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Adverse Childhood Experiences and Harmful Health Behaviour Among Youth: A Cross-sectional Study in Western Uttar Pradesh

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ABSTRACT

Introduction: Adverse childhood experiences (ACEs) are quite common and significantly affect adolescent health, reproductive health, smoking, alcoholism, illicit drug use, sexual behaviour, mental health, and job performance. The present study aims to determine how prevalent ACE are among youth and the prevalence of harmful behaviour among research participants. Further determine the correlation of ACE with the harmful behaviour among study participants.

Materials and methods: This descriptive cross-sectional study was conducted between August 14 and October 14, 2017. The participants were chosen from the population using a simple random sampling technique without replacement. The minimum sample size is estimated to be 198.To describe general subject characteristics, frequency and percentage were used. The Spearman rank correlation coefficient was used to estimate the strength of two variables.

Results: Majority that is 160(80.61%) of study participants had experienced 4 or more than 4 ACE. Out of 198 study participants, 60(30.30%) suffered from depressive ideas for more than two weeks. 28(14.14%) and 25(12.62%) study participants have reported smoking and drinking alcohol, respectively.

Conclusion: Our study concludes that ACEs are very common (e.g. 61.61% of males and 60.47% female respondents had experienced physical abuse, 25.89% males and 33.72% female respondents have witnessed sexual abuse, and 98.21% males and 97.67% female respondents have experienced emotional neglect.

Keywords: Adverse childhood experiences international questionnaire, Adverse childhood experiences, Depression, Smoking, Illicit drug abuse.

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INTRODUCTION

Experiences combined together shape the life of a person in its current form. Experiences how small or big they may seem, have a long lasting effects on the personality. Many times good experiences may make a person confident to face the future challenges but on the contrary some challenging experiences in younger ages may affect the person even in his later life.

"In the brain, as in the economy, getting it right the first time is ultimately more effective and less costly than trying to fix it later. James Heckman; Nobel Laureate economist. National Scientific Council on the Developing Child, Perspectives: The Cradle of Prosperity".[1]

"Adverse childhood experiences (ACEs) are highly prevalent and have a strong influence on adolescent health; reproductive health; smoking; alcohol abuse; illicit drug abuse; sexual behaviour; mental health; the risk of violence and re-victimization; stability of relationships, homelessness; and performance in the workforce".[2] Less is known about the ACE because of the stigma, fear and secrecy around it. Therefore the consequences of ACEs in early adulthood which reflect themselves later in adulthood remain masked and keep on haunting the individual all its life. "Individuals who experience one ACE are often exposed to multiple ACEs. Secondly, ACEs tend to have a dose-response relationship with many unwanted outcomes. That is, accumulating levels of adversity often produce graded decrements in development and functioning across domains. Third, ACEs can lead to lifelong consequences"[3] Questions for patients mostly focus on, "What's wrong with you?" rather than, "What happened to you?"[4] "This phrase rightly points a question towards the need to gently look in the childhood experiences of the persons exposed with the health harming behaviour of themselves. ACEs are significantly associated with various mental and physical illnesses.[5] A graded relationship between the number of categories of childhood exposure and each of the adult health risk behaviours has been found out. Various categories of ACE were strongly interrelated and persons with multiple categories of childhood exposure were likely to have multiple health risk factors later in life.[6]

ACEs range from 8.9–39.8% for all types of neglect and abuse except for sexual abuse. The overall reported prevalence of sexual abuse is 1.6% and reported more by girls than boys in India. ACEs such as abuse and domestic violence are strongly associated with substance misuse, most commonly tobacco, in adolescent and young adult males in India.[7] The global evidences confirms that there is significant increase in the odds ratio of health risk behaviour and mental health implications as the number of ACE elements increases in the individual.[8] Globally, a higher incidence of child abuse appears to be found in countries with relatively low per-capita incomes".[9] "Child maltreatment is prevalent in every society. It is usually a hidden form of violence and may go undetected by carers and professionals for many years, with serious and far-reaching consequences. Few countries have reliable detection and surveillance systems, but even when they do, reports suggest that 90% of child maltreatment goes unnoticed".[10] There are very few studies involving Indian youth exploring the consequences of ACE are available. Present study tries filling this gap though to a small extent. The objectives of the study is to determine the prevalence of ACE are among youth, the prevalence of harmful behaviour among research participants and correlation of ACE with the harmful behaviour among study participants.

MATERIAL AND METHODS

Type of study: Descriptive
Study design: Cross sectional
Study population: All of the students from two reputable engineering and technology colleges in Western Uttar Pradesh made up the study's population.
Inclusion criteria: Study subjects more than 18 years of age and giving informed consent to participate.
Exclusion criteria: Study subjects more than 24 years of age
Study duration: 14 August 2017 to 14 October 2017.
Sampling technique: The participants were chosen from the population using a simple random sampling technique without replacement.
Sample size: The required sample size was calculated by using the following formula

$$n = \frac{Z^2PQ}{d^2}$$

Where "P = Prevalence of ACEs taken as 50%, (So as to yield the maximum sample size at a defined confidence interval and precision.) Q = (100-P) %d = Relative error taken as 8% of P Since the calculated sample size is 156, taking 10 per cent more subjects for taking care of non-respondents, the minimal sample size calculated was 171. Finally the data was collected from 198 students.

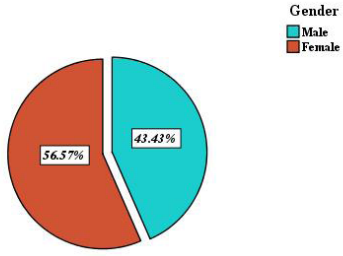

Figure 1: Gender-wise distribution of study participants

Data collection procedure: Data collection instruments included the Adverse Childhood Experiences International Questionnaire (ACE-IQ)[2] and a semi open ended questionnaire for assessing the socio demographic information along with the information about the harmful behaviour among students including smoking, drinking alcohol, use of street drugs and depressive ideas for more than two weeks. No identifying information was collected. All the students were provided the predesigned pretested semi open ended questionnaire in an envelope. They were asked to drop the filled questionnaire kept in sealed envelope in the boxes kept at different locations in the institute within three days. They had the liberty to fill the questionnaire in the privacy of their hostel rooms or homes.
Statistical Analysis: The collected data was entered into Microsoft Excel software. Frequency and percentage were used to describe general subject characteristics. To estimate the strength of two variables was checked through Spearman rank correlation coefficient.

RESULTS

Out of 198 study participants, 112 (56.57%) were males and 86 (43.43%) were females (Refer Figure 1). The age range of male and female study participants was 18-22 years. The average age of male and female study participants was 19.17 ± 1.130 and 19.18 ± 0.956 years respectively. (Out of 198 study participants 120 (60.60%) resided in a nuclear family and 78 (39.39%) resided in a joint family. Most of participant families that is 33.32% and 33.33% had belongs

Table 1: Prevalence of Harmful Health Behaviour (HHB) among study participants

S. No.	*Harmful Health Behaviour (HHB)*	*No. of participants*	*Percentage*
1	Smoking	25	12.62
2	Alcohol	28	14.14
3	Street drugs	1	0.5
4	Sex before16 years	10	5.05
5	Multiple sex partners	5	2.52
6	Unwanted pregnancy	1	0.5
7	Depressive ideas for more than 2 weeks	60	30.3

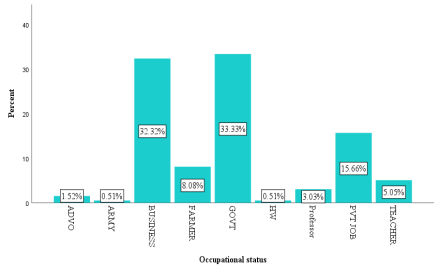

Figure 2: Distribution of Study Participants as per father's occupational status

to business and government profession. (Refer Figure 2).

Table 1 shows the prevalence of harmful health behaviours (HHB) among study participants. It is shown that smoking and alcohol use are highly widespread among participants with 12.62% and 14.14% respectively. Also, there was 30.3% of participants reporting depressive thoughts for more than two weeks.

Table 2 shows majority that is 160(80.61%) of study participants had experienced 4 or more than 4 Adverse Childhood Experiences. 25(12.62%) and 13(6.57%) of study participants had experienced 3 and 2 Adverse Childhood Experiences respectively.

Our study reports positive correlation between overall ACE score and Health Harming Behaviors (correlation coefficient Males 0.49353, Females 0.53566) (Refer Table 3)

DISCUSSION

The term "Adverse Childhood Experiences" (ACE) describes some of the most severe and frequent causes of stress that young children may experience. Numerous forms of abuse, neglect, violence between parents or other caregivers, other grave forms of household dysfunction such alcohol and drug misuse, peer, communal, and collective violence are examples of such experiences.[11] In a study done by Karen Hughes *et al*[12] in an English national household survey to Nearly half of participants (46.4%) had experienced at least one adverse childhood event (ACE), and 8.3% had four or more, according to research on the links between ACEs and adult mental health. In our study 6.57% participants reported 2 adverse childhood experiences where as 80.81% participants have reported 4 or more than 4 adverse childhood experiences. Mark A Bellis*et al*[13] have reported the prevalence of childhood sexual and physical abuse as 6.3%, and 14.8%, respectively in their study. Our study has find out the prevalence of childhood sexual and physical, abuse as and 29.8% (Males 25.89% ,Females 33.72%) and 61% (Males 61.61% ,Females 60.47%) respectively. This higher prevalence of ACE may be due to the socio-cultural differences. Morgan J. Thompson *et al*[14] reported that the likelihood of reporting illicit drug use and sexual risk behaviours was higher among students who reported more ACEs. Mark A Bellis *et al*[15] concluded that ACE counts predicted all HHBs (Harmful Health Behaviours) and that ACEs are responsible for 11.9% of binge drinking, 13.6% of poor eating, 22.7% of smoking, 52.0% of violence, 58.7% of heroin and crack cocaine use, and 36.6 % of unwanted adolescent pregnancies. Morgan J. Thompson *et al*[14] have reported Age and overall HRBs (r (139) =.312, p =.000), tobacco risk behaviours (r(142) =.189, p =.024), alcohol risk behaviours (r(140) =.232, p =.006), and sexual risk behaviours (r(144) =.389, p =.000) all showed significant relationships. These correlations showed that total HRBs, cigarette risk behaviours, alcohol risk behaviours, and sexual risk behaviours all increased with age. Our

Table 2: Pattern of exposure to ACEs among study participants (N=112)

S. No.	*Type of ACE*	*Males*	*Females(N=86)*
		N1 (%)	N2 (%)
1	Physical abuse	69(61.61)	52 (60.47)
2	Sexual abuse	29(25.89)	29 (33.72)
3	Physical neglect	12(10.71)	9 (10.47)
4	Emotional neglect	110 (98.21)	84 (97.67)
5	Alcohol or drug abuser in the household	07(6.25)	5 (5.81)
6	Someone depressed/ suicidal in household	07(6.25)	6 (6.98)
7	Household member treated violently	49 (43.75)	45 (52.33)
8	Parent divorced or single parent	05 (4.46)	5 (5.81)
9	bullying	47 (41.96)	40 (46.51)
10	Community violence	83 (74.11)	57 (66.28)
11	Collective violence	22 (19.64)	14 (16.28)

*Multiple responses

Table 3: Correlation between various Adverse childhood Experiences (ACEs) and Harmful Health Behaviours (HHBs) among study participants

S. No.	ACEs	HHBs	Correlation coefficient	
			Male	Female
1	Sexual abuse	Risky sexual practices*	0.353	0.558
		Substance abuse**	0.322	0.270
		Depressive ideas for more than two weeks	0.398	0.290
2	Bullying	Depressive ideas for more than two weeks	0.366	0.300
		Substance abuse**	0.238	0.220
3	Violence against family	Substance abuse**	0.093	0.152
4	Total ACE score	*Total HHB Score*	0.494	0.536

**Including initiation of sex before 16 years, multiple sexual partners and unwanted teenage pregnancy, **smoking/alcohol/ street drugs*

research has also found significant correlation between sexual abuse and risky sexual practices among female students (correlation coefficient 0.55806) Bullying and depression among male students (correlation coefficient 0.39806). The number of adverse childhood experiences was found to be positively correlated with subsequent reports of health-harming behaviours. Compared with those who reported no adverse experiences, respondents who reported at least four adverse childhood experiences were at significantly increased risk of many health-harming behaviours in a survey done in eight eastern European countries done by Mark A Bellis*et al*.[15] Our study has also found a positive correlation between Adverse Childhood experiences and Health Harming Behaviors(HHBs). Naira Ikram *et al*[16] reported that Fifty-eight per cent of women participants had reported to have experienced at least one ACE in comparison to 97.67% female participants in our study.

CONCLUSION

Our study reports positive correlation between overall ACE score and HHBs (correlation coefficient males 0.49353, females 0.53566). Our study concludes that ACEs are highly prevalent (e.g. 61.61% of males and 60.47% female respondents had experienced physical abuse, 25.89% males and 33.72% female respondents have experienced sexual abuse, and 98.21% males and 97.67% females respondents have experienced emotional neglect. 43.75% male and 52.33% female respondent had witnessed violence against their family members, 41.96% male and 46.51% female respondent have faced peer violence in the form of bullying and as high as 74.11% male and 66.28% female respondents have witnessed community violence. Our study concludes that these ACE have a strong influence on mental, physical health and social health as the study has found significant correlation between sexual abuse and risky sexual practices among female students (correlation coefficient 0.55806). Bullying and depression among male students(correlation coefficient 0.39806). Naira Ikram *et al*.[15] reported that 58% of women participants had reported to have experienced at least one ACE in comparison to 97.67% female participants in our study

RECOMMENDATIONS

Many times people do not find a right person to talk about the adverse experiences specially those which happened in their childhood and suffer silently. There should be a trained counsellor in every institute and offices so that people do not suffer silently and get the required help to cope with. There should be inclusion of other activities like "Theatre of Oppressed" which is a proven method to help people to vent their feelings which have accumulated over time.

CONFLICT OF INTEREST

There is no conflict of interest.

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