

Sensation seeking and high risk behaviour among alcohol dependent patients

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Abstract

Objective: To study the relationship between sensation seeking and high risk behaviour in alcohol dependent patients.

Introduction: Several studies have indicated the role of sensation seeking as a personality construct in explaining the relationship between the alcohol use and sexual risk taking. The high sensation seeking behaviour predicted a willingness and inclination to take risks as well as future alcohol use.

Aim: To study the association between sensation seeking and the high risk behaviour among patients with alcohol dependence syndrome.

Materials and Methods: A cross sectional study carried out on 178 men and 22 women alcohol dependent patients admitted to Psychiatry ward of Mamata Medical College and General Hospital, Khammam (TS), India. The study period was 15 months, from January 2011 to April 2012. The instruments used for selection of sample were ICD-10, CIWA-AD and MMSE. The tools used for collection of data were; Sensation Seeking Scale-Form V (Indian Adaptation), Severity of Alcohol Dependence Questionnaire (SOADQ), High Risk Behaviour Questionnaire (HRBQ), Barratt's Impulsiveness Scale (BIS-II) version II.

Results: Significant association was found between high risk behaviour and sensation seeking behaviour (p value-0.000). The one way ANOVA showed no significant influence of SSS scores on high or low impulsivity of the sample (p values- 0.500>0.05 and 0.195>0.05).

Conclusion: The patients scoring high on certain personality constructs such as sensation seeking and impulsivity are vulnerable to indulge in high risk behaviour.

Keywords: Sensation seeking, Alcohol dependence, High risk behaviour, Personality constructs, Impulsivity.

Introduction

Sensation seeking refers to a biologically based personality dimension defined as the need for varied, novel and complex sensations and experiences, and the willingness to take physical and social risks for the sake of such experiences.¹ Several studies have examined the role of sensation seeking as a mediating variable in the association between substance abuse and high-risk behavior.²⁻³ Sensation seeking behaviour postulates that every individual has a preferred level of stimulation to reach states of arousal that maximizes affective, cognitive and motor functioning⁵ and individuals seek novel and exciting stimuli to achieve optimal levels of arousal.^{6,7} Studies on high risk behaviour and alcohol abuse have shown that high risk behaviour is associated with higher sensation seeking and risk taking attitudes.¹⁵ *Sensation seeking*, the propensity to seek optimal stimulation and engage in risk behaviors, correlates with alcohol expectancies, which are related to alcohol use in sexual situations, potentially increasing risks for sexually transmitted infections (STIs).⁸

Materials and Methods

The present study is a cross sectional one was carried out on 178 men and 22 women alcohol dependent patients admitted to Psychiatry ward of Mamata Medical College and General Hospital, Khammam (TS), India. The study period was 15 months, from January 2011 to April 2012. The alcohol

dependent patients were diagnosed using ICD-10 (Telugu language version) for Psychiatric diagnosis, Clinical Institute Withdrawal Assessment for Alcohol (CIWA-AD, Telugu language version) to ascertain that the patients are not in withdrawal state, Mini Mental Status Examination (MMSE, Telugu language version) to ascertain that the patient has no cognitive impairment. The severity of alcohol dependence was assessed using a questionnaire (SOADQ, Telugu language version) consisting of twenty items, five subscales with four items in each. It is a short, easy to complete, self-administered and standardized tool with a maximum score of 60 and the test retest reliability coefficient for SOADQ is 0.92.

The high risk behaviour questionnaire developed by Biju Poulouse and Krishnamachari Srinivasan (2008) was translated in to Telugu language, standardized and it has test retest reliability coefficient of 0.92. The data was collected on the occurrence of the following four events during the past one year: Road Traffic Accidents (RTA), Crime and Violence (C&V), Self-Injurious Behaviour (SIB), High Risk Sexual Behaviour (HRSB). In the present study, high risk behaviour as related to alcohol use was defined as occurrence of the event within 2 hours of consumption of 32 grams of alcohol that had been consumed in less than 2 hours. In this study a simple event analysis method was used due to time constraint.

Sensation seeking scale (SSS), Basu et al.,¹ adapted the original sensation seeking scale developed by

Zuckerman for use in India. The sensation seeking scale, form V, Indian adaptation 11 was translated forward and backward in to Telugu language to ensure that the translated version matched the original version, standardized and used; it had a test retest score of 0.82. The Barratt's Impulsivity Scale, version 11 (BIS-11), measures impulsivity in terms of 3 domains: Motor impulsiveness, non-planning impulsiveness and cognitive impulsiveness 26. The BIS-11 has 30 items scored on a 4-point scale and possible scores range from 30 to 120. The BIS-11 is perhaps the most widely known measure of impulsivity and the total score was used to provide a general measure of impulsivity. The

BIS-11 was translated into Telugu language and back to English to ascertain that the Telugu version matched the original scale. The reliability coefficient (0.90) was computed using test retest method on a sample of 50 patients. The socio demographic information of the sample was collected using a questionnaire developed for the purpose. The data collected from all the seven scales were subjected to statistical analysis and presented as under.

Results

Table 1: Frequency of occurrence of high risk behaviour among the sample

S.No	Variables	Frequency	Percent
High Risk Behaviour			
1	Road Traffic Accidents (RTA)	80	40
2	Crime and Violence (C&V)	42	21
3	Self Injurious Behaviour (SIB)	30	15
4	Risky Sexual Behaviour (RSB)	15	7.5
	Total	200	100
Sensation Seeking Scale scores			
1	Nil	104	52
2	<13 Low	53	26.5
3	13-26 Moderate	43	21.5
	Total	200	100

Table 2: Summary of independent sample t-test by Sensation Seeking Scale

BIS	SSS scores	N	Mean	Std. Deviation	t-value	p-value
High Impulsivity	< 13 Low	53	49.04	14.314	0.677	0.500
	13-26 Moderate	43	50.84	11.028		
Low Impulsivity	< 13 Low	53	26.58	7.989	1.305	0.195
	13-26 Moderate	43	24.53	7.212		

Table 3: Percentage of each sensation seeking sub scale scores in all the four high risk behaviours

SSS - IV sub scales		High Risk Behaviour					Total
		Nil	RTA	C & V	S I B	RS B	
SSS Categories	Nil	80	16	0	7	1	104
		100%	38.10%	0.00%	46.70%	3.00%	52.00%
	Disinhibition (D IS)	0	0	0	0	1	1
		0.00%	0.00%	0.00%	0.00%	3.00%	0.50%
	Boredom Susceptibility(BS)	0	0	0	2	1	3
		0.00%	0.00%	0.00%	13.30%	3.00%	1.50%
	Thrill and Adventure Seeking(TAS)	0	3	0	0	0	3
		0.00%	7.10%	0.00%	0.00%	0.00%	1.50%
	DIS & TAS	0	3	0	0	0	3
		0.00%	7.10%	0.00%	0.00%	0.00%	1.50%
BS & TAS	0	0	0	0	5	5	
	0.00%	0.00%	0.00%	40.00%	0.00%	3.00%	
TAS & Experience Seeking (ES)	0	6	4	0	0	10	
	0.00%	14.30%	13.30%	0.00%	0.00%	5.00%	
DIS, BS & TAS	0	3	0	0	0	3	
	0.00%	7.10%	0.00%	0.00%	0.00%	1.50%	
DIS, BS&ES	0	0	0	0	6	6	

		0.00%	0.00%	0.00%	0.00%	18.20%	3.00%
	DIS, TAS&ES	0	3	1	0	2	6
		0.00%	7.10%	3.30%	0.00%	6.10%	3.00%
	BS,TAS&ES	0	0	13	0	0	13
		0.00%	0.00%	43.30%	0.00%	0.00%	6.50%
	DIS, BS, TAS &ES	0	8	12	0	17	37
		0.00%	19.00%	40.00%	0.00%	51.50%	10.50%
Total		80	42	30	15	33	200
		100%	100%	100%	100%	100%	100%

Table 4: Association between high risk behaviour and personality variables & severity of alcohol dependence

Variables (BIS,SSS, SOADQ)		High Risk Behaviour					Total	Chi square value	p- value
		Nil	RTA	C& V	S IB	RSB			
High Impulsivity	Nil	80	0	0	0	0	80	218.46**	0.000
		100.00%	0.00%	0.00%	0.00%	0.00%	100.00%		
	>24	0	5	0	1	0	6		
		0.00%	83.30%	0.00%	16.70%	0.00%	100.00%		
	25- 48	0	16	16	10	19	61		
		0.00%	26.20%	26.20%	16.40%	31.10%	100.00%		
49-72	0	21	14	4	14	53			
	0.00%	39.60%	26.20%	7.50%	26.40%	100.00%			
Total		80	42	30	15	33	200		
		40.00%	21.00%	15.00%	7.50%	16.50%	100.00%		
Low Impulsivity	Nil	80	0	0	0	0	80	261.82**	0.000
		100.00%	0.00%	0.00%	0.00%	0.00%	100.00%		
	<16	0	1	0	1	1	3		
		0.00%	33.30%	0.00%	33.30%	33.30%	100.00%		
	17-32	0	17	30	10	28	85		
		0.00%	20.00%	35.30%	11.80%	32.90%	100.00%		
33-48	0	24	0	4	4	32			
	0.00%	75.00%	100.00%	12.50%	12.50%	100.00%			
Total		80	42	30	15	33	200		
		40.00%	21.00%	15.00%	7.50%	16.50%	100.00%		
SSS scores	Nil	80	16	0	7	1	104	191.08**	0.000
		76.90%	15.40%	0.00%	6.70%	1.00%	100.00%		
	<13 Low	0	19	20	8	6	53		
		0.00%	35.80%	37.70%	15.10%	11.30%	100.00%		
13-26 Moderte	0	7	10	0	26	43			
	0.00%	16.30%	23.30%	0.00%	60.50%	100.00%			
Total		80	42	30	15	33	200		
		40.00%	21.00%	15.00%	7.50%	16.50%	100.00%		
SOADQ	Nil	80	0	0	0	0	80	245.19**	0.000
		100.00%	0.00%	0.00%	0.00%	0.00%	100.00%		
	< 20 Low	0	16	0	0	14	30		
		0.00%	53.30%	0.00%	0.00%	46.70%	100.00%		
	21-30 Moderate	0	24	25	11	16	76		
		0.00%	31.60%	32.90%	14.50%	21.10%	100.00%		
31-40 High	0	2	5	4	3	14			
	0.00%	14.30%	35.70%	28.60%	21.40%	100.00%			
Total		80	42	30	15	33	200		
		40.00%	21.00%	15.00%	7.50%	16.50%	100.00%		

Discussion

Event analysis technique was used to determine the occurrence of high risk behavior in temporal relationship with alcohol use. The high risk behaviors examined that were specifically examined in the present study were; Road Traffic Accidents (RTA), Crime and Violence (C&V), Self-Injurious Behaviour (SIB), High Risk Sexual Behaviour (HRSB). The table 1 shows that around 40 percent of them had no high risk behaviour,

21 percent had RTA, 15 percent indulged in C&V, a 7.5 percent exhibited SIB. Among the sample a notable percent of them had road traffic accidents. The sensation seeking scale scores of the sample indicate that 52 percent had nil scores, followed by 26.5 percent with low scores (< 13), a 21.5 percent had moderate scores (13 to 26). Which indicates that, among the sample studied, none of them had high sensation seeking behaviour as per SSS scores.

One way ANOVA was carried out on impulsivity by sensation seeking scale scores of the sample and results were presented in Table 2. which indicates that the p-values 0.500 (>0.05) and 0.195(0.05) were not significant, hence it can be concluded that irrespective of the sensation seeking scores, the sample had the same level of high and low impulsivity. In the present study there was no significant influence of sensation seeking scores on either high or low impulsivity of the sample. The table 3, shows that majority of the sample (52%) with high risk behaviour did not have any of the sensation seeking traits. Only 3 percent of the sample with risky sexual behaviour found to have DIS (Disinhibition) and BS (Boredom Susceptibility) respectively. Around an equal percent (7.1%) of the sample with Thrill and Adventure Seeking (TAS) and DIS and TAS had Road Traffic Accidents (RTA). Around 15.2 percent of the sample under the category of DIS and ES (Experience Seeking), 18.2 percent under the category of DIS, BS and ES, and 6.1 percent of the sample under the category of DIS, TAS and ES had risky sexual behaviour. Around 40 percent of the patients with BS and TAS exhibited self injurious behaviour, a 14.3 percent TAS and ES had road traffic accidents and involved in Crime and Violence.

The risky sexual behaviours were found among the sample with the SSS categories; 18.2 percent in DIS, BS and ES, 6.1 percent in DIS, TAS and ES, 51.5 in DIS, BS, TAS and ES category. The Crime and Violence behaviour was found among the sample with the SSS categories; 3.3 percent in DIS, TAS and ES, 43.3 percent in BS, TAS and ES and 40 percent in DIS, BS, TAS and ES category. These results indicate that The patients with BS and TAS exhibited self injurious behaviour, A 43 percent of the sample with BS, TAS and ES of SSS indulged in crime and violence, A 40 percent and 51.56 percent of the sample with DIS, BS, TAS and ES indulged in crime and violence and risky sexual behaviour respectively. Which reveals that the percentage of Alcohol dependent patients with high risk behaviour were more under the SSS categories having two to four types of sensation seeking behaviours. The study model on. Behavioral characteristics related to substance abuse and risk-taking, sensation-seeking, anxiety sensitivity, and self-reinforcement, significantly predicted risky sexual behavior with a positive relationship between sensation seeking and risky sexual behavior. High anxiety-sensitivity scores were associated with a greater reported incidence of high-risk sexual practices. Participants highest in sensation seeking were most likely to engage in reckless driving, with male incidence being greater than for females.⁹

The table 4, shows that significant association was found between all the four variables i.e., High impulsivity (p-value=0.000), Low impulsivity (P-value=0.000), severity of alcohol dependence (p-value=0.000) and sensation seeking behavior (p-value=0.000) and High risk behavior (Road traffic

accidents, crime and violence, self injurious behavior, risky sexual behavior) in the sample. This is similar to a study done by Walton and Roberts,¹⁰ where they studied the relationship between substance use and personality traits in 118 undergraduate students from a large Midwestern University were assessed using both self-reports and structured measures. Several items from the Behavioral Risk Factors Surveillance Systems (BRFSS) and the youth risk behavior survey were used to assess substance use and heavy drinkers. The quantity of alcohol used to determine these groups of abstainers, moderate drinkers and heavy drinkers. The quantity of alcohol used to determine these groups were: no alcohol in the past year, not more than 12-16 drinks PR week and more than this amount respectively. Personality traits were assessed using the Goldberg's IPIP-AB5C inventory that assessed the bid five dimensions of personality namely extraversion, agreeableness, and conscientiousness, emotional stability and intellect. Results showed that heavy users compared to abstainers or moderate users had lower scores on measures of conscientiousness $t(70)=4.18$, $p<0.001$. This corroborated significantly with a higher BIS-11 score total score.¹¹ This study results was consistent with findings that heavy users of alcohols and substances were more disagreeable, irresponsible and neurotic compared to abstainers or even moderate drinkers. Thus, the current study seems to give credence to the findings that impulsivity is associated with High Risk Behaviors (HRB).

Conclusions

Among the sample studied, the patients had low to moderate sensation seeking behaviour as per SSS scores. In the present study there was no significant influence of sensation seeking scores on either high or low impulsivity of the sample. The patients with BS and TAS (40%) exhibited self injurious behaviour, A 43 percent of the sample with BS, TAS and ES of SSS indulged in crime and violence, A 40 percent and 51.56 percent of the sample with DIS, BS, TAS and ES indulged in crime and violence and risky sexual behaviour respectively. Which reveals that the percentage of Alcohol dependent patients with high risk behaviour were more under the SSS categories having two to four types of sensation seeking behaviours. Significant association was found between all the four variables i.e., High impulsivity (p-value=0.000), Low impulsivity (P-value=0.000), severity of alcohol dependence (p-value=0.000) and sensation seeking behavior (p-value=0.000) and high risk behavior (Road traffic accidents, crime and violence, self injurious behavior, risky sexual behavior) in the sample. Thus the patients scoring high on certain personality constructs such as sensation seeking and impulsivity were particularly vulnerable to indulge in high risk behaviour.

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