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ABSTRACT

Background: Adverse childhood experiences (ACEs) have been strongly associated with development and prevalence of substance abuse throughout the lifespan. This study provides information regarding different ACEs and its contribution toward substance abuse, which in turn would optimize a better psychosocial intervention during childhood.

Objective: This was a cross-sectional comparative study comparing various ACEs in young adults to find out the pattern and extent of substance use in young adults.

Methods: Sixty participants in both case and control group were taken and were given GHQ-12, DAQ, ACE-IQ CPS% SDS and applied using SPSS software.

Result: In cases mean score of GHQ-12, DAQ, and ACE-IQ 9.05, 150.6, and 3.53 while in control 0.600, 55.8, and 0.850, respectively. Most common ACE in cases is community violence at 81.7% followed by alcohol and drug abuser in households at 78.3%. Prevalence of substance uses tobacco 85%, alcohol intake 86.7%, cannabis abuse 20%, opioid 18.3%, and sedative 11.7%.

Discussion: Our study showed that among all substances alcohol and tobacco were the commonest substances of abuse and the findings point to a picture of prevalence of adverse experiences in early life in relation to various sociodemographic factors among adult substance users.

Conclusion: The present study showed that children with history of exposure to multiple adversity should be given high priority for early identification and relief to maintain the quality of their lives and to help develop as healthy productive citizens.

Keywords: ACE-IQ, DAQ, GHQ-12, Sociodemographic characters.

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INTRODUCTION

In persons who are exposed to adverse childhood experiences (ACEs) in childhood and adolescence there is a greater likelihood of suffering from multiple physical and psychological health problems. In adulthood these individuals suffer from greater morbidity and early mortality.[1] ACEs are a major and intensive stress during childhood, they also tend to be frequent in their occurrence, and have an impact on the children's early life.[2] ACEs include incidences of childhood abuses and household dysfunction. Childhood abuse includes experiences of verbal aggression and abuses which are emotionally, physically, and sexually harmful. Dysfunctional households include experiences like having a family member suffering with substance use disorder (SUD), family history of mental illness, a dependent and disabled family member, or being subjected to domestic violence or broken households like parental separation and divorce.[3]

These ACEs have a strong association with the development and prevalence of various health issues like risk of longitudinal substance during the lifespan. Exposure to chronic stressful events has been noticed to impede the neurodevelopment in children which further leads to faulty coping mechanisms, emotional turmoil, and intellectual impairment. Among the defective coping, substance abuse becomes a major refuge which in turn leads to a downward slide into diseases, impairments, social incapacitation, and finally premature mortality.[4] Children form the future of a country constitute about one-fourth of the population in the age group of 10 and 19 years, and below 10 years, they constitute about 12.5% of the population of our country.[5] This major and vulnerable part of the society needs to be protected from the ill effects of tobacco, alcohol,

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and other substance uses. Worldwide this constitutes a major public health concern.

Childhood and adolescence constitute important developmental time in the life of children, during which an individual acquires important skills like academic, intellectual, social, and life related issues. Exposure to substances at this crucial phase of life leads to detrimental effects on the entire life span of children and a lost childhood.[6,7] The family, society, and the nation suffer as a result of early SUD in children; hence the topic is of concern to the entire generation of individuals in a nation. Thus, this issue is a matter of national interest and priority. The present study was conducted with an aim to assess the number and the extent of ACEs in the sample of subjects, to assess the pattern and extent of SUD in young adults and also to find the relation if any between the ACEs and the amount of substance use in sample of subjects.

METHODOLOGY

The present study is a cross-sectional comparative hospital-based study which was conducted in the de-addiction center of Psychiatry Department of Sir Sundar Lal hospital, Institute of Medical Sciences, Banaras Hindu University, Varanasi. The center is a premier tertiary care hospital situated at northern part of India. The institute covers and serves as a large catchment area including multiple states and a neighboring country (Nepal). The sample was collected from January 1, 2019, to March 30, 2020. The subjects were taken from the outdoor and indoor service of the Department of Psychiatry, IMS, BHU, Varanasi. The sample included 60 subjects of SUD as cases and 60 subjects as control. All the subjects were self-referred and were taken in the study after they met the exclusion and inclusion criteria. The data were collected using convenience sampling method. The study was a part of MD thesis which had a specific time limit so the sample size was limited. The ethics committee of the institute gave the approval to the study.

ICD-10 was used for screening of all subjects for SUD (all types) and young adults aged between 18 and 40 years of age were taken for the study. There were two groups: Group I, the study group, and Group II, the control group. The groups met the inclusion and exclusion criteria. The groups were administered the tools as per the study design.

Inclusion Criteria

Study group: All the subjects of both genders report to having SUD (alcohol, tobacco, opioid, cannabis, cocaine, benzodiazepines multidrug), those who gave written informed consent.

Control Group

The attendants accompanying patients and whose age, sex, SES, and educational status matched after taking care of inclusion and exclusion criteria, GHQ <3, giving written informed consent.

Exclusion Criteria

Those subjects having a comorbid physical and psychotic disorder, medically unstable patients, and those having mental subnormality.

Instruments and Tools

A semi-structured sociodemographic pro forma was used to collect the sociodemographic variables like such as age, sex, religion, marital status, education, occupation, monthly income, and residence. The interview schedule was self-designed for the study. A clinical profile sheet was used for the assessment of clinical symptoms in the study subjects.

DAQ[8]

Dysfunction analysis questionnaire (DAQ) is divided into five areas like personal, social, vocational, family, and cognitive. Each section has 10 items to be scored on a scale starting from 1 to 5. Attenuated scores of 40% show a positive dysfunction. The tool has a reliability of 0.77–0.97; the validity on testing has been found to be appropriate.

GHQ-12[9]

General health questionnaire (GHQ) is a 12-item inventory which is standardized for administration to Hindi-speaking subjects and a cumulative score is used to tell about the severity of psychiatric morbidity, a score of 3 and below shows no morbidity.

The ACE International Questionnaire (ACE-IQ)[10]

Adverse childhood questionnaire is for administration to ages 18 and above. The tool contains questions related to family dysfunction, violence, witnessing violence, neglect, emotional and sexual abuse, and also being subjected to collective violence. The questions are scored and a cumulative score gives an idea about the severity of abuse.

For group II the screening was done to exclude psychiatric morbidity, and when the GHQ scores were >3 then the DAQ and ACE scales were administered.

Analysis

SPSS version 23.0 for window was used for the analysis of the data, and parametric or nonparametric tests were used for comparison.

RESULTS

Total sixty patients registered in both case and control groups. Sociodemographic profile of participants shown in Table 1. All participants were male in both group, majority belonged to a joint family set-up in both the groups (86.7 and 85%), urban area (78.3 and 81.7%) and unmarried (50 and 70%), Hindu religion (88.3 and 91.7%) and 10th passed (90 and 81.6%). In both groups, the majority of participants works as skilled workers (45 and 56.7%) and shopkeepers or teachers (21.6 and 20%) and belong to a middle class family (71.7 and 81.7%). Family history of substance abuse and domestic violence were three times more in cases than control group; family history of psychiatric illness is more in cases than in control group (75 and 63.3%).

Table 2 shows the mean age of participants in cases at 28.26 years and in control group at 26.1 years. There are statistically significant differences in mean scores of GHQ-12, DAQ, and ACE-IQ in case and control groups. GHQ-12 score in cases was 9.05 vs 0.60 in controls, DAQ score in cases 150.6 vs 55.8 in controls, and ACE-IQ score in cases 3.33 vs 0.85 in controls.

Table 3 shows that the most commonly used psychoactive substance is alcohol at 86.7% followed by tobacco 85% and cannabis 20% and followed by opioid 18.3% and sedative 11.7%.

Table 4 shows the most prevalent ACEs in cases were community violence 81.7% followed by SUD in households 78.3% followed by family history of chronic depression, mental illness or suicidality, and a household member being treated violently 75% and minimum contact sexual abuse; on the other hand in control group most common was SUD in households 40% followed by family member treated violently 18.3%.

DISCUSSION

None of the subjects in the study sample belonged to the female gender, which is probably attributable to the stigma associated with drug use in females and the associated reluctance in treatment seeking. This finding does not point toward an absence of SUD in females, as multiple studies have shown evidence to the contrary.[11] Our study also shows that the majority of subjects belonged to Hindu religion (>88.3%) which is similar to findings shown by Dadwani,[12] 90% substance users in India belong to Hindu religion as it is the majority religion. Majority of subjects having SUD in both the groups came from urban areas (78.3 and 81.7% respectively); this indirectly reflects the increased urbanization in the country. Sau et al.[13] have shown a similar finding, i.e., 73.4% of substance users belonged to urban areas.

Table 1: Sociodemographic profile of subjects in case and control groups

Sociodemographic status		Case N	Case %	Control N	Control %	Significance p
Gender–Male		60	100%	60	100%	
Family type	Nuclear	8	13.3%	9	15%	0.793
	Joint	52	86.7%	51	85%	
Marital status	Married	30	50%	18	30%	0.025
	Single	30	50%	42	70%	
Domicile	Urban	47	78.3%	49	81.7%	0.648
	Rural	13	21.7%	11	18.3%	
Religion	Hindu	53	88.3%	55	91.7%	0.543
	Muslim	7	11.7%	5	8.3%	
Education	Illiterate	0	0%	4	6.6%	0.217
	Primary	6	10%	7	11.7%	
	High School	25	41.7%	17	28.3%	
	Intermediate	15	25%	16	26.7%	
	Graduate	14	23.3%	16	26.7%	
Occupation	Unemployed	10	16.7%	6	10%	0.691
	Farmer	6	10%	4	6.7%	
	Skilled worker	27	45%	34	56.7%	
	Shopkeeper/teacher	13	21.6%	12	20%	
	Professional	4	6.7%	4	6.6%	
Socioeconomic status	Upper	3	5%	4	6.7%	0.130
	Upper middle	11	18.3%	6	10%	
	Lower middle	32	53.4%	43	71.7%	
	Upper lower	11	18.3%	7	11.6%	
	Lower	3	5%	0	0%	
Family history of substance abuse present		47	78.3%	15	25%	0.000
Family history of psychiatric illness present		45	75%	38	63.3%	0.166
Family history of domestic violence present		45	75%	16	26.7%	0.000

Table 2: GHQ, DAQ, and ACE-IQ scores among cases and control groups

	Case N	Case Mean	Control N	Control Mean	Significance p
Age in years	60	28.26	60	26.1	0.013
GHQ-12	60	9.05	60	0.600	0.000
DAQ	60	150.6	60	55.8	0.000
ACE-IQ	60	3.53	60	0.850	0.000

Table 3: Prevalence of substance among cases

Prevalence of substance among cases (60)	N	%	χ^2	p
Tobacco	51	85%	120	0.000
Alcohol	52	86.7%		
Cannabis	12	20%		
Opioid	11	18.3%		
Sedative	7	11.7%		

The findings of the study point that 50% in cases and 30% participants in control groups were married. Similar to the study by Kanana et al. 52.2% of participants were married who had ACEs among substance users. In our study the majority of participants was married; this is attributable to the universality of marriage in our culture. Another probable reason for this finding could be that a good marital support leads to a better treatment seeking. The present study echoes the findings of other studies done across the country in terms of the marital status, where the proportion of married individuals varied from 62.5 to 76.8%.[5]

The results showed that the majority of subjects was educated beyond 10th class (90 vs 82% in case and controls, respectively. Nearly 25% were graduate in both the groups. Similar findings were shown by Kapse et al.[14] who found that 65% of substance users from Nagpur were educated up to matriculation level. Prajapati et al.[15] found that among the literate group of substance users majority (28%) were graduates. This finding implies that higher education leads to better awareness and also concern related to the harmful effects. This leads to overcoming stigma and thus the need for seeking treatment.

The findings of the study also show that the majority of participants in both the groups belonged to joint families (86.7 and 85%, respectively). It may be due to the fact that in our country most people live in villages along with their parents. The subjects in the sample belonged to lower-middle economic class in both groups (53.4 and 71.7%, respectively) followed by upper lower (18.3 and 11.6%) and then upper middle class (18.3 and 10%), the least number of participants belonged to lower class in both the groups (5 and 0%, respectively). A similar trend has been

Table 4: Prevalence of individual ACEs among cases and control groups

	Case (60)		Control (60)		Significance
Exposure of ACEs	N	%	N	%	p
Single or no parents, broken homes due to parental separation or divorce	21	35%	4	6.66%	0.000
Collective violence	10	16.7%	0	0%	0.001
Community violence	49	81.7%	0	0%	0.000
Bullying	8	13.3%	1	1.6%	0.015
Physical neglect	7	11.7%	1	1.6%	0.028
Emotional neglect	18	30%	0	0%	0.000
Household member treated violently	45	75%	11	18.3%	0.000
Family member having long-standing depression, mental illness or history of suicide	45	75%	3	5%	0.000
Incarcerated household member	7	11.6%	0	0%	0.006
SUD in the household	47	78.3%	24	40%	0.000
Contact sexual abuse	4	6.6%	1	1.6%	0.171
Physical abuse	40	66.7%	5	8.3%	0.000
Emotional abuse	24	40%	1	1.6%	0.000

seen in the study by Damodaran et al. wherein 47.3% belonged to the lower class, 35% belonged to middle class, 17.7% belonged to upper class.[16]

Majority of participants in both case and control groups were skilled workers (45 vs 56.7%) followed by shopkeeper (21.6 vs 20%) and unemployed (16.7 vs 10%) and had least professionals by occupation in both groups (6.6%). Study by Kanana et al. done in Nairobi showed similar results, i.e., 38.8% self-employed, 34.3% employed, 14.2% unemployed, and 9% were students.[4] Participants in the case group had history of substance abusers in family three times more than those in the control group (78.3 vs 25%). Identical findings were seen in the study by Kiburi et al. at Nairobi, i.e., 56.7% had family history of substance abuse.[17] The results show that the majority of participants in both groups had family history of psychiatric illness but more in case (75 vs 63%) group. Similar results were shown in a study by Kiburi et al. at Nairobi, i.e., 84.3% had a family history of psychiatric illness.[17] Subjects in the case group had a history of domestic violence in family three times more than those in the control group (75 vs 26.7%); this is two times more than that found in the results by Wiehn et al. in Germany (34%). This reflects the reality of poor education, poverty, and less awareness regarding individual rights in low income countries like India.[18]

Our study also shows that the mean age participants in both the groups is 28.26 vs 26.1 years, respectively. The GHQ 12 mean for the case group was 9.05 and control was 0.6. The DAQ mean for the cases was 150.6 and control was 55.8 which was more than the findings in the study by Bokhari et al. at Lahore, where the mean age was 21 years.[19] The results in our study reflect the socio-demography of the Eastern Uttar Pradesh, which is a suburb hence people have lesser awareness regarding ACEs, substance abuse, and their treatment. This coupled with associated stigma leads the participants to come for treatment much later than it is appropriate.

The commonest substance of abuse was alcohol, tobacco, and cannabis. This compares closely with other related studies. Othieno et al. in a study on substance use in patients at rural and urban health centers found the most common substances used to be alcohol, tobacco, khat, and cannabis. A study in Bugando hospital in Tanzania by Hauli et al. showed the commonly used substances to be alcohol, tobacco, and cannabis.[20] The reason for this could be due to the low price and ease of availability of these substances.[4] Our results show that maximum exposure to ACEs among cases had community violence at 81.7% followed by alcohol and drug abuser in household at 78.3% followed by family member being treated violently, and the least was incarceration of a family member at 11.6%. Maximum exposure of ACEs among control group had alcohol and drug abuse in household at 40% followed by a family member being subject to violence, i.e., 18.3% and there was no association with incarceration in a family member, least was exposure to collective and community violence.

The commonest of all the ACEs was a single or parentless home; this was reported by half (50%) of the sample. This was closely followed by family history of violence (49%). Our finding is not in tandem with the original ACEs study, where the most common ACE was a family history of violence and SUD (both reported by 28%), then being sexually abused (reported in 21%). The absence of collective and community violence could be attributed to the fact that the Felitti study did not assess the parameters of community or collective violence.

To summarize, the current study has tried to find and assess various ACEs which have a bearing to the young adult population in terms of SUD. These findings can help in optimizing and individualizing the management programs. We found that alcohol and tobacco were the gateway drugs and in the initial stages as they are socially acceptable and can lead to problem SUDs. This entails that multipronged social and legal policy level changes are the need of the hour. Our study had multiple similar findings to the studies undertaken earlier; however, multiple limitations are there. The present study subjects were self-referred which could be different from the community subjects. In some parts of the community milder forms of SUD especially tobacco and alcohol are not considered illnesses hence treatment is not sought earlier. The sample of the present study had no female subject which

again highlights the social sanctions and stigma associated with female SUDs. In the larger perspective this is a mirror of the lower prevalence of SUD in females. There is a need for gender-sensitive strategies which need to be postulated for creating awareness in females so as to bring this part of the society under treatment.

CONCLUSION

The present study was undertaken in 60 participants belonging to 18–40 years. The study aimed to assess the ACEs and to correlate the impact of these experiences on the overall health behaviors. Our results are similar to the conclusions of previous studies. Higher ACEs are associated with poorer health in later life, like greater the number of ACEs exposed during childhood the higher the probability of poor and risky lifestyle leading consequently to a poorer health. Physical and emotional abuse had a higher correlation to the mental morbidity. In nutshell, the higher ACEs during childhood are associated with negative behavioral and health outcomes in adulthood.

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