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Commentary

High risk behaviours & alcohol dependence

In this issue, Poulose *et al*[1] report high-risk behaviour following alcohol use in patients admitted for treatment of alcohol dependence. The authors approached patients admitted for alcohol dependence syndrome and used the event analysis technique which involves inquiring about occurrence of high risk behaviour in temporal association with significant alcohol use as defined for the purpose of the study from patients and corroborated by their relatives. High risk behaviour has been defined as an occurrence of event with probability of harm and bearing a temporal relationship to consumption of alcohol. The authors have also tried to differentiate those with high risk behaviours from those without on measures of severity of addiction, sensation seeking and impulsivity. Methodologically, it is important to appreciate that this study used a hospital-based, purposive sample without a control group and thus cannot be termed as ideal. The study also used an event analysis method based on a questionnaire developed by the authors that has not been validated elsewhere and the instruments used were local language translations of the sensation seeking scale[2] and the Barratt's impulsiveness scale[3].

Notwithstanding the methodological problems which have probably arisen due to logistical constraints, this study raises some important issues. The first deals with the consequences of alcohol use and the second, the role that personality factors of alcohol abusers and the bearing these factors have on issues such as the antecedents of alcohol dependence and the determinants of the varying outcomes in patients with alcohol dependence.

Alcohol use is one of the leading causes of morbidity and mortality[4]. The indirect consequences of alcohol abuse such as disruption in family life, employment and productivity are even more profound. A major determinant of these consequences is the proclivity of persons with alcohol dependence to indulge in reckless behaviour which may put them and others at the risk of harm. The authors have used the event analysis method to find out the temporal association between alcohol use of a defined magnitude and subsequent road traffic accidents, violent acts, self-injurious behaviour and unprotected sexual intercourse with commercial sex worker or with partner other than the marital partner. While the authors have been able to find that 64.3 per cent of the patient cohort had in fact indulged in such behaviours, it may be argued that this is an expected finding given that this behaviour occurred within 2 h of consumption over a period of not more than 2 h of 32 ml of alcohol. The responses to the questions may have been affected by issues of recall bias, the answers provided by relatives may have been exaggerated or attenuated regarding the nature of alcohol abuse and the risky behaviour and there was a lack of any objective measures of blood alcohol levels at the time of the event. Yet, the study does fill a gap in the literature describing high risk behaviours following alcohol use in patients with alcohol dependence in India. While the association of road traffic accidents with alcohol use is expected, it is significant that the other risk-taking behaviours such as sexual risk-taking behaviour and violence were also common. It is also obvious that many of the patients may have had more than one type of risk-taking behaviour and on multiple occasions. This brings into focus the repetitive nature of the use of substance despite the harm accrued due to such use. However, it must be stressed that the subjects in the study were inpatients and thus may only represent a cohort where the severity of alcohol abuse was enough to necessitate admission. Further, some of all the all-male cohort of patients may have been admitted for reasons related to high risk behaviour rather than alcohol dependence *per se*. Also, many of those patients whose risk-taking behaviours involved

serious injury or incarceration may never reach a de-addiction ward in a hospital.

Another important issue is one of the intimate relationships between personality variables and substance abuse. The authors reported that patients with alcohol dependence and risky behaviour had significantly higher scores on sensation seeking, impulsivity and addiction severity. High levels of sensation seeking have earlier been reported in patients with opioid use disorders[2]. Further, there is a known association between personality disorders and substance abuse across age, sex and different cultures[5]. For instance, the National Comorbidity Survey found that the odds of developing alcohol or drug dependence increased five-fold in the presence of conduct disorder without adult antisocial disorder and 10 to 14-fold if only adult antisocial personality disorder or both conduct and antisocial disorder were present[6]. A similar concept of neurobehavioural disinhibition (derived from measures of affect, behaviour and cognition) has also been found to be predictive of future substance use disorders when measured in children[7]. It follows that personality variables of sensation seeking, impulsivity, conduct problems may antedate the initiation and development of substance abuse and dependence, respectively. It is increasingly being recognised that aetiology of substance use disorders has a component of personality variables such as sensation seeking, impulsivity and adventurousness that may lead to an increased likelihood of initiation of drug use and may contribute to eventual dependence as well[8]. The reasons for this propensity are not well understood but may involve factors such as self-medication, increased curiosity and recklessness, and drug use as a way of coping with alienation from peers and pursuits as a consequence of these personality variables. Another area of research in substance use disorders has been the use of these behavioural patterns as endophenotypes or vulnerability factors that are found more often in the family of the probands than in the general population[9]. A consequence of this sort of a conception is the supposition that what is inherited in substance use disorders is among others a set of neuropsychological vulnerability factors that predispose an individual to the development of substance use disorders. This has been supported by the fact that patients with alcohol dependence are more likely to have a positive family history for alcohol use disorders, have a similar personality profile and are more likely to be heavier drinkers[10]. In this study as well, the authors have found an increased frequency of alcohol use in the family members of patients with high risk behaviour compared to those without but this difference was not significant. This may be due to the methodological constraints alluded to earlier and requires further study. The fact that there was a significant difference in the addiction severity index and measures of sensation seeking and impulsivity between those who did and did not report high risk behaviour indicates the presence in this cohort of a construct similar to the type I and type II alcoholism in men[8]. Type I alcoholism is associated with a later onset, less severe and is more sensitive to environmental factors whereas type II alcoholism is associated with an earlier onset, antisocial behaviour and a stronger genetic basis for increased vulnerability. While the authors have not enquired about age at onset of alcohol dependence, it indicates that the cohort of patients stretched along a continuum with less severely dependent patients at one end who were characterised by fewer behavioural and inherited predisposing factors and more severely dependent patients characterized by more behavioural and inherited predisposing factors on the other end. Whereas attempts at the validation of constructs such as that of type I and type II alcoholism have been mixed[11], there is no doubt that personality factors do play an important role in substance abuse disorders in general, and alcohol abuse disorders, in particular. This paper represents a much needed research attempt into this area of study.

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