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Editorial

EUTHANASIA IN INDIA: SOCIAL PSYCHIATRIC ASPECTS

Varghese P. Punnoose, Siddharth Sarkar

Euthanasia is an issue which generates a keen interest among proponents and opponents alike. The topic holds interest for a large number of stakeholders including physicians, anesthetists, surgeons, nursing personnel, ancillary healthcare staff, legal experts, theologians, journalists, community leaders and public at large, apart from psychiatrists. While euthanasia is legal in some countries like Netherlands, it still remains illegal in India. Nonetheless, issues related to euthanasia have besieged Indian courts time and again. Recently, a constitution bench of 5 Justices of the Supreme Court of India has issued a notice to states and union territories suggesting for a country wide debate on the matter of passive euthanasia (Mahapatra 2014). This was in response to a plea by Common Cause, a non-governmental organization which called for allowing voluntary withdrawal of life support for persons with terminal diseases. Previously, the Supreme Court of India had prescribed guidelines for passive euthanasia with regard to the well publicized Aruna Shanbaug case (Aruna Ramchandra Shanbaug vs Union of India & Ors 2011). The court had recommended any plea for passive euthanasia emanating from close relative to be heard by a bench of High Court. The court had refrained from delegating decision making to the treating doctors, fearing that they might be influenced by practical concerns and might not adhere to the highest ethical standards.

The process of euthanasia has many facets from a social psychiatry point of view. This encompasses the cultural mindset towards the practice, assessment of psychological distress arising from financial and social concerns leading to the request for euthanasia, competence of the patient and rights to refuse, advance directives, and distress among doctors practicing euthanasia. For clarity of understanding, some commonly used terms relating to euthanasia are mentioned in panel 1. Detailed arguments for and against euthanasia are easily available elsewhere (Math & Chaturvedi 2012; Sinha et al. 2012).

Cultural context provides a perspective towards understanding the attitude of euthanasia. India is home to people with diverse cultural backgrounds and

religious denominations. Teachings of Hinduism, Islam and Christianity, the major religions in India are proscriptive towards conduct of euthanasia. Religious preaching prohibits taking away life of another human being, especially if the other person is sick or destitute. But religiosity and religious affiliation stand on a continuum. Elsewhere, it has been suggested that greater degree of religiosity is associated with more prohibitive views towards euthanasia (Bülow et al. 2012; Televantos et al, 2013). Studies from India have suggested that views of Hindu doctors may be more permissive towards euthanasia than doctors of other religions (Abbas, et al. 2008; Kamath, et al. 2011). Attitude towards euthanasia of the general public remains yet to be systematically studied in India. Literature from outside India suggests that euthanasia is acceptable to a large section of general population, especially in the situation of a terminal illness (Hendry et al. 2013). This is in concordance for the respect for patient autonomy and right to a dignified death.

Another major issue that confronts psychiatrists from a social perspective is the psychological distress in the patients with terminal prognosis. In many situations, the concern of the patient surpasses medical issues of fatality of the illness and futility of the treatment. Patients may be more distressed about the burden posed upon the near and dear ones. Though medical advances have made life prolonging treatment available, but affordability of such treatment for extended periods of time is difficult. The burden on family is not only financial, but also encompasses the requirement for nursing and other care, accompanying for treatment, providing moral support despite grieving internally and attempting to provide 'quality time' to patient while juggling other responsibilities. The patient may appraise these strains on others rationally, and become distressed due to guilt. Other sources of psychological distress may include unfulfilled desires and inability to partake in rites of passage due to the illness (e.g. naming the grandson or performing kanyadaan). Such distress may predispose an individual to choose death with dignity rather than slow deterioration in physical health. Request for euthanasia in such situation may arise after due contemplation and

consideration on the part of the patient, rather than purely suicidal ideas as a part of depression.

On the other hand, the request for euthanasia may arise out of untreated psychiatric disorders in some circumstances. A patient with terminal illness may contemplate euthanasia while depressed, but may regret such thoughts after obtaining effective treatment for the mood disorder. Hence, it is of utmost importance to identify and address depression and other psychiatric disorders in patients with terminal illness, and defer acting upon requests for euthanasia till appropriate treatment response is evaluated (after a 'cooling period'). Terminal illness may also lead a person to become delirious or develop dementia, thereby diminishing their capacity. In those situations, patients' request becomes contentious and previous advance directives or 'living will' can be resorted to if it specifies the wishes of the patient in a terminal medical condition. The importance of psychiatric assessment for evaluating competence cannot be understated here. In absence of clear intent from the patient, relying on family members or next-of-kin may be resorted to, but with careful consideration.

Acceptance of passive voluntary euthanasia is relatively easy, but the advocacy of active euthanasia, physician assisted suicide and involuntary euthanasia opens up another box of worms. Hippocratic Oath of medical professionals precludes them to act in a manner that is detrimental to the well being of their patients. The society views health care professionals as protectors of human life. Hence prescribing or administering lethal drugs might be construed as abuse of medical knowledge and can dent the faith in medical field. However, patients undergoing voluntary euthanasia and their dear ones have considered the act as a relief of suffering and a kind gesture even in fatality (Hendry et al, 2011). The 'slippery slope' starts with promulgation of non-voluntary and involuntary euthanasia. A family member of small kid with Down's syndrome and cardiac anomaly who is not likely to survive long may request 'mercy killing'. But allowing such requests may become precedence for justifying euthanasia for frivolous reasons. It may usher an era of eugenics where those 'not good enough' are just let go. It may also become an instrument in the hands of unscrupulous family members or other elements of the society to benefit from a person's demise, for example, in property issues. Such concerns have been specially raised for India where regulation of practices may be difficult (Mishra

2011).

It is a matter of common knowledge that 'passive non-voluntary euthanasia' is widely practiced in India, but never gets documented as such. In the context of traditional cultural setting of rural India, the decision to withhold or withdraw active life support is usually made by the doctor based on a 'practical-philosophical sense' without much ethical dilemmas. In such settings, even when family members are involved in the process of decision making, they leave the actual decision to the doctor who is generally trusted as the best decision maker. This situation is rapidly changing due to the influence of several social factors. The changing value system in a society which is being westernized at a rapid pace has changed the entire scenario of decision makings in end-of-life situations. For example, the children who have come on a short leave from their occupation abroad may put indirect pressure on the treating doctor to withdraw active life-support for the elderly parent even when the continuation of such supports are indicated. On the other extreme, commercial interests of the hospital industry compelling the doctors to continue advanced life support even in those situations which have crossed the point of no return is also possible in the present Indian scenario. Organ donation campaigns in metro cities and in states like Tamil Nadu and Kerala couple with the relative laxity of the new laws have given rise to a new set of problems which complicate the ethical issues associated with euthanasia. The possibility that the demand for organs and the rewards of cadaver transplant may tilt the balance of decision making towards the side of euthanasia cannot be totally ruled out.

Psychiatrists are not only required to assess and if required treat patients who request for euthanasia. They may also be required to help their physician and anesthetist colleague who undertake such a procedure. Conducting euthanasia has been described as a stressful event by clinicians. Many experience emotional turmoil and may need to ventilate after the procedure (Stevens 2005). A psychiatric consultation may be helpful for the clinician colleagues in such circumstances to put things into perspective and not cloud their judgment.

The current legal status of euthanasia in India suggests that passive euthanasia may be allowed for a patient in a vegetative state, when request is channeled through High Court, and the Court takes the decision after due

examination by three independent doctors. However, active voluntary euthanasia still remains illegal. The legal position in India on euthanasia is likely to be cleared over some time when the legislature allows for selected conditional acceptance of euthanasia, or its outright rejection. Informed discussion, deliberation and debate on the matter are required before framing law dealing with euthanasia, respecting Indian values and traditions of the past, at the same time espousing the medical progress and individual liberties. Meanwhile, more attention should be given in the post-graduate level training of psychiatrists on the end-of-life care decisions. Also, psychiatrist should be included in the 'consultation-liaison team' at the institutional level which deals with non-voluntary passive euthanasia. And finally, professional bodies of psychiatrists should take a pro-active role in evolving guidelines for voluntary euthanasia anticipating the legal decisions fuelled by social changes.

Panel 1: Terms relating to euthanasia

Euthanasia – Literally translated as 'good' or 'easy' death, it refers to hastening death to relieve suffering

Passive euthanasia – Withdrawing or withholding treatment like mechanical ventilation which leads to death of the patient

Active euthanasia – Administration of lethal drugs which leads to death of the patient

Voluntary euthanasia – When a competent patient requests for euthanasia

Involuntary euthanasia – Euthanasia conducted without explicit permission from the patient

Non-voluntary euthanasia – Euthanasia conducted when the patient is unlikely to be able to decide regarding euthanasia, for example, in a vegetative state

Physician assisted suicide (PAS) – Herein, the physician supplies lethal drugs for hastening death, but the patient administers them himself/herself.

REFERENCES

Abbas SQ, Abbas Z, Macaden S, et al. (2008) Attitudes towards euthanasia and physician-assisted suicide among Pakistani and Indian doctors: A survey. *Indian Journal of Palliative Care*, 14, 71–74.

Aruna Ramchandra Shanbaug vs Union of India & Ors. , Supreme Court of India (2011). New Delhi.

Bülow HH, Sprung CL, Baras M, et al (2012) Are religion and religiosity important to end-of-life decisions and patient autonomy in the ICU? The Ethicatt study. *Intensive Care Medicine*, 38, 1126-33

Hendry M, Pasterfield D, Lewis R, et al. (2013) Why do we want the right to die? A systematic review of the international literature on the views of patients, carers and the public on assisted dying. *Palliative Medicine*, 27(1), 13–26.

Kamath S, Bhate P, Mathew G, et al. (2011) Attitudes toward euthanasia among doctors in a tertiary care hospital in south India: a cross sectional study. *Indian Journal of Palliative Care*, 17(3), 197–201.

Mahapatra D. (2014, July 16). SC wants countrywide debate on legalizing euthanasia. *The Times of India. Delhi*. Retrieved from <http://timesofindia.indiatimes.com/india/SC-wants-countrywide-debate-on-legalizing-euthanasia/articleshow/38475491.cms>

Math SB, Chaturvedi SK. (2012) Euthanasia: right to life vs. right to die. *The Indian Journal of Medical Research*, 136(6), 899–902.

Mishra PK. (2011) Euthanasia: ethical risks. *Indian Journal of Medical Ethics*, 8(4), 261–262.

Sinha VK, Basu S, Sarkhel S. (2012) Euthanasia: An Indian perspective. *Indian Journal of Psychiatry*, 54(2), 177–183.

Stevens KR. (2005) Emotional and psychological effects of physician-assisted suicide and euthanasia on participating physicians. *Issues in Law & Medicine*, 21, 187.

Televantos A, Talias MA, Charalambous M, Soteriades ES. (2013) Attitudes towards euthanasia in severely ill and dementia patients and cremation in Cyprus: a population-based survey. *BMC Public Health*, 13, 878.

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ASSIST-LINKED ALCOHOL SCREENING AND BRIEF INTERVENTION IN INDIAN WORKPLACE SETTING:
RESULT OF A 4-MONTH FOLLOW UP

Jaison Joseph, Karobi Das, Sunita Sharma, Debasish Basu

Abstract

Introduction: World Health Organization (WHO) attributes 2.5 million deaths every year as a result of harmful alcohol use. WHO developed an Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)-linked Brief Intervention package (ASSIST-BI) to reduce the risk level of alcohol use. Evidence of the efficacy of brief interventions in primary health care and hospital settings for harmful use of alcohol is relatively more as compared to workplace settings. **Aim and objectives:** To study the effectiveness of ASSIST-BI in reducing harmful drinking in the workplace setting of class C employees after a 4-month period. **Methods:** A sample of 39 workers with moderate and high risk level of alcohol use was identified by randomly screening 162 employees with ASSIST. Employees who were identified as moderate and high risk drinkers by the ASSIST were given brief intervention as per ASSIST-BI. The final sample size after 4 months was 31. The individual outcomes were compared on the basis of pre and post ASSIST score and statistical methods. **Results** The average ASSIST scores decreased significantly at 4 months after the intervention relative to pre test ($p = 0.001$). There was a significant change in ASSIST variables, drinking pattern of the subjects, moderate and high risk use of alcohol ($p = 0.001$). Moreover majority of the subjects (77 %) had reduced ASSIST scores at the 4-month follow up. **Conclusion:** Brief intervention resulted in a statistically significant reduction in harmful drinking pattern of the study subjects ($p < 0.01$) in this workplace setting.

Key words: ASSIST, Alcohol, Brief intervention, Workplace

INTRODUCTION

A reveille on harmful alcohol use - 21st century perspective

Alcohol is attributed to nearly 3.2% of all deaths and is regarded as world's third largest risk factor for disease burden (WHO, 2011). Globally about two billion people use alcohol and one-third (nearly 76.3million) is likely to have one or more diagnosable alcohol use disorders. The harmful alcohol use accounts for 4.5% of the global burden of disease and is responsible for 3.8% of all deaths worldwide (WHO, 2009). It is acknowledged that countries which had low alcohol consumption levels are now witnessing an increasing consumption pattern (WHO, 2004). More than half of all alcohol drinkers in India falling into the criteria for hazardous drinking and alarmingly "average age of initiation" of alcohol use had dropped from 19 years to 13 years in the past two decades (Prasad, 2009). It is clear that dependent use is

associated with a significant burden of disease; but there is also evidence that the burden on health care systems from non-dependent, but harmful or hazardous use, may be greater than the burden due to dependent use (Skinner, 1987).

Harmful alcohol use and ASSIST linked Screening and brief intervention

Many screening instruments such as ASI, CIDI-SAM although comprehensive, are time consuming to administer in primary care settings. On the other hand, some of the briefer instruments like CAGE-AID have a focus on dependence and is less useful for detecting harmful or hazardous use in nondependent persons (McPherson & Hersh, 2000). All these findings led the World Health Organization (WHO) to develop an internationally valid screening tool and the result was the Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al., 1993; Babor et al., 1989). The success

of the AUDIT project in promoting alcohol screening and brief intervention provided the impetus for the extension of screening and brief intervention to other substances and related problems leading to the birth of WHO Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) project (WHO, 2002). ASSIST-linked brief intervention (ASSIST-BI) incorporates the FRAMES theme (Feedback, Responsibility, Advice, Menu, Empathy, Self efficacy) and motivational interviewing techniques with an aim to move participants through the stages of change (Bien et al., 1993; WHO, 2010).

Screening and Brief intervention in the workplace settings

There is convincing empirical data that suggest that if screening is linked with a brief intervention it will help in the reduction of harmful drinking pattern in the primary care population (Wilk et al., 1997; Poikolainen, 1999; Moyer et al., 2002; Ballesteros et al., 2004; Bertholet et al., 2005; Kaner et al., 2007, 2009; Sullivan et al., 2011). But empirical data available about screening and brief intervention in the workplace are limited, especially using ASSIST-BI (Richmond et al., 2000; Watson et al., 2009; Hermansson et al., 1998, 2010; Zibe-Piegel & Boerngen-Lacerda, 2013).

There is no data available regarding the effectiveness of screening and brief intervention for harmful alcohol users in the workplace settings of India especially from the class C employees. This prominent lacuna prompted the investigators to explore this area.

AIM AND OBJECTIVES

To study the effectiveness of Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)-linked Brief Intervention package (ASSIST-BI) in reducing harmful drinking in the workplace setting of class C employees of a tertiary-care hospital in northern India after a 4-month period following the brief intervention.

MATERIALS AND METHODS

Design

A quasi experimental pre-post design with 4 month follow up was used to examine the effect of ASSIST linked brief intervention in reducing harmful alcohol use among class C workers in a hospital setting.

Setting & inclusion criteria

The study was conducted among class C employees working in various departments of PGIMER, Chandigarh - a tertiary-care hospital of north India. The institute's

Ethics Review Committee approved the protocol. The study randomly selected semi skilled male manual labourers of the hospital (hospital and sanitary attendants) between the age group of 18 to 55 years with moderate risk & high risk on ASSIST scores. The criterion for identifications as moderate and high risk drinker was based on the ASSIST score of 11 - 26 and above 27 respectively. Clients scoring between 11 and 26 are at moderate risk of health and other problems due to alcohol use and may be experiencing some of the problems at the same time. A score of '27 or higher' for any substance suggests that the client is at high risk of dependence or is dependent on that substance and is probably experiencing health, social, financial, legal and relationship problems as a result of their substance use.

Screening & Sampling techniques

WHO ASSIST V3.0 questionnaire and WHO ASSIST feedback report card were employed for screening while WHO ASSIST brief intervention record was used for recording the brief intervention. WHO ASSIST questionnaire is the first international screening test and an 8 item questionnaire that covers the use of all psychoactive substances and associated problems over the last 3 months. Probability sampling technique was used for the screening process. Screening was undertaken by administering ASSIST questionnaire to randomly selected employees. The sampling techniques are described as follows. The study used systematic sampling technique for the pilot study and screened 37 subjects from the target population (N=927) by selecting every twenty fifth person. Nine subjects (24%) were identified as moderate or high risk alcohol users as per ASSIST scores and brief intervention was provided for them. From this result the study population was estimated as 125 subjects in order to get a minimum sample size of 30 moderate or high risk alcohol subjects on ASSIST scores. This was achieved by using simple random sampling technique with the aid of computerized random number generators. ASSIST was administered to the total 125 subjects and immediate brief intervention was given for 30 screen positive subjects with the aid of WHO ASSIST feedback report card and documented it in the WHO ASSIST brief intervention record. The second session of the brief intervention was done after a period of two weeks of the baseline inclusion and focussed on the response of the participant on the concept of 'first cut down and then check it out'. All the study subjects including the pilot sample (n=9) were informed for a follow up meet

after 4 months of the second brief intervention. During follow up (4 month) WHO ASSIST V3.0 questionnaire was re-introduced to the study subjects for enabling a self reflection for their change in alcohol use.

Brief intervention

Employees who were identified as moderate and high risk drinkers by the ASSIST tool were given brief intervention as per WHO ASSIST linked brief intervention protocol. Screening and brief intervention was delivered by the principal investigator within the workplace setting for an average duration of 10-20 minutes. The brief intervention was based on WHO ASSIST-BI protocol and underpinned the principles of motivational enhancement and readiness to change theory (Bien et al., 1993; WHO, 2010)

Dropouts

The present study randomly screened 162 employees and selected 39 subjects including 9 subjects from the pilot study at baseline brief intervention. Eight subjects did not turn up at 4 month follow up and therefore the final sample was 31.

Analysis

Analysis was done using the SPSS version 16.0 for windows (Chicago, Illinois, USA) by using descriptive and inferential statistics. Means, standard deviations and percentages were used for descriptive statistics. Paired t test was used to compare the mean pre and post alcohol ASSIST scores and univariate changes in ASSIST variables. Chi square test was applied to test the difference in drinking pattern after the baseline brief intervention.

RESULTS

Demographic characteristics

The sample consisted of 31 subjects with mean age of 34.68 year. Most of them were married (87.1%), having their own home (90.32%) and about 20.9% of the subjects were doing part-time jobs along with their full time duty in the hospital. No one had ever taken any treatment for alcohol related problems (Table 1).

Table 1 Socio demographic characteristics of subjects with moderate and high risk alcohol use

Variables	n%	Percentage
Age (years)		
20-29	11	35.48
30-39	10	32.25
Above 40	10	32.25
Mean ± SD	34.68 ± 8.65	
Education		
Primary	24	77.41
Secondary	07	22.58
Marital status		
Married	27	87.1
Not married	04	12.9
Living status		
Own home	28	90.32
Rented home	03	9.67
Working status		
Full time job (PGIMER)	27	87.1
Full time (PGIMER)and part time job(private)	04	20.9
Substance use treatment history		
Alcohol or drug treatment	Nil	Nil

Effect of ASSIST linked alcohol brief intervention on drinking status

The average pre test ASSIST score was 26.55 (SD = 6.54) and at 4 month follow up the post test ASSIST score was 20.06 (SD = 7.84). These average ASSIST scores decreased significantly relative to pre test (paired t = 6.430, p = 0.001). Further examination of responses to the ASSIST at 4 month follow-up revealed some statistically significant difference in the following items. "In the past three months, how often have you used alcohol?" (t = 8.302, p = 0.001), "During the past three months, how often have you had a strong desire or urge to use alcohol?" (t = 6.698, p = 0.001), "During the past three months, how often has your use of alcohol led to health, social, legal or financial problems?" (t = 5.155, p = 0.001), "During the past three months, how often have you failed to do what was normally expected of you because of your use of alcohol ?" (t = 2.146, p = 0.040). In short there was a significant difference in ASSIST variables like alcohol consumption, strong desire to use alcohol and health, social, legal problems due to alcohol at follow up (p < 0.001) (Table 2)

Table 2: Pre post univariate changes of ASSIST variables with paired t test results

Variables	Score Range	Mean Pre score/SD	Mean Post score/SD	Paired t	Sig. (p)
Alcohol consumption over 3 months - ASSIST (Q.2)	0 - 6 (Never - Daily)	4.90 / 1.30	3.42/1.34	8.032	.001*
Strong desire / urge to use alcohol ASSIST (Q.3)	0 - 6 (Never - Daily)	5.03 /1.89	3.58 / 1.45	6.698	.001*
Health social legal problems due to alcohol - ASSIST (Q.4)	0 - 7 (Never - Daily)	3.94 /1.46	1.94 / 2.34	5.155	.001*
Failed to expectations due to alcohol - ASSIST (Q.5)	0 - 8 (Never - Daily)	1.84/ 2.53	0.71 / 1.89	2.146	.040**

*p < 0.01, **p < 0.05

Moreover, at the 4-month follow up there was a significant difference in drinking pattern of the subjects. During the baseline inclusion seventeen subjects were regular users of alcohol and nine subjects used alcohol

on a weekly basis (1 to 4 times per week). However the 4- month follow up test identified only three subjects in the daily user category ($\chi^2 = 17.7, p = 0.001$) (Table 3).

Table 3: Changes in drinking pattern at four month follow up

Alcohol consumption over Three months	Pre intervention (f)	Pre intervention (f)	χ^2	p value
One or Two (1 to 2 times in the last 3 months)	1	9	17.7	0.001*
Monthly (Average of 1 to 3 times per month over the last 3 months)	4	4		
Weekly (1 to 4 times per week)	9	15		
Daily (5 to 7 days per week)	17	3		

*p < 0.01

Furthermore, comparison of alcohol risk level use as determined by ASSIST scores, at baseline and the 4-month follow up revealed a statistically significant difference. More than half of the participants (59%, n=24) were high risk level users of alcohol and the remaining were (41%, n=15) moderate risk level users on ASSIST scores at baseline screening. The comparison

of moderate and high risk level users at baseline and follow up showed a significant difference in moderate and high risk level users at follow-up period as eighteen high risk subjects on ASSIST alcohol scores were dropped into five at follow up ($\chi^2 = 9.95, df = 1, p = 0.001$) (Table 4).

Table 4: Comparison of moderate and high risk level use

Alcohol use	Pre intervention (f)	Pre intervention (f)	χ^2	p value
Moderate risk	13	26	9.95	0.001*
High risk	18	5		

*p < 0.01

Finally, differences in ASSIST scores by pre and post test comparison found that maximum number of subjects (77%) had reduced ASSIST scores at the 4-month follow up. However five of the subjects did not show any change in their ASSIST scores and two of the participants showed an increase in alcohol use by blaming family and financial issues (Table 5).

Table 5: Profile of reduction & increase in ASSIST scores

Change in ASSIST scores	n	%
Reduced ASSIST Score	24	77%
No change	05	16%
Increased ASSIST Score	02	7%

DISCUSSION

This study is the first to explore a screening linked brief intervention for harmful drinkers in the workplace settings of Indian population. A recent action research recommended the routine practice of screening and brief intervention in the workplace as it was found to be feasible and helpful in early detection and referral to treatment services for harmful use of alcohol in the Brazilian population (Zibe-Piegel & Boerngen-Lacerda, 2013). In the present study brief intervention was delivered in a workplace setting and found that it resulted in a statistically significant reduction in harmful drinking pattern of the study subjects at 4-month follow up. The previous studies of screening and brief interventions in the workplace (Richmond et al., 2000, Watson et al., 2009 Hermansson et al., 2010) reported that employees in the intervention group had greater reductions in mean alcohol use variables than the control group. But no statistically significant difference were found between the two groups at the follow up mean AUDIT scores ($p = 0.972$, $p = 0.57$) and CDT ($p = 0.49$) results. Therefore findings of the present study need to be regarded with caution as there was no control group to compare the findings.

The results of the current study give some information on the use of WHO ASSIST screening test as it was less commonly used in the Indian population. In a recent multi-country ($n=1462$) randomized controlled study (Humenuk et al., 2012) found a strong brief intervention effect for ASSIST cannabis scores ($P < 0.005$) and opioid scores ($P < 0.01$) in primary health care settings of India. The present study ($n=31$) found a strong brief intervention effect for ASSIST alcohol scores ($p < 0.001$) in the work place settings. The similar results of the very strong effect of brief intervention on ASSIST scores raise an open pertinent question, i.e., does the ASSIST score estimation has any effect on brief intervention in the Indian settings? Because the present study found an over or under estimation while calculating ASSIST risk score (both score 11 and 26 are considered as moderate drinkers).

Our study found a significant difference in ASSIST variables, drinking pattern, alcohol risk level use and maximum number of subjects (77 %) shown a decrease in their alcohol ASSIST scores at the 4-month follow-up ($p < 0.001$). Evidence of the efficacy of brief interventions in primary health care and hospital settings for harmful use of alcohol is relatively more than that of in the workplace settings. This is mainly due to the methodological and feasibility issues of

performing a screening and brief intervention in the workplace settings. The results of the current study signifies that workplace has the potential to reduce alcohol related harm and screening may itself act positively in drinking reduction and further supports the result of the earlier studies of screening and brief intervention in the workplace (Hermansson et al., 2003).

Limitations

The facility for a private consultation was not possible in this workplace setting. The single centred study with small sample size, reliance on self-reported alcohol consumption and the absence of a control group limits its generalisation.

CONCLUSION

Although there are many trials of brief intervention for harmful alcohol use with varied results, the present study provides some pioneer information regarding screening linked brief intervention in Indian workplace settings and found that ASSIST linked brief intervention resulted in a statistically significant reduction in harmful drinking status of the study subjects at the 4-month follow up. But more randomized controlled trials are needed to delineate its effectiveness to underpin its efficacy in the real scenario.

REFERENCES

- Babor TF, de la Fuente JR, Saunders J, Grant M. (1989) AUDIT The Alcohol Use Disorders Identification Test: Guidelines for Use in Primary Health Care. Geneva: World Health Organization.
- Ballesteros J, Duffy JC, Querejeta I, Arino J, González-Pinto A. (2004) Efficacy of brief interventions for hazardous drinkers in primary care: Systematic review and meta-analyses. *Alcoholism, clinical and experimental research*, 28, 608-18.
- Bertholet N, Daeppen JB, Wietlisbach V, Fleming M, Burnand B. (2005) Reduction of alcohol consumption by brief alcohol intervention in primary care: Systematic review and meta-analysis. *Archives of Internal Medicine*, 165, 986-95.
- Bien TH, Miller WR, Tonigan S. (1993) Brief intervention for alcohol problems: A review. *Addiction*, 88, 315-336.
- Hermansson U, Helander A, Brandt L, Huss A, Ronnberg S. (2010) Screening and brief intervention for risky alcohol consumption in the workplace: Results of a 1 year randomised controlled study. *Alcohol and Alcoholism*, 45, 252-257.

- Hermansson U, Knutsson A, Brandt L, Huss A, Rönnerberg S, Helander (2003) A screening for high-risk and elevated alcohol consumption in day and shift workers by use of the AUDIT and CDT. *Occupational Medicine*, 53, 518–526.
- Hermansson U, Knutsson A, Ronberg S, Brandt L. (1998) Feasibility of brief intervention in the workplace for the detection and treatment of excessive alcohol consumption. *International Journal of Occupational and Environmental Health*, 4, 2.
- Humeniuk R, Ali R, Babor T, et al. (2012) A randomized controlled trial of a brief intervention for illicit drugs linked to the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) in clients recruited from primary health-care settings in four countries. *Addiction*, 107, 957–966.
- Kaner EF, Beyer F, Dickinson HO, et al. (2007) Effectiveness of brief alcohol interventions in primary care populations, Available at www.uvm.edu/~satsc/psyc380/readings%232/reading_11a.pdf? (last accessed on May 26, 2013).
- Kaner EF, Dickinson HO, Beyer F, et al. (2009) The effectiveness of brief alcohol interventions in primary care settings: A systematic review. *Drug and Alcohol Review*, 28, 301-23.
- McPherson TL, Hersh RK. (2000) Brief substance use screening instruments for primary care settings: a review. *J Subst Abuse Treat*, 18, 193-202.
- Moyer A, Finney JW, Swearingen CE, Vergun P. (2002) Brief interventions for alcohol problems: A meta-analytic review of controlled investigations in treatment-seeking and non-treatment-seeking populations. *Addiction*, 97, 279-92.
- Poikolainen K. (1999) Effectiveness of brief interventions to reduce alcohol intake in primary health care populations: A meta-analysis. *Preventive Medicine*, 28, 503-9.
- Prasad R. (2009) Alcohol use on the rise in India. *The Lancet*, 373, 17–18.
- Richmond R, Kehoe L, Heather N, Wodak A. (2000) Evaluation of a workplace brief intervention for excessive alcohol consumption: The work screen project. *Preventive Medicine*, 30, 51–63.
- Saunders JB, Aasland OG, Babor TF, de la Fuente JR, Grant M (1993) Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption. *Addiction*, 88, 791-804.
- Skinner HA. (1987) Early Detection of Alcohol and Drug Problems — Why?. *Australian Drug and Alcohol Review*, 6, 293–301.
- Sullivan LE, Tetraault JM, Braithwaite RS, Turner BJ, Fiellin DA. (2011) A meta-analysis of the efficacy of non-physician brief interventions for unhealthy alcohol use: Implications for the patient-centred medical home. *The American Journal on Addictions*, 20, 343-56.
- Watson HE, Godfrey C, McFadyen A, McArthur K, Stevenson M. (2009) Reducing alcohol-related harm in the workplace: A feasibility study of screening and brief interventions for hazardous drinkers. Available at alcoholresearchuk.org/downloads/.../AERC_FinalReport_0063.pdf (last accessed on May 26, 2013)
- WHO ASSIST working group (2002) The alcohol, smoking and substance involvement screening test (ASSIST): Development, reliability and feasibility. *Addiction*, 97, 1183-1194.
- Wilk IA, Jensen MN, Havighurst CT. (1997) Meta-analysis of randomized control trials addressing brief interventions in heavy drinkers. *Journal of General Internal Medicine*, 12, 274-283.
- World Health Organization (1994) Lexicon of alcohol and drug terms published by the world health organization. Available at http://www.who.int/substance_abuse/terminology/who_lexicon/en/index.html (last accessed on May 26, 2013)
- World Health Organization (2010) The alcohol, smoking and substance involvement screening test (ASSIST): Manual for use in primary care. Available at whqlibdoc.who.int/publications/2010/9789241599382_eng.pdf? (last accessed on May 26, 2013).
- World Health Organization (2011) Alcohol fact sheet. Available at <http://www.who.int/mediacentre/factsheets/fs349/en/index.html> (last accessed on May 26, 2013)
- World Health Organization (2002) Reducing risks, promoting healthy life. Available www.who.int/whr/2002/en/whr02_en.pdf? (last accessed on May 26, 2013)
- World Health Organization (2009) Global Health Risks: Mortality and burden of disease attributable to selected

major risks. Available at http://whqlibdoc.who.int/publications/2009/9789241563871_eng.pdf (last accessed on May 26, 2013).

World Health Organization (2009) Global status report on alcohol. Available at

www.who.int/substance_abuse/.../global_status_report_2004_overview (last accessed on May 26, 2013).

Zibe-Piegel VP, Boerngen-Lacerda R. (2013) How to detect early harmful and hazardous substance use in workplace: A qualitative study. *J Alcoholism Drug Depend*, 1, 1 Available at <http://dx.doi.org/10.4172/jaldd.1000104> (last accessed on May 26, 2013)

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EFFECT OF ANXIETY AND DEPRESSION ON LONG TERM OUTCOME OF MYOCARDIAL INFARCTION

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Abstract

Objective: Anxiety and depressive symptoms are common following myocardial infarction (MI). The present study was conducted to assess the effect of anxiety and depression on clinical outcome at 18 months in patients with a recent MI.

Methods: Patients with a recent MI attending the cardiology outpatient of a tertiary care center formed the sample of the study. Demographic and clinical data was recorded. Anxiety and depressive symptoms were assessed at the baseline using standardized instruments. The patients were contacted telephonically at 18 months to ascertain the outcome.

Results: Out of original sample of 103, 66 patients could be contacted at 18 months. Out of the patients who could be followed up, about one third had a poor outcome at 18 months in the form of adverse cardiac event or death. Anxiety and depressive symptoms or having a psychiatric illness at the baseline did not influence outcome in this particular cohort.

Conclusions: Anxiety or depression by itself may not be a poor prognostic factor in patients with MI.

INTRODUCTION

Acute myocardial infarction (MI) is a serious and potentially fatal cardiovascular illness that is often associated with significant anxiety and depression. A five country study on anxiety following MI found anxiety levels to be 44% higher than the normal mean levels (De Jong et al. 2004). Others have reported prevalence of anxiety symptoms varying from 18 - 69% (Akhtar et al. 2004; Grace et al. 2004; Lane et al. 2002b). The reported prevalence of depression in patients with MI is generally in range of 15-25% (Forrester et al. 1992; Frasure-Smith et al. 1993, 1999; Legault et al. 1992; Lespérance et al. 2002), though some studies have found it to be no higher than in general population (Hanssen et al. 2009; Hosseini et al. 2011). One study however, has reported prevalence of depressive symptoms in acute coronary syndrome to be even higher than 80% (Vural et al. 2008).

Association of symptoms of depression and anxiety with the outcome following MI has also been studied by many research workers. Anxiety and depression in MI patients has been found to be associated with poorer outcomes in terms of increased cardiovascular and all cause mortality (Benninghoven et al. 2006; Carney et al. 2003; Dickens et al. 2004b; Frasure-Smith et al. 1993, 1995, 1999; Glassman et al. 2009). Anxiety and

depression have also been linked to adverse cardiac events like reinfarction and stroke, and requirement of percutaneous coronary intervention (Lauzon et al. 2003). However, other studies suggest that outcome and mortality of MI patients may not be affected by symptoms of anxiety or depression (Dickens et al. 2008; Hosseini et al. 2011; Lane et al. 2001, 2002a). Thus there is no clear consensus whether anxiety or depression after MI is associated with increased morbidity and mortality following MI.

India is facing increased prevalence of cardiovascular morbidity and mortality in the last 2-3 decades. There is a dearth of studies from India on relationship of anxiety and depression following MI with its long term outcome. The other causes of poorer prognosis in post-MI patients which include lack of intensive care facilities and ease of availability of expertise, poor adherence to treatment, and dietary factors may be different in India (Jollis et al. 1996; Tuttle et al. 2008) as compared to the other Western countries with better developed and integrated service delivery systems. Hence generalization of prognostic factors may not be straightforward for the developing countries. We have previously reported the findings of anxiety and depression in patients with MI and the short term outcome in a sample from a tertiary care centre in India

(Sarkar et al. 2012). Anxiety or depression at baseline did not predict poor outcome at short term follow up. This paper reports on our findings of a follow up of 18 months, and aimed to assess whether depression, anxiety or having a psychiatric diagnosis predicts adverse cardiac events or mortality on a longer follow up in patients with MI.

METHODS

Setting of the study and participants:

The study was conducted at the All India Institute of Medical Sciences, a tertiary care hospital in New Delhi, India. The Institute caters to patients from all over India, but mainly from near and around Delhi. The cardiology outpatient receives about 1500 patients per week. Patients attending the cardiology outpatient services at the institute, who had suffered MI in the past 3 months, were screened for the study. Patients aged between 40 to 75 years who were clinically stable for clinical interviews (determined by clinical judgement), and were conversant in English or Hindi were included in the study. The study had the approval of the Institute's ethics committee.

Procedure:

The present study was a longitudinal cohort of patients enrolled by purposive sampling. The patients were recruited if they fulfilled the inclusion and exclusion criteria and consented for the study. Information was gathered from the patients and their relatives using a structured questionnaire. The demographic details including age, gender, education, occupation, residence and per capita income were noted. Clinical details about recent MI episode, past episodes of MI and angina attacks, if any, were ascertained. History of smoking and alcohol use was also recorded. Smokers and alcohol users were defined as those who had consumed the abovementioned substances within 1 month prior to MI. History of hypertension and diabetes mellitus was also enquired for. Family history of anxiety and depression was also obtained.

A focussed physical examination was conducted. Body mass Index (BMI) was calculated from the weight and height of the patient. The results of the recent investigations done in the patient were obtained from the medical records. The patients were administered Mini International Neuropsychiatric Interview (MINI) (Sheehan et al. 1998), Hamilton Anxiety Rating Scale (HAM A) (Hamilton 1959) and Hamilton Depression Rating Scale (HAM D) (Hamilton 1960). Patients

detected to have a psychiatric illness were referred to the department of psychiatry of the institute for further management. All the assessments were conducted in a single session during the patient's visit to the hospital.

The patients were then followed up thereafter at 18 (± 1 months) to ascertain the outcome. Information was gathered from the patients themselves or their family members regarding the cardiac outcome. All the contact attempts were made in the evening hours (6 to 8 pm). In case telephonic contact could not be made on the first instance, a reattempt was made one week later. Outcome was considered poor if the patient had died of cardiac related illness or had an adverse cardiac event i.e. another episode of MI, cerebrovascular stroke, or angina requiring a percutaneous coronary intervention or bypass surgery.

Instruments:

The MINI (Sheehan et al. 1998) is a structured diagnostic interview for making psychiatric diagnosis, which gives diagnosis compatible with DSM-IV and ICD-10. The instrument is divided into modules corresponding to particular diagnostic categories. MINI elicits symptoms pertaining to criteria for DSM-IV and ICD-10 for 15 major Axis I diagnostic categories, one Axis II disorder, in addition to measuring suicidality. It consists of a screening questionnaire followed by modules which go into the depth of symptoms of psychiatric diagnoses. It takes about 20 minutes time to complete and has been well validated.

HAM-A (Hamilton 1959) and HAM-D (Hamilton 1960) are structured questionnaires to assess symptoms of anxiety and depression respectively. HAM A comprises of 14 items rated on a scale of 0 to 4. It includes questions relating to anxious mood, tension, fears, insomnia, somatic complaints and an assessment of behaviour at the interview. The score on this scale represents the severity of anxiety. Values of more than 5 reflect significant anxiety. Similarly, HAM D comprises of 17 items and includes symptoms like sadness, insomnia, guilt, suicidality etc. A cut off value of 8 on the scale is used to determine presence of depression, with higher scores reflecting a higher severity of depression.

Data analysis:

Data were analysed using SPSS (Version 15) package. Outcome was dichotomized into 'good' and 'poor' outcomes, and compared across various demographic and clinical parameters to find out significant associations using Student's t test and 2 test. A p value

< 0.05 was considered significant. Effect sizes for the two groups (good and poor outcome) were calculated using standardized mean differences.

RESULTS

A total of 103 patients were recruited for the study, of the 112 approached (4 did not give consent and 5 did not meet inclusion criteria of them two not being stable enough for interview). The demographic and clinical details of the sample at baseline and at follow up are shown in Table 1. About half (48.5%) of the subjects scored above the cut-off on HAM A, and one fourth were above the cut off on HAM D at baseline, reflecting

disorder (1.9%) and social phobia (1.0%). Details about the baseline characteristics and short term follow up characteristics have been described in a previous paper (Sarkar et al., 2012).

Outcome data were available for 66 patients at 18(±1) months (table 1). The follow up groups did not differ from the original sample with regards to demographic variables like age, education, occupation, and history of smoking and alcohol use. However, a significantly greater proportion of patients in the follow up period of 18(±1) months had a history of diabetes mellitus.

Table 1: Demographic and clinical characteristics of follow up data

Variables	Baseline (N=103) Mean ±SD Or n(%)	Follow up 18 months (n=66) Mean ±SD Or n(%)	No follow up at 18 months (n=66) Mean ±SD Or n(%)	2 / t value	p-value
Age	54.6 (±9.4)	54.6 (±9.6)	54.6 (±9.0)	0.018	0.986
Male Gender	91 (88.4%)	60 (91.0%)	34 (91.9%)	0.029	1.000§
Education above 10th grade	41 (39.9%)	29 (44.0%)	12 (32.4%)	1.310	0.252
Sedentary occupation	57 (55.4%)	33 (50.0%)	24 (64.9%)	2.120	0.145
History of smoking	61 (59.3%)	40 (60.7%)	21 (56.8%)	0.145	0.703
History of alcohol use	56 (54.4%)	34 (51.6%)	22 (59.5%)	0.603	0.437
History of hypertension	40 (38.9%)	25 (37.9%)	15 (40.6%)	0.071	0.790
History of diabetes mellitus	25 (24.3%)	21 (31.9%)	4 (10.9%)	5.692	0.018§*
History of angina	36 (35.0%)	24 (36.4%)	12 (32.5%)	0.161	0.688
Family history of anxiety/ depression	12 (11.7%)	8 (12.2%)	4 (10.9%)	0.040	1.000§
Increased BMI	36 (35.0%)	20 (30.4%)	16 (43.3%)	0.004	0.931
HAM A score at baseline	6.3 (±4.4)	6.1 (±3.6)	6.5 (±5.6)	0.462	0.645
HAM A scores > 5 (at baseline)	50 (48.6%)	32 (48.5%)	18 (48.7%)	0.000	0.987
HAM D score at baseline	5.4 (±3.9)	5.8 (±3.5)	4.9 (±4.5)	1.119	0.266
HAM D scores > 7 (at baseline)	26 (25.3%)	19 (28.8%)	7 (19%)	1.224	0.269
Any psychiatric diagnosis	26 (25.3%)	14 (21.3%)	12 (32.5%)	1.582	0.209

§Fisher's exact test was used as one of the groups had less than 5 subjects. * Significant values

significant anxiety and depression respectively. Mean HAM A and mean HAM D scores were 6.27 (±4.40) and 5.44 (±3.89) respectively. Most patients had score in the range of mild anxiety or mild depression. One fourth of the subjects received a psychiatric diagnosis, which included major depression (15.5%), agoraphobia (8.7%), generalized anxiety disorder (4.9%), panic

Differences were assessed between the outcome groups ('good' versus 'poor') across the demographic and clinical variables in the follow up period as shown in table 2. No significant differences were found between the two outcome groups across these variables. Anxiety and depression levels at baseline did not predict poor outcome or mortality at follow up (Table 2).

Table 2: Relationship of outcome with demographic and clinical variables

	Follow up at 18 months (N=66)		z / t value (p value)	Effect size (CI)
	Good outcome (N=44)	Poor outcome (N=22)		
Age	54.4 (±10.1)	54.9 (±8.9)	0.206 (0.837)	0.054 (-0.458 to 0.068)
Male Gender	40 (91.0%)	20 (91.0%)	0.000 (1.000§)	0 (-0.986 to 0.986)
Education above 10th grade	19 (43.2%)	10 (45.5%)	0.031 (0.861)	-0.051 (-0.619 to 0.516)
Sedentary occupation	21 (47.8%)	12 (54.6%)	0.273 (0.794§)	-0.150 (-0.716 to 0.416)
History of smoking	25 (56.9%)	15 (68.2%)	0.793 (0.373)	-0.267 (-0.862 to 0.327)
History of alcohol use	22 (50.0%)	12 (54.6%)	0.121 (0.728)	-0.102 (-0.668 to 0.464)
History of hypertension	15 (34.1%)	10 (45.5%)	0.805 (0.370)	-0.264 (-0.840 to 0.313)
History of diabetes mellitus	15 (34.1%)	6 (27.3%)	0.314 (0.575)	0.177 (-0.444 to 0.798)
History of angina	16 (36.4%)	8 (36.4%)	0.000 (1.000)	0 (-0.586 to 0.586)
Family history of anxiety/ depression	7 (16.0%)	1 (4.6%)	1.778 (0.252§)	0.757 (-0.429 to 1.943)
Increased BMI	14 (31.9%)	6 (27.3%)	0.143 (0.705)	0.122 (-0.502 to 0.746)
HAM A score at baseline	6.3 (±3.7)	5.9 (±3.4)	0.412 (0.682)	0.108 (-0.404 to 0.068)
HAM A Scores > 5 (at baseline)	24 (54.6%)	8 (36.4%)	1.941 (0.164)	0.409 (-0.170 to 0.989)
HAM D score at baseline	5.8 (±3.7)	5.7 (±3.2)	0.049 (0.961)	0.013 (-0.499 to 0.068)
HAM D scores > 7 (at baseline)	12 (27.3%)	7 (31.9%)	0.148 (0.701)	-0.122 (-0.737 to 0.493)
Any psychiatric diagnosis	10 (22.8%)	4 (18.2%)	0.181 (0.759)	0.156 (-0.556 to 0.868)

BMI-Body Mass Index, CI Confidence Interval, HAM-A - Hamilton Anxiety Rating Scale, HAM-D - Hamilton Depression Rating Scale, LVEF - Left Ventricular Ejection Fraction, MI - Myocardial Infarction, SD - Standard Deviation. § Fisher's exact test was used as one of the groups had less than 5 subjects.

A multivariate binary logistic regression using the enter method was conducted to find predictors of poor outcome at 18(±1) months. None of the demographic or clinical variables emerged as significant independent predictors of outcome. Using the backward Wald method, the closest model had a Nagelkerke R square value of 0.119 (explaining 11.9 percent of the variance), with HAM A and HAM D scores as the closest predictors (odds ratio of 3.760 and 2.892 with significance of 0.053 and 0.089).

DISCUSSION

In our study, about one third of the patients with MI had a poor outcome at 18 months follow up. Anxiety and depression in the immediate period following MI did not significantly influence the outcome. Various other clinical factors assessed also did not affect the outcome.

Relationship between anxiety and depressive symptoms with outcome following MI has been a complex one. Two recent meta-analyses (Meijer et al. 2011; van Melle et al. 2004) examining the relationship

of depression with cardiovascular outcome suggest that depression in post MI period may contribute to increased mortality. Depression has also been found to be associated with increased risk of rehospitalisation following MI (Reese et al. 2011). Severity of post MI depression may also be a factor affecting cardiac outcome (Wheeler et al. 2012). Moderate to severe depression has been found to be associated with cardiac and all-cause mortality, whereas mild depression is not. Our sample had mainly mild depressive symptoms, which may possibly explain the absence of association with adverse outcomes.

Post-MI anxiety has also been found to be associated with poorer outcome in patients in a meta-analysis (Roest et al. 2010). Similarly, presence of generalized anxiety disorder has been reported to increase the risk of adverse outcome in patients with MI (Roest et al. 2012). However, there have also been reports to the contrary. In a recent study (Parker et al. 2010), life time diagnosis of generalized anxiety disorder in patients with acute coronary syndrome has been found to be

associated with better cardiac prognosis. Thus our finding of anxiety not been associated with outcome following MI is not an unusual finding.

Caution needs to be exercised while interpreting the findings as possibility of publication bias had been raised, especially with regards to cardiovascular mortality (Meijer et al. 2011). It is possible that in some of our patients, the anxiety and depressive symptoms may not have been of fresh onset, since it was not specifically ascertained whether the symptoms had emerged after the episode of MI. Recent studies have shown that it is only post MI depression, which is associated with adverse cardiac outcome (van Melle et al. 2004).

Family support in Indian cultural context may also help in coping with depression and anxiety and hence indirectly improve the outcomes (Avasthi 2010). This is in consonance with a previous study which found that lack of a close confidant, rather than depression was associated with adverse outcome (Dickens et al. 2004a). Perceived social support has also been reported to be a predictor of cardiac mortality in patients with MI (Wheeler et al. 2012). In south Asia, families are often the main caregiver and also a main source of intimate support, which may help in overcoming adverse effects of mild anxiety and depression.

The study had limitations of having only a modest sample size, absence of assessment of anxiety and depression on follow up, and non availability of follow-up information for all the patients. Investigation results of all the patients were not available for analysis, and a considerable proportion of patients could not be re-contacted. Information was gathered telephonically and detailed case notes could not be accessed due to geographic dispersion of the patients and non-availability of electronic records across the country. Also, depression and anxiety were assessed cross sectionally, and a past diagnosis (without a current diagnosis) of anxiety or depressive disorder was not assessed. Treatment of psychiatric conditions and adherence to psychotropic medications if they were prescribed were not assessed. Hence the results of the study should be interpreted with caution.

This is to our knowledge the first follow-up study from India looking at outcomes of MI patients with regards to presence to anxiety and depressive symptoms. As per our results, mild anxiety or depression by itself may not be poor prognostic factor for MI patients. Considering the increasing prevalence of cardiovascular illnesses in

the South Asian countries, large scale multicentre studies may help to understand the influence of depression and anxiety on the outcome of coronary heart disease in this part of the world.

REFERENCES

- Akhtar, M.S., Malik, S.B. and Ahmed, M.M. (2004) Symptoms of depression and anxiety in post-myocardial infarction patients, *Journal of the College of Physicians and Surgeons--Pakistan: JCPSP*. 14, 615–8.
- Avasthi, A. (2010) Preserve and strengthen family to promote mental health, *Indian Journal of Psychiatry*. 52, 113–26.
- Benninghoven, D., Kaduk, A., Wiegand, U., et al. (2006) Influence of anxiety on the course of heart disease after acute myocardial infarction - risk factor or protective function?, *Psychotherapy and Psychosomatics*. 75, 56–61.
- Carney, R.M., Blumenthal, J.A., Catellier, D., et al. (2003) Depression as a risk factor for mortality after acute myocardial infarction, *The American Journal of Cardiology*. 92, 1277–81.
- Dickens, C., McGowan, L., Percival, C., et al. (2008) New onset depression following myocardial infarction predicts cardiac mortality, *Psychosomatic Medicine*. 70, 450–5.
- Dickens, C.M., McGowan, L., Percival, C., et al. (2004a) Lack of a close confidant, but not depression, predicts further cardiac events after myocardial infarction, *Heart (British Cardiac Society)*. 90, 518–22.
- Dickens, C.M., Percival, C., McGowan, L., et al. (2004b) The risk factors for depression in first myocardial infarction patients, *Psychological Medicine*. 34, 1083–92.
- Forrester, A.W., Lipsey, J.R., Teitelbaum, M.L., et al. (1992) Depression following myocardial infarction, *International Journal of Psychiatry in Medicine*. 22, 33–46.
- Frasure-Smith, N., Lespérance, F., Juneau, M., et al. (1999) Gender, depression, and one-year prognosis after myocardial infarction, *Psychosomatic Medicine*. 61, 26–37.
- Frasure-Smith, N., Lespérance, F. and Talajic, M. (1993) Depression following myocardial infarction. Impact on 6-month survival, *JAMA: the journal of the American Medical Association*. 270, 1819–25.

- Frasure-Smith, N., Lespérance, F. and Talajic, M. (1995) Depression and 18-month prognosis after myocardial infarction, *Circulation*. 91, 999–1005.
- Glassman, A.H., Bigger, J.T. and Gaffney, M. (2009) Psychiatric characteristics associated with long-term mortality among 361 patients having an acute coronary syndrome and major depression: seven-year follow-up of SADHART participants, *Archives of General Psychiatry*. 66, 1022–9.
- Grace, S.L., Abbey, S.E., Irvine, J., et al. (2004) Prospective examination of anxiety persistence and its relationship to cardiac symptoms and recurrent cardiac events, *Psychotherapy and Psychosomatics*. 73, 344–52.
- Hamilton, M. (1959) The assessment of anxiety states by rating, *British journal of medical psychology*. 32, 50–5.
- Hamilton, M. (1960) A rating scale for depression, *Journal of neurology, neurosurgery, and psychiatry*. 23, 56.
- Hanssen, T.A., Nordrehaug, J.E., Eide, G.E., et al. (2009) Anxiety and depression after acute myocardial infarction: an 18-month follow-up study with repeated measures and comparison with a reference population, *European Journal of Cardiovascular Prevention and Rehabilitation*. 16, 651–9.
- Hosseini, S.H., Yousefnejad, K., Tabiban, S., et al. (2011) Effects of depression and anxiety symptoms on cardiac mortality following myocardial infarction: a 2-year follow-up, *International Journal of Psychiatry in Clinical Practice*. 15, 91–6.
- Jollis, J.G., DeLong, E.R., Peterson, E.D., et al. (1996) Outcome of acute myocardial infarction according to the specialty of the admitting physician, *The New England Journal of Medicine*. 335, 1880–7.
- De Jong, M.J., Chung, M.L., Roser, L.P., et al. (2004) A five-country comparison of anxiety early after acute myocardial infarction, *European Journal of Cardiovascular Nursing: Journal of the Working Group on Cardiovascular Nursing of the European Society of Cardiology*. 3, 129–34.
- Lane, D., Carroll, D., Ring, C., et al. (2001) Mortality and quality of life 12 months after myocardial infarction: effects of depression and anxiety, *Psychosomatic Medicine*. 63, 221–30.
- Lane, D., Carroll, D., Ring, C., et al. (2002a) In-hospital symptoms of depression do not predict mortality 3 years after myocardial infarction, *International Journal of Epidemiology*. 31, 1179–82.
- Lane, D., Carroll, D., Ring, C., et al. (2002b) The prevalence and persistence of depression and anxiety following myocardial infarction, *British Journal of Health Psychology*. 7, 11–21.
- Lauzon, C., Beck, C.A., Huynh, T., et al. (2003) Depression and prognosis following hospital admission because of acute myocardial infarction, *CMAJ: Canadian Medical Association Journal*. 168, 547–52.
- Legault, S.E., Joffe, R.T. and Armstrong, P.W. (1992) Psychiatric morbidity during the early phase of coronary care for myocardial infarction: association with cardiac diagnosis and outcome, *Canadian Journal of Psychiatry*. 37, 316–25.
- Lespérance, F., Frasure-Smith, N., Talajic, M. and Bourassa, M.G. (2002) Five-year risk of cardiac mortality in relation to initial severity and one-year changes in depression symptoms after myocardial infarction, *Circulation*. 105, 1049–53.
- Meijer, A., Conradi, H.J., Bos, E.H., et al. (2011) Prognostic association of depression following myocardial infarction with mortality and cardiovascular events: a meta-analysis of 25 years of research, *General Hospital Psychiatry*. 33, 203–16.
- Van Melle, J.P., de Jonge, P., Spijkerman, T.A., Tijssen, J.G.P., et al. (2004) Prognostic association of depression following myocardial infarction with mortality and cardiovascular events: a meta-analysis, *Psychosomatic Medicine*. 66, 814–22.
- Parker, G.B., Owen, C.A., Brotchie, H.L. and Hyett, M.P. (2010) The impact of differing anxiety disorders on outcome following an acute coronary syndrome: time to start worrying?, *Depression and Anxiety*. 27, 302–9.
- Reese, R.L., Freedland, K.E., Steinmeyer, B.C., et al. (2011) Depression and rehospitalization following acute myocardial infarction, *Circulation. Cardiovascular Quality and Outcomes*. 4, 626–33.
- Roest, A.M., Martens, E.J., Denollet, J. and de Jonge, P. (2010) Prognostic association of anxiety post myocardial infarction with mortality and new cardiac events: a meta-analysis, *Psychosomatic Medicine*. 72, 563–9.
- Roest, A.M., Zuidersma, M. and de Jonge, P. (2012) Myocardial infarction and generalised anxiety disorder: 10-year follow-up, *The British Journal of Psychiatry*. 200, 324–9.

Sarkar, S., Chadda, R.K., Kumar, N. and Narang, R. (2012) Anxiety and depression in patients with myocardial infarction: findings from a centre in India, *General Hospital Psychiatry*. 34, 160–6.

Sheehan, D.V., Lecrubier, Y., Sheehan, K.H., et al. (1998) The Mini-International Neuropsychiatric Interview (M.I.N.I.): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10, *The Journal of clinical psychiatry*. 59,22–33.

Tuttle, K.R., Shuler, L.A., Packard, D.P., et al. (2008) Comparison of low-fat versus Mediterranean-style dietary intervention after first myocardial infarction (from The Heart Institute of Spokane Diet Intervention and Evaluation Trial), *The American Journal of Cardiology*. 101, 1523–30.

Vural, M., Acer, M. and Akba , B. (2008) The scores of Hamilton depression, anxiety, and panic agoraphobia rating scales in patients with acute coronary syndrome, *Anadolu kardiyoloji dergisi: AKD = the Anatolian journal of cardiology*. 8, 43–7.

Wheeler, A., Beltrame, J., Tucker, G., et al. (2012) Depression and 5-year mortality in patients with acute myocardial infarction: analysis of the IDACC database, *The Australian and New Zealand Journal of Psychiatry*. 46, 669–75.

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LONG TERM OUTCOME OF SUBSTANCE ABUSE TREATMENT THROUGH INTEGRATED CAMP APPROACH

Ajeet Sidana, B.S.Chavan, Rohit Garg, Jasvir Singh

Abstract

Introduction: Substance dependence is a chronic, relapsing disorder and requires long term care and treatment. Community based treatment is cost effective, closer to the community, community participation is more, it is less stigmatizing and patient can stay with his family during the treatment. **Objectives:** To see the outcome of patients of alcohol and drug abuse admitted in community de-addiction. **Method:** The patients of community de-addiction camps who were admitted from 1999-2010 were followed up in June, 2012 for the purpose of outcome. **Results:** Out of 172 patients, 147 patients could be contacted (85.46%). More than 52% of patients of alcohol and drug abuse could maintain abstinence for more than 10 years and more than 42% of patients could maintain abstinence between 2-10 years. **Conclusion:** Community based de-addiction camps is cost effective interventional strategy even for long term care of patients of alcohol and drug abuse.

Key Words: Long term, substance abuse, community camp

INTRODUCTION

In India, current use has been found to be 21.4% for alcohol, 0.7% for opiates and 3% for cannabis and approximately 17, 22 and 26 percent respectively of them may be dependent (Ray R, 2004). As per World Health Organisation, treatment gap in alcohol and drug abuse is 78.1% in spite of the availability of effective and cheap medications (Kohn et al., 2004). The reasons are lack of awareness about the treatment facilities, financial issues, distance from the hospital, stigma related to the substance use, myths and misconceptions i.e., substance dependence cannot be treated; it is a wilful behaviour and not a disorder. Many patients and their relatives think that admission is must for treatment (Kohn et al., 2004). In India most of the facilities in the medical colleges are provided along with mentally ill patients and beds are located inside the psychiatry wards. Patients are unwilling to get admitted with mentally ill patients. This emphasizes the need to design innovative methods to reach out to persons with substance dependence in the community. Camp approach is one such method.

The camp approach for substance dependence in India dates back to 1970's when camps for opium de-addiction were successfully organized at Jodhpur in Rajasthan (Purohit & Razdan; 1988). 3387 patients were treated at 77 camps between 1979 and 1986. The drop-out rate during these camps was 5.6% while abstinence at follow-up after 2-4 years was about 60-70% (Purohit

et al.; 1982, Purohit and Vyas; 1982). Similarly, four camps for alcohol dependence were organized in Manjakkudi, Tamil Nadu from 1989 – 1993 and in these camps 105 patients were treated. These camps were found to be very successful with an 82% abstinence rate at 1 year follow up (Ranganathan; 1994).

One of the lacunas of the earlier research on camp based treatment was that there are very few long term follows up studies. A recent review on substance dependence research in India highlighted the fact that long term follow up studies are disappointingly lacking in this area from the country (Murthy et al.; 2010). One study on 5 year follow up of 800 patients treated at a de-addiction centre revealed that 63% had not utilised treatment services beyond 1 month (Chandrasekaran et al.; 2001). In a study done in community setting, the patient group from a low socio-economic status who received weekly follow up or home visit at a clinic located within the slum showed improvement at the end of month 3, 6 and 9, and one year, in comparison with a control group that received no active follow-up intervention (Murthy et al.; 2009) In other study, poor outcome has been associated with higher psychosocial problems, family history of alcoholism and more follow-up with mental health services (Kar et al.; 2003) and good outcome with higher income and longer duration of in-patient treatment (Prasad et al.; 2000). However, most of these studies except one (Chandrasekaran et al.; 2001) have followed up the patients only up to 1 year.

Studies from outside the country have shown variable results. Negative life transitions were associated with worse outcomes at 5 – 9 years follow up and social support was associated with good outcomes (Satre et al.; 2012). Studies on alcohol dependent subjects have shown more than 50% abstinence rate at 9 years (Krampe et al.; 2006) and 16 years follow up (Mann et al.; 2005). Similar findings have been reported by another study (Gual et al.; 2009)

Hence, the current study was planned to carry out long term follow up of patients of alcohol and drug dependence who were admitted at various deaddiction camps within the community from 1999 to 2010.

METHOD

About the Organisation: The department of Psychiatry, Government Medical College and Hospital, Chandigarh has been organizing de-addiction camps in the periphery of Chandigarh as this population has less facility as compared to the population staying in the urban sectors. Also, the utilization of the health facilities is less and the prevalence of substance abuse is higher. The department of psychiatry has been providing community outreach facilities for treatment of common mental disorders and substance abuse disorders in the periphery of Chandigarh since 1997.

Preparation of camp: Selection of village: The preparation for the indoor community based camp used to start at least 2 months in advance. The site for the indoor camps was selected mostly at the outskirts of Chandigarh where the prevalence of alcohol and drug abuse was known to be high. It is noteworthy that the department runs regular once a week community clinics in most of the villages where the camps were held. So, it was not difficult for us to contact the local leaders and identify persons who were abusing drug and alcohol and were willing for admission.

Availability of infrastructure: The site was selected to accommodate at least 25 – 30 patients. The selected site, in addition to space for the patients had adequate space for the staff including separate rooms for doctors, staff nurses and counselors. In most of the camps, it was a big hall located inside a religious place or community health centre. There was adequate arrangements made for a meeting place for family members with the patient and for the recreation purposes as these were closed camps. The site used to have a boundary wall, adequate toilet and bathing facilities. The food for patients used to be prepared at the local gurudwara and it was mostly arranged by the sarpanch (head of village) or local

community leaders. The arrangement for the beddings was made either by the community or the family of the patient.

Campaigning about camp: There was aggressive campaigning for all the camps via pamphlets, posters, announcements using vehicles, loud speakers at gurudwaras and temples, local community leaders, teachers, members of Alcoholics Anonymous and Narcotics Anonymous etc. During this campaigning, the site, duration and purpose of the camps were explained. The index person for this purpose was the community social worker who used to coordinate with all the stakeholders.

Identification/ screening of patients: The patients were selected very carefully for the camps. The department received lot of help from the local community leaders while selecting the patients. Persons with history of complicated withdrawals, deviant personality, suspected or diagnosed medical or psychiatric comorbidity or those who had frequent legal problems related to substance abuse and were likely to create disciplinary problems were excluded from admission into these camps. These cases were referred to the indoor facilities of the department.

Daily assessment of indoor patients: During the camp stay, all the medications for withdrawal were provided free to the patients. In addition to medication, patients were provided alternative intensive therapy in the form of prayer and yoga in the morning; group sessions with the psychologists and counselors, family therapy and counseling. Family members were told to meet the patient almost on a daily basis for an hour in the evening so that the patients do not feel like they have been neglected and dumped by the family. Recreation facilities were made available for the patients. In addition, meetings with Alcoholics Anonymous and Narcotics Anonymous were regularly held during the camps. For the purpose of recreation and entertainment, street play, magic shows and local sports were organised regularly.

Inauguration of camp: The camp would generally be inaugurated by the officer from the social and health department, so that the community leaders can get a chance to express their social and health problems to the concerned person and the chief guest was always decided by the local body. The camps were concluded on 10th day. Patients requiring further indoor treatment were shifted to the hospital. The follow up arrangement was made at the site of camp for next 3

months and after that patients were attached to nearby community outreach clinic.

Follow up at camp site: After the conclusion of camp, patients were followed up at the camp site on weekly basis for at least a month and after that these patients were attached to the nearby community outreach clinic for further follow up and treatment. During these visits to the community outreach clinics, patient would be seen by a psychiatrist and social worker. Patients who dropped out of the follow up for more than 2 weeks were visited by the social worker and motivated to return for treatment. The social worker would make a home visit to almost all the patients and even take the help of the local community leaders to bring the patient back to treatment. Thus, it was ensured that most of the patients remained in treatment at least for 3 months.

Sample: This study report on patients who were treated in community based indoor camps from 1999 to 2010. These patients were contacted by the research worker in June 2012. They were contacted at their home to find out the current status of substance abuse and over all functioning. In addition to interview with the patient, information was collected from the family and community leaders. Since it was a close nit community, most of the community leaders had sufficient information about the over all functioning of the patient. With the help of local community leaders, we were able to contact most of the patients who were treated in the camps. The sociodemographic and clinical parameters of these patients were available with the department. At follow up, the status of substance use was recorded under 3 headings a) Abstinent b) Relapsed c) Intermittent use of substance. In addition, other parameters like substance related problems, overall functioning was recorded.

For the purpose of study; abstinence means that patient has not used the substance at all since he was discharged from the camp, relapse means that patient got relapsed and fulfilled the dependence criteria (including binge drinking) and intermittent use means that the patient is using the substance occasionally and socially.

For the purpose of reporting and convenience, the follow up has been divided into 2 – 10 years and more than 10 years of follow up.

RESULTS

A total of 9 camps were held between 1999 and 2010 and 182 patients were admitted in these camps. Out of 182 patients, 10 patients died due to various unknown reasons as reported by the community and we could not contact their families. Hence, exact cause of death could not be ascertained. Out of remaining 172 patients, we were able to contact 147 patients (Contact rate 85.46%). So, the final analysis is done for 147 patients. The patients treated till 2003 were included into group 1 and the rest of the patients were included in group 2. Table 1 shows the sociodemographic and clinical data of the patients in the two groups. As can be seen from the table 1, the patients in two groups were not significantly different in terms of all the parameters except type of family. Out of the 65 patients who were admitted prior to 2003, 34 (52.31%) were abstinent, 15 (23.07%) were using the substance intermittently and 16 (24.62%) had relapsed. Out of 82 patients admitted after 2003, 35 (42.68%) were abstinent, 13 (15.85%) were intermittent users and 34 (41.46%) relapsed.

Table 2 shows the type of substance the patients used before admission and the status of substances at follow up. The two groups were different in terms of type of primary and secondary substances used. The primary substance used by the patients before admission to the camp was alcohol (69), opiates (38), solvents (15), I.V. drugs (14), cannabis (8) and nicotine (3) in the order of decreasing frequency. The secondary substances used in order of decreasing frequency were nicotine (62), alcohol (25), opiates (18) and cannabis (12). However, the status of patients at follow up was similar in the 2 groups.

Table 3 shows the correlation of status of substance at follow up with sociodemographic and clinical parameters. It can be seen from the table that the status of substance did not change significantly as a function of any of the parameters.

Table 4 shows the status of substance as correlated with months of regular substance use before admission and months of follow up and number of follow up visits after admission.

Table 1: Sociodemographic and clinical data of the participants

Variable	Category	Time since admission		P value
		Follow up > 10 years (65)	Follow up 3-10 years (82)	
Age groups	< 20 years (33)	2	31	0.701
	21 – 30 years (54)	32	22	
	31 – 40 years (40)	22	18	
	40 years (20)	9	11	
Occupation	Unemployed (12)	5	7	0.981
	Unskilled/semiskilled (55)	31	24	
	Skilled (49)	19	30	
	Govt. job (7)	5	2	
	Private job (11)	3	8	
	Student (13)	2	11	
Years of formal education	Illiterate (38)	14	24	0.862
	< 10 years (94)	41	53	
	10 years (15)	10	5	
Monthly family income	< 5000 (110)	48	62	0.963
	5000 – 10000 (29)	13	16	
	10000 (8)	4	4	
Family type	Nuclear (82)	30	52	0.006
	Joint (65)	35	30	
Family history	Present (73)	31	42	0.317
	Absent (74)	34	40	

Table 2: Types of substances used and status at follow up

Variable	Category	Time since admission		P value
		Follow up > 10 years	Follow up 2-10 years	
Primary substance	Alcohol (69)	32	37	0.003
	I.V. drugs (14)	4	10	
	Opiates (38)	26	12	
	Cannabis (8)	2	6	
	Nicotine (3)	0	3	
	Solvents (15)	1	14	
Secondary substance	Alcohol (25)	17	8	0.008
	Opiates (18)	12	6	
	Cannabis (9)	3	6	
	Nicotine (62)	19	43	
	Benzodiazepine (1)	0	1	
	Diazepam (1)	1	0	
Status of substance at follow up	Abstinent (69)	34	35	0.899
	Intermittent (28)	15	13	
	Syndromal (50)	16	34	

Table 3: Correlation of status of substance at follow up with the sociodemographic and clinical variables

Category	Sub Category	Status of substance to follow up			P value
		Abstinent (69)	Syndromal use (50)	Intermittent use (28)	
Age groups	< 20 years (33)	19 (57.5)	9 (27.27)	5 (15.15)	0.368
	21 – 30 years (54)	23 (42.59)	24 (44.44)	7 (12.96)	
	31 – 40 years (40)	18 (45.0)	11 (27.5)	11 (27.5)	
	40 years (20)	9 (45)	6 (30)	5 (25)	
Education	Illiterate (38)	15 (39.47)	13 (34.21)	10 (26.31)	0.111
	< 10 years (94)	46 (48.93)	36 (38.29)	12 (12.76)	
	10 years (15)	8 (53.33)	1 (6.67)	6 (40)	
Occupation	Unemployed (12)	6 (50)	3 (25)	3 (25)	0.782
	Unskilled/ semiskilled (55)	26 (47.27)	21 (38.18)	8 (14.54)	
	Skilled (49)	20 (40.82)	16 (32.65)	13 (26.53)	
	Govt. job (9)	5 (55.56)	3 (33.33)	1 (11.11)	
	Private job (11)	6 (54.54)	3 (27.27)	2 (18.18)	
	Student (11)	6 (54.54)	4 (36.36)	1 (9.09)	
Family type	Family type	36 (43.90)	29 (35.36)	17 (20.73)	0.818
	Joint (65)	33 (50.77)	21 (32.31)	11 (16.92)	
Monthly family income (INR)	< 5000 (110)	49 (44.54)	41 (37.27)	20 (18.18)	0.387
	5000 – 10000 (29)	18 (62.07)	6 (20.69)	5 (17.24)	
	> 10000 (8)	2 (25)	3 (37.5)	3 (37.5)	
Family history of substance abuse/ mental illness	Present (73)	34 (46.57)	28 (38.36)	11 (15.07)	0.463
	Absent (74)	35 (47.30)	22 (29.73)	17 (22.97)	
Primary substance	Alcohol (69)	25 (36.23)	25 (36.23)	19 (27.53)	0.063
	I.V. drug (14)	7 (50)	6 (42.85)	1 (7.14)	
	Other opiates (38)	23 (60.52)	9 (23.68)	6 (15.78)	
	Cannabis (8)	5 (62.50)	2 (25)	1 (12.50)	
	Nicotine (3)	2 (66.67)	1 (33.33)	0	
	Solvents (15)	7 (46.66)	7 (46.66)	1 (6.67)	

Table 4: Regular use before admission and follow up after admission

Variable	Status of substance to follow up			P value
	Abstinent (69)	Syndromal (50)	Intermittent use (28)	
Regular use in months before admission (mean ; sd)	109.04 (109.170)	113.98 (91.970)	124.06 (115.787)	0.518
Months of follow up after admission (mean ; sd)	7.32 (12.973)	5.10 (13.536)	3.79 (6.411)	0.348
Number of follow up visits after (mean; sd) admission	10.05 (15.486)	6.75 (14.469)	7.03 (16.804)	0.401

DISCUSSION

The biggest strength of the present study is the excellent follow up rate as we were able to follow up 85.46% (147 out of 172) patients after a long gap. Another major strength is the long follow up period. The authors were able to personally contact 44.21% patients admitted prior to 2003 (65 out of 147) after more than 10 years of their admission into the community based indoor deaddiction camp. Since the patients of the last camp held in 2010 have also been included in the study, the minimum follow up of the remaining patients was at least 2 years. Hence, majority of the patients in the present study have been followed up for a longer time period as compared to some previous studies (Kar et al.; 2003, Murthy et al.; 2009, Prasad et al.; 2000). When we tried to look for their follow up after discharge from the camp, it was found that the mean follow up of patients admitted before 2003 is 4.53 ± 12.233 months and those admitted after 2003 is 6.93 ± 12.349 months. Long term follow up is important as substance abuse is a relapsing and remitting disorder. After detoxification, the main goal of continuing care is to provide ongoing support and counseling to help patients to cope with craving, remaining withdrawal symptoms, social and legal issues which arose during the substance use. Many patients experience new challenges after the initial phase of treatment and regular follow up provides opportunity for patients and their family members to discuss these challenges. The regular follow up also ensure management of brief episodes of use (i.e., "slips") from escalating into more serious relapses that could jeopardise remission status (Mckay et al., 2010). In one previous study from India, 63% out of 800 patients of alcohol dependence treated at a de-addiction centre did not utilise treatment services beyond one month (Chandrasekharan et al.; 2001). In another community based study, the patient group that received weekly follow up or home visit at a clinic located within the slum showed improvement at the end of month 3, 6 and 9, and one year, in comparison with a control group that received no active follow-up intervention (Murthy et al.; 2009). It has been seen that the maximum drop out rate was found to be within 3 – 6 months (Prasad et al.; 2000). Thus, it is again emphasised that continuing care interventions are hugely important in patients with alcohol and drug dependence.

It is notable that at 10 years of follow up, almost 50% of the patient could maintain abstinence in group 1. In

addition, another 25% of the patients were using the substance only intermittently. Thus, 75% patients showed a good outcome at 10 years of follow up. The relapse rate in this group was only 25%. This is similar to the previous camps that have been held in Jodhpur and Chennai. In Jodhpur camps, the abstinent rate at 2 -4 years follow up was 60 – 70% (Purohit et al., 1982a, Purohit et al., 1982b). In the Chennai camps, the abstinence rate at 1 year follow up was 82.9% (Ranganathan, 1994). In another Indian study, at 1 year follow up, 32.5% patients were abstinent or non problem drinkers (Abraham et al., 1997). In a meta-analysis of alcoholism treatment outcome studies, average short-term abstinence rates were 21% for untreated individuals (Moyer & Finney; 2002) in waiting-list, no-treatment or placebo conditions, compared to 43% for treated individuals (Monahan & Finney; 1996).

Similarly, among patients with 3 – 10 years of follow up, about 40% patients remained abstinent, 18% were using the substance only intermittently and thus, about 60% have a very good outcome. One of the reasons for a good outcome at 10 years in our study and many other studies could be attributed to the naturalistic course of alcohol and substance use disorders. It has been seen that alcohol and substance use disorders decline with time and age in many persons (Delucchi and Kaskutas; 2010). This can be one reason for good outcome in a long term follow up study like the present study.

The benefits of a community camp approach over the hospital settings cannot be over emphasized. It is cost effective, closer to the community, community participation is more, it is less stigmatizing and patient can stay with his family during the treatment. This builds their confidence that patient is really abstinent. When patients are treated in the hospital setting, many family members believe that the patients might be using drugs inside the ward also. Peer pressure which is commonly mentioned as a major reason for relapse (Sharma et al.; 2012) after discharge from the hospital is handled simultaneously in the community based intervention.

The mean age of the patients in our study was 29.94 years (sd = 12.419; Range 10 – 70). The mean duration of regular use of substance before admission was 113.88 ± 104.606 months (range 2 - 540) months i.e., 9 years. This implies that majority of patients in this study were taking the substance for longer period of time and thus better outcome can not be attributed to shorter duration and milder cases. The earlier studies have

reported that lesser is the age of initiation of a substance, more are the chances of worse outcomes related to substance dependence (Delucchi & Kaskutas; 2010, Mccambridge et al.; 2011, Sloan et al.; 2011). This is the major reason that we should follow the principal of "prevention is better than cure" in substance dependence. Through the community based approaches, it is possible to initiate community based awareness programmes for early identification and early intervention. Community can become major stakeholder in implementing preventive intervention.

The primary substance used by the patients before admission to the camp was alcohol (69), opiates (38), solvents (15) i.v. drugs (14), cannabis (8) and nicotine (3) in the order of decreasing frequency. The secondary substances used in order of decreasing frequency were nicotine (62), alcohol (25), opiates (18) and cannabis (12). The authors of this paper were surprised to find that majority of the patients used tobacco (both smoking and chewing) and it had wide social sanction. This perception of the community needs to be changed through community campaign against tobacco which is a major killer in the world, more so in the developing countries. An earlier study has reported that that stopping smoking during the first year of treatment from alcohol dependence predicted better outcomes at 9 years follow up (Tsoh et al.; 2011).

In our study, none of the sociodemographic and clinical parameters affected the outcome at follow up. In a follow-up study on patients with alcohol dependence, higher income and longer duration of in-patient treatment were found to positively correlate with improved outcome at three month follow up (Prasad et al.; 2000). In a one-year prospective study of outcome following de-addiction treatment, poor outcome was associated with higher psychosocial problems, family history of alcoholism and more follow-up with mental health services (Kar et al.; 2003)

Current findings clearly suggest the importance and utility of community de-addiction camps for the treatment of alcohol and drug abuse. It is cheaper, less stigmatizing and closer to the community. The results of the current study clearly suggest that community based deaddiction services are associated with more acceptances, higher rates of abstinence and lower rates of relapse at follow up. In addition to detoxification services, it is necessary to have long term ongoing follow up to ensure counseling of the family and the patient. Thus, the focus for deaddiction services should

be on developing more community based services especially in a developing country like India where facilities for treatment are lesser, population is poorer and awareness regarding treatment facilities is low. Apart from treatment, these community based facilities are the best way to raise awareness regarding substance dependence.

This study has a few limitations. Firstly, the interview was done in the front of the family members. It is possible that many of the patients could have hidden the facts from the interviewer. Even the family members could have hesitated to reveal the actual status in front of the patient. Secondly, no blood/urine screening was done to substantiate the claim of abstinence by patient and family members. The reporting of outcome in the study has been done on the basis of the verbal report of the patient only. Thirdly, the follow up was done after a long time interval of many years for most patients (minimum 2 years). An ideally study should have followed up the patients at regular intervals rather than once after such a long time.

REFERENCES

- Chandrasekaran R, Sivaprakash B, Chitrалека V. (2001) Five years of alcohol de-addiction services in a tertiary care general hospital. *Indian Journal of Psychiatry*, 43, 58–60.
- Delucchi KL & Kaskutas LA. (2010) Following Problem Drinkers Over Eleven Years: Understanding Changes in Alcohol Consumption. *Journal of Study on Alcohol and Drugs*, 71(6), 831–836.
- Gual A, Bravo F, Lligoña A et al. (2009) Treatment for Alcohol Dependence in Catalonia: Health Outcomes and Stability of Drinking Patterns over 20 Years in 850 Patients. *Alcohol and Alcoholism*, 44 (4), 409-415.
- Kar N, Sengupta S, Sharma P et al. (2003) Predictors of outcome following alcohol deaddiction treatment: Prospective longitudinal study for one year. *Indian Journal of Psychiatry*, 45, 174–177.
- Kohn R, Saxena S, Levav I et al. (2004) The treatment gap in mental health care. *Bulletin of the World Health Organization*, 82, 858-866.
- Krampe H, Stawicki S, Wagner T et al. (2006) Follow-up of 180 alcoholic patients for up to 7 years after outpatient treatment: impact of alcohol deterrents on outcome. *Alcoholism: Clinical and Experimental Research*, 30(1), 86-95.

- Mann K, Schäfer DR, Längle G et al. (2005) The long-term course of alcoholism, 5, 10 and 16 years after treatment. *Addiction*, 100(6), 797-805.
- McCambridge J, McAlaney J, Row R. (2011) Adult Consequences of Late Adolescent Alcohol Consumption: A Systematic Review of Cohort Studies. *PLoS Medicine*, 8 (2), E1000413.
- Mckay JR, Van Horn DH, Oslin DW et al. (2010) A randomized trial of extended telephone based continuing care for alcohol dependence: within treatment substance use outcomes. *Journal of consulting and clinical psychology*, 78 (6), 912 - 923.
- Monahan SC, Finney JW. (1996) Explaining abstinence rates following treatment for alcohol abuse: a quantitative synthesis of patient, research design and treatment effects. *Addiction*, 91(6), 787-805.
- Moyer A, Finney JW. (2002) Review Outcomes for untreated individuals involved in randomized trials of alcohol treatment. *Journal of Substance Abuse Treatment*, 23(3), 247- 252.
- Murthy P, Chand P, Harish MG et al. (2009) Outcome of alcohol dependence: The role of continued care. *Indian Journal of Community Medicine*, 34, 148–51.
- Murthy P, Manjunatha N, Subodh BN et al. (2010) Substance use and addiction research in India. *Indian Journal of Psychiatry*, 52 (Suppl1), S189–S199.
- Prasad S, Murthy P, Subbakrishna DK et al. (2000) Treatment setting and follow up in alcohol dependence. *Indian Journal of Psychiatry*, 42, 387–392.
- Purohit DR & Razdan VK. (1988) Evolution and appraisal of community camp-approach to opium detoxification in north-India. *Indian journal of Social Psychiatry*, 4, 15-21.
- Purohit DR & Vyas BR. (1982) Opium addiction treatment camp: A follow-up study. *Journal of Clinical Psychiatry*, 1982, 55.
- Purohit DR, Vyas BR, Limba PR. (1982) Opium de-addiction camp II. *Journal of Clinical Psychiatry*, 1982, 98.
- Ranganathan S. (1994) The Manjakkuddi experience: A camp approach towards treating alcoholics. *Addiction*, 89, 1071-1075.
- Ray R. (2004) Extent, patterns and trends of drug use in India- National survey. New Delhi, UNODC-ROSA and MSJE, GoI, 2004.
- Satre DD, Chi FW, Mertens JR et al. (2012) Effects of Age and Life Transitions on Alcohol and Drug Treatment Outcome Over Nine Years. *Journal of Studies on Alcohol and Drugs*,. 2012 May; 73(3): 459–468.
- Sharma AK, Upadhyaya SK, Bansal P, Nijhawan M, Sharma DK. (2012) A study of factors affecting relapse in substance abuse, *Indian Journal of Life Sciences*, 2 (1), 31 – 35.
- Sloan F, Grossman D, Platt A. (2011) Heavy Episodic Drinking in Early Adulthood and Outcomes in Midlife. *Journal of Study on Alcohol and Drugs*, 72(3), 459–470.
- Tsoh JY, Chi FW, Mertens JR et al. (2011) Stopping smoking during first year of substance use treatment predicted 9-year alcohol and drug treatment outcomes. *Drug and Alcohol Dependence*, 114 (2-3), 110–118.

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STUDY OF NON-COMPLIANCE IN PSYCHIATRIC PATIENTS

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Abstract

Introduction: Patients who do not follow the treatment schedule and drug regimens prescribed to them by physician can be described as non-compliant. Common reasons for non-compliance are illness and patient related factors, side effects of medication, and doctor-patient relationship. **Aims and objectives:** To study the socio-demographic profile and the reasons for non-compliance of treatment in patients suffering from psychiatric illnesses. **Material and methods:** Study conducted in psychiatric O.P.D. of a general teaching hospital. One hundred consecutive non-compliant patients in age group between 18-60 years were included. These patients had missed their medicines and the symptoms had worsened. Socio-demographic profile and reasons for non-compliance were noted using a semi-structured proforma. **Results:** Improvement in patient's illness is the most common reason of stopping medicines (36%) followed by the distance of commuting (23%) and the side effect of medication (20%). Forty percent of non-compliant patients suffered from schizophrenia. **Conclusion:** Several factors are related to non-compliance including awareness-related, illness-related, treatment-related and practical consideration related. Psychoeducation may be partly helpful.

KEY WORDS: Non-compliance, adherence, mental illness.

INTRODUCTION:

Patients who do not follow the treatment schedule or the medication prescribed to them can be described as non-compliant. Non-compliance is a significant problem in both developed and developing countries. It applies to nearly all patient population from children to the elderly and all chronic disease states. By its very nature psychiatric illness that impairs judgment, insight and stability places psychiatric patients at increased risk for medication non-compliance (Kane 1985). The most common reasons for non-compliance are illness and patient related factors, side effects of medication, and doctor-patient relationship. It tends to worsen with the duration of drug therapy. Compliance is directly related to the prognosis of the illness. Relapse often occurs because of non-compliance and requires re-hospitalization (Crane et al. 1996). According to Lehne et al (1994) 70% of noncompliance cases are intentional, because most of patient's belief that the medicine is not required in the actual prescribed dosage. In addition, unpleasant medication side effects, as well as the patient's denial of the severity or presence of the mental illness contribute to medication non-compliance (Crane et al. 1996). Hence, the current study was undertaken to find the reasons of non-compliance in our patients so that we can improve the treatment compliance.

AIMS AND OBJECTIVES:

- 1) To study socio-demographic profile of the non-compliant patient.
- 2) To study the reasons for non-compliance in these patients.
- 3) To study the types of psychiatric illnesses in these patients.

MATERIALS AND METHODS:

Study was conducted in psychiatric O.P.D. of a general teaching hospital. 100 consecutive non-compliant patients in the age group of 18-60 years were included in the study. Those patients who missed their medicines and their symptoms worsened were interviewed. Socio-demographic information and the reasons for non-compliance were noted using a semi-structured proforma specifically designed for the study. Informed consent was taken.

RESULTS AND DISCUSSION:

In our study non-compliance was observed in 40% of the patients in the age group of 18-30yrs, 41% were between 31-45yrs and 19% were in the age group of 46-60yrs. Males (55%) were more than females (45%). Majority (68%) were married and 28% unmarried. 84% of the patients had minimum of primary education and only 16% were illiterate.

Improvement in patients illness was the most common reason for non-compliance (36%) followed by the

distance of commuting (23%), side effect of medication (20%) and availability and cost of medicine (6% and 4% respectively).

Forty percent of non-compliant patients suffered from schizophrenia. Depressed patients were 28% and other psychotic disorders 14%. Other diagnostic categories were anxiety disorder (8%), substance use disorder (6%) and dementia (4%).

As seen in table-1, majority of the non-compliant patients (81%) were between age group 18-45yrs and only 19% were between 45- 60yrs. Similar findings have been observed by Agarwal et al. (1998), Gillis et al. (1982) and Selen et al. (2003). This shows younger the age higher the risk for non-compliance but at the older age compliance is better, probably because the responsibility comes with the maturity of age. Schwartz and Wang (1962) & Linden (1987) also have reported a positive relationship between older age and compliance. In our study male preponderance is seen which is in keeping with study by Gillis et al. (1982) whereas, study done by Selen et al. (2003) had more of female non-compliant patients.

Most of our non-compliant patients (84%) had minimum of primary education unlike the findings of Selen et al. (2003) where most of the compliant patients were educated. Hence, other factors such as illness and treatment related factors, financial status, awareness about the illness and its treatment etc. are probably contributing more towards compliance other than education alone. It is evident from our study that though most of the patients were educated the above factors contributed majorly in the non-compliance.

TABLE 1: SOCIO - DEMOGRAPHIC DATA

AGE	%
18-30	40
31-45	41
46-60	19
SEX	
Male	55
Female	45
MARITAL STATUS	
Unmarried	28
Married	68
Widow	4
EDUCATION	
Uneducated	16
Primary	19
Secondary	26
Graduation	9

Table- 2 shows the reasons for non-compliance in our study group. Improvement in illness (36%), side effect of medication (20%), availability and cost of medicine (6% & 4% respectively) are the illness and treatment related factors that played major role in non-compliance. In this study the distance of commuting (23%) was also observed to be one of the major factors. Probably the travelling cost would increase if the hospital is not well connected and easily accessible. Roy et al. (2005) also observed the same in their study. Also the frequent visits required for the treatment and an accompanying person with the patient add to the cost of travelling. Other factors (9%) included the financial stressors, doctor-patient relationship and no improvement.

TABLE 2: REASONS FOR DISCONTINUATION

Reasons for discontinuation	%
Improvement	36%
Distance	23%
Side effects	22%
Availability of medicine	6%
Cost of medicine	4%
Others	9%

How doctors communicate and what information they present to their patients and families plays a significant role in determining compliance. Doctors who believe in the medications they are prescribing and actively involve their patients in treatment decisions are likely to increase compliance. Expressing an understanding, empathic and caring manner will further promote compliance.

According to Demyttenwere (1997) the dropout rate is attributed to illness and patient's characteristics, time taken to improve or patient-doctor relationship. Findings of study by Roy et al. (2005) are almost similar to our study & lack of caregiver, lack of insight into illness and lack of awareness about long-term treatment are some of the other reasons found by Roy et al. (2005) and Selen et al. (2003). Avasthi et al. (1998) also found that major reason of noncompliance was ill effects of medicines. Other factors were apprehension of habituation, no one cares at home, and non-availability of medicines. Study by Sharif et al. (2003) has also observed side effects of medications to be the major reason for non-compliance. Respondent's different belief system, dislike for injections, non involvement of patients in their own management, social stigma by particular religious group and cancellation of disability grant were some of the other reasons for non-compliance.

It was observed in our study that 73% of patients were taking medications on their own in spite of having social support system. Primary caregiver of these patients were the only earning members of the family hence, taking medicines was left solely to the patient. This may have added to the non-compliance. Non-compliant patients see no reason for taking medication because they may not consider themselves to be ill, or they may see taking the medication as the wrong way to solve their problems. (Johnson and Freeman 1973; Johnson 1977; Soskis 1978). On the other hand when patients found improvement, they became careless about medicine, and if they did not find significant improvement they did not adhere to prescribed medicine (Agarwal 1998). Availability and cost of medicine was not much of a problem as basic drugs were available free of cost in the hospital. Patients had to buy only higher generation medicines if required.

Table- 3, shows the type of psychiatric illnesses in these patients. 40% of the patients suffered from schizophrenia which is a debilitating disease and usually patients have low or no insight in their illness and so are not ready to take treatment. Selen et al. (2003) has also observed poor compliance in 40% of schizophrenia out-patients. Bebbington (1995) found that Non-compliance may occur in up to 50% of patients with schizophrenia who are prescribed neuroleptics. Albus (1995) mentioned in his study that a biologically oriented model of illness (in which schizophrenia is viewed primarily as a metabolic disorder) also increases medication compliance, whereas a psychosocial model of illness (in which schizophrenia is seen as the consequence of problems an individual has with his or her environment) reduces compliance.

TABLE 3: PSYCHIATRIC DIAGNOSIS

Psychiatric Diagnosis	%
Schizophrenia	40%
Depression	28%
Anxiety disorders	8%
Substance use	6%
Dementia	4%
Other psychotic disorders	14%

Depression was diagnosed in 28% of patients. Katon (1996) found that more than 50% of depressed patients discontinue treatment prematurely. According to Pampollona (2002) epidemiological studies confirm that about one in three patients could not complete treatment. The reasons for poor compliance include

unpleasant side effects and not feeling better. In addition, beliefs and attitudes to treatment can be a major influence (Demyttenaere 2001). Although there are many factors affecting adherence to antidepressants in both short and long term treatment, clinician behaviours including prescribing practices and patient education are the most modifiable and may be the most successful approaches (Shelton 2007).

Substance abuse co-morbidity has been associated with generally poor outcome among mentally ill patients. Haywood and co-workers (1995) found high rates of alcohol or other drug abuse and medication non-compliance in mental hospital patients who had multiple readmissions medication. Non-compliance was strongly associated with substance abuse among schizophrenia Patients as they might be self medicating with psychoactive substances themselves at their home. (Maheshwari 2009)

In this study 62% of patients had duration of illness more than 2yrs. 70% of patients became irregular on medicines within 3 months of starting medications. Study by Roy et al. (2005) also showed that maximum non-compliance was associated with the duration of illness 1-2 years. While, Gillis et al. (1982) found that the proportion of poor compliers remained at about the same level at the 6-month, 18-month and 24-month follow-ups.

CONCLUSION:

Most of the non compliant patients were young adults. Findings suggest that main reasons for poor drug compliance were associated with illness and its treatment related factors such as improvement in illness, side effects of medication etc. As the patient showed improvement in the illness they became more careless towards treatment. Distance of commuting also contributed towards non-compliance. Other reasons of drug non-compliance were cost of medicine and doctor patient relationship. In this study non-compliance was more commonly seen with schizophrenia and depression as these are most debilitating disorders and as the duration of illness increased the compliance decreased. Majority of the patients were handling the responsibility of their medications as the primary caregivers were the sole earning members. Hence educating patients and relatives about course of illness and side effect of medications is crucial for maintaining compliance. It would be worthwhile considering the distance of commuting of the patients as it may reduce the cost of travelling and hence may reduce the financial burden of the treatment.

REFERENCES

- Agrawal MR, Sharma VK, Kishor Kumar KV, Lowe D. (1998) Non-compliance with treatment in patients suffering from schizophrenia: A study to evaluate possible contributing factors. *International Journal of Social Psychiatry*, 44, 92-106.
- Albus, M. Zum (1995) Problem der Medikamenten-Compliance bei schizophrener Patienten. *Psychiatrische Praxis*, 22:221-222.
- Avasthi A, Pershad D, Jain A, Nehra R. (1998). A psychosocial study of treatment adherence in psychiatric patients. In V. Varma, P. Kulhara, C. M. Masserman, A. Malhotra, & S. C. Malik (Eds.). *Social Psychiatry: A Global perspective*. Delhi: Macmillan India Limited, 197-202.
- Bebbington PE. (1995) The content and context of compliance. *International Clinical & Psychopharmacology*, 9, 41-50.
- Crane K, Kirby B, Kooperman D. (1996). Patient compliance for psychotropic medications: A group model for an expanding psychiatric inpatient unit. *Journal of Psychosocial Nursing*, 34, 8-15.
- Demyttenwere K. (1997) Compliance during treatment with antidepressants. *Journal of Affective Disorder*, 43, 27-39.
- Demyttenaere K (2001) Compliance and acceptance in antidepressant treatment. *International Journal of Psychiatry in Clinical Practice*, 5, 29-35
- Gillis LS, Trollip D, Jakod A, Holden T (1982) Noncompliance with Psychotropic medication, *South African Medical Journal*, 72, 602-606.
- Haywood TW, Kravitz HM, Grossman LS et al. (1995) predicting the "revolving door" phenomenon among patients with schizophrenic, schizoaffective and affective disorders. *American Journal of Psychiatry*, 152, 856-61.
- Johnson DAW, Freeman W. (1973) Drug defaulting by patients on long-acting phenothiazines. *Psychological Medicine*, 3, 115-119.
- Johnson DAW. (1977) Practical considerations in the use of depot neuroleptics for the treatment of schizophrenia. *British Journal of Hospital Medicine*, 17, 564-569.
- Kane JM. (1985). Compliance issues in outpatient treatment. *Journal of Clinical Psychopharmacology*, 5, 22-27.
- Katon W, Robinson P, Von Korff M et al. (1996) A multifaceted intervention to improve treatment of depression in primary care. *Archives of General Psychiatry*, 53: 924-932.
- Lehne R, Moore L, Crosby L, Hamilton D. (1994). *Pharmacology for Nursing Care (2nd Ed.)*. Philadelphia: W.B. Saunders.
- Linden M. (1987) Negative vs. positive Therapieerwartungen und Compliance vs. Non-Compliance. *Psychiatrische Praxis*, 14, 133-136.
- Maheshwari SK, Gupta S, Sharan P. (2009) Medication Non-Compliance and Substance Abuse in Schizophrenia. *Nursing Journal of India*, 100, 201-203.
- Pampallona S, Bollini P, Tibaldi G, Kupelnick B, Munizza, C. (2002) Patient adherence in the treatment of depression. *British Journal of Psychiatry*, 180, 104-109
- Roy R, Masroor J, Sushma K, Chakraborty PK. (2005) Reasons for Drug Non-Compliance of Psychiatric Patients: A Centre Based Study. *Journal of the Indian Academy of Applied Psychology*, 31 (1-2), 24-28.
- Schwartz D, Wang D. (1962) Medication errors made by elderly, chronically ill patients. *American Journal of Public Health*, 52, 2018-2029.
- Selen Y, Albert LW, William RD. (2003) Demographical Factors Affecting Patient Compliance (Adherence) to Medications in an Outpatient Psychiatric Clinic: A Preliminary study, *FABAD Journal of Pharmaceutical Science*, 28, 77-84.
- Sharif et al. (2003) Reasons for non-compliance to treatment among patients with psychiatric illness: A qualitative study. *South African Family practice*, 45, 4, 10-13.
- Shelton RC. (2007) Issues Related to Adherence in the Treatment of Depression. *Primary Psychiatry*. 14, 42-46.
- Soskis DA. (1978) Schizophrenic and medical inpatients as informed drug consumers. *Archives of General Psychiatry*, 12, 645-647.

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Research Article

KNOWLEDGE ON IMPACT OF SUBSTANCE USE AND HELP SEEKING BEHAVIOR AMONG SUBSTANCE USING STREET CHILDREN

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Abstract

Background: Substance use affect physical, psychological, emotional, social life and future of the children. The more the person conscious about the impact of substances, seeking help to discontinue the substance will enhance. The objectives of the study were, to study the level of knowledge on impact of substance use and help seeking behavior among substance using street children before and after the intervention. Methodology: The study adopted Hypothesis-testing research design. Based on the set of inclusion and exclusion criteria, 120 respondents were recruited and randomly allotted for control and experimental group. The tools were developed for the purpose of the study and data was collected using interview method. Results: Majority of the respondents fulfilled the ICD 10 criteria for dependence in inhalant use. Statistically there was a significant ($P < 0.001$) difference between the two groups in knowledge on impact of substance use after the intervention. At the baseline, negligible number of the respondents sought help in their lifetime to stop substance use. There was a significant difference between the two groups on seeking help to stop/cut down substance after the intervention. Conclusion: Enhancing the knowledge on impact of substance use on various dimensions of life would increase help seeking behavior to stop or cut down the substance use among street children.

Key words: Substance use, Impact of Substance use, Help seeking behavior, Street children

INTRODUCTION

Substance abuse among street children is common and well known phenomena. The common substances being used by street children are tobacco, alcohol, inhalants, cannabis, opioids, benzodiazepams and other drugs. Among all the substances, inhalants (fluid (eraser fluid), paint thinner, Glue (dendrites etc.), petroleum products etc.) are the most commonly used in the world as well as in India. The term "inhalants" is applied to a growing number of chemicals that are misused for their psychoactive properties. The primary route of administration of these substances is inhalation through the nose and/or mouth; however, not all drugs that can be inhaled (e.g., Marijuana, Ketamine) are considered inhalants (Edwards & Oetting, 1995). Some of the chemical compounds used as inhalants include Acetone, Benzene, Hexane, Xylene, Trichloroethylene (Cohen, 1984), Amyl nitrite, Butane, Isobutyl nitrite, Methylene chloride, Nitrous Oxide, Propane and Toluene. They are present in numerous items, that can be found at home such as gasoline, lighter fluid, felt-tip markers, glue, correction fluid, paint thinners, spray paints, nail polish removers, cleaning products, air fresheners, cooking sprays and

whipped cream dispensers. These products are easily obtainable by the general public from legitimate retailers such as grocery stores, hardware and home improvement warehouses and office supply stores. Because they have legitimate uses, there are very few restrictions on the sale and distribution of products that can be used as inhalants.

Inhalants are known by a number of different names some of which refer to all inhalants, such as air blast, huff, medusa, spray and others that refer to a specific substances, such as amys (amyl nitrite), rush or white out (isobutyl nitrite), poppers (amyl or isobutyl nitrite), laughing gas or whippets (Nitrous oxide) and tolly or Texas shoe shine (toluene) (Kilmer et al., 2005). Most inhalants (i.e., volatile solvents and anesthetic gases) have a depressant effect on the central nervous system and induce feelings of euphoria and intoxication. While under the influence of these inhalants, individuals may appear inebriated, exhibiting impaired motor control, disinhibition, slurred speech and belligerent behavior and may also experience hallucinations and delusions (American Psychiatric Association, 2000; Kurtzman et al., 2001). Other negative effects of inhalants use include coughing, wheezing, dizziness, stupor, skin

irritation around the nose and mouth (sniffer's rash), headache, tremor, muscle weakness, abdominal pain, nausea, vomiting, loss of consciousness and irregular heart rhythms leading to heart failure and death (American Psychiatric Association, 2000).

Use of inhalants by adolescents is troubling for reasons beyond the known physical consequences. Inhalant use in adolescence may increase the risk for the use of other substances in young adulthood. Various reports have noted tolerance to inhalants among heavy users (American Psychiatric Association, 2000; Kono et al., 2001). Individuals may also develop dependence (American Psychiatric Association, 2000) and experience symptoms typically associated with withdrawal such as craving, anxiety, irritability, restlessness, difficulty concentrating or paying attention and sleep disturbances. Additionally, individuals may experience increased heart rate, headache, hallucinations, excessive perspiration, shivering, tremors, nausea, diarrhea and fluctuations in appetite after discontinuation of inhalant use (Keriotis & Upadhyaya, 2000; Kono et al., 2001).

Studies have been found that, 25% to 90% of street children use some kinds of psychoactive substances (WHO, 1993). In Bangalore about 70-80% of the street children abuse some kinds of drugs (Benegal et al., 1999). Intervention for these children is extremely challenging and necessary of the hour due to the extent of the problem (Bal et al., 2010; Njord et al., 2010; Praharaaj et al., 2008).

The gateway theory is applicable with the street children. Street children start with tobacco and slowly move onto other drugs. Some children would have exposed to substances before they come onto the streets but majority would have not exposed to any kind of substances. Once they come onto the streets, though they are not using, the street gangs push them to use substances. Gradually non users also start using in order to join the groups. After sometime, the recreational use will become addiction and they will be caught in the hands of addiction. Most of the children use multiple substances. Once they are addicted, they face withdrawal symptoms in the form of irritability, psychomotor retardation, craving, anhedonia, dry mouth, sleep disturbances, increased lacrimation, etc.

Impact of substance abuse is multifaceted and pointing out the exact one is difficult task. It affects physical, psychological, emotional, social life and future of the children. The more the person knows the impact of

substances on a person, seeking help to stop will increase. In the present study help seeking refers to seek the help to stop/cut down the substance use.

Help seeking behavior

Studies report that generally street children has less and inadequate social support, in terms of primary, secondary and tertiary level. In the family level, they will not be having adequate support and once they come onto the streets, they lose whatever support they had with the family. Contrary to this, the street children form their own groups to help themselves. These groups operate as help providers as well as spoilers in their life (Johnston et al., 2010, McAlpine et al., 2010, Wolseth, 2010). The street children's ranking of the 'support providers' showed that, the support provided by the homeless adults was the most followed by community members, Civil Society Organizations, NGOs and last, the government agencies on the ranking scale (Aransiola & Akinyemi, 2010). Though studies mention about the available support systems for street children there are many barriers to health. Even street children want to seek help for all kinds of problems; the present society is not equipped. In the health sector, street children are seen as problem creators and there is no respect for them. Even if they approach, the attitude of health provider is questionable. The stigma is very high among the general practitioners, professionals and others. Due to this, even though street children seek help, discrimination will be meted for them. Once they expose to these kind of attitude, other children will not approach for any kind of help (Ali & de Mynck, 2005, Ayuku et al., 2004). Another important factor is that, there is no system in the society to help them. The cost of treatment is unaffordable for them. Though nongovernmental organizations are working for them, their resources are not affordable for the street children with substance abuse. In this backdrop the present study made an attempt to study the knowledge on impact of substances and help seeking behavior among substance using street children.

METHODS

The objectives of the present study were to study the level of knowledge on impact of substance abuse and help seeking behaviors among substance using street children before and after the intervention. In the present study, street children refers to all male children between 12 to 18 years of age staying on the street with or without parental supervision and engaging with any kind of activities for survival. Based on the needs

assessment an intervention package was developed. The study adopted classical experimental design-before and after with control group (Hypothesis-testing research design). In this design two groups (Treatment group and Control group) were selected and the dependent variable was measured in both the groups for an identical time period before the treatment. Then Intervention program which was developed specially for this population was introduced into the test group only. After the completion of the intervention program, one month, two months and third month's intervals dependent variables were measured in both the groups to check the efficacy of the intervention program. There were 40 organizations working in Bangalore and about 65,000 street children were there in 1999 (BOSCO & NIMHANS, 1999). These NGO's involved in street children, considered as universe and each NGO is considered as one cluster. From this list of NGO's, four NGO's were selected using simple random sampling technique. All the children available with them considered for the study. 120 respondents who met the inclusion and exclusion criteria were recruited. The four non-governmental organizations were contacted, explained about the nature and purpose of the study and consent was obtained to conduct the study in the respective organization premises. Participation in both the intervention phases and follow up of the study was voluntary and required both the organizational consent and the street children assent. The randomization procedure involved inviting all interested and eligible street children (who met the substance use criteria) to an information meeting at which they were guided in reviewing the contents of the consent forms. Principles of voluntary participation, confidentiality and random assignment were explicitly explained and then street children were asked to pick a piece of paper from a box containing either the letter c or the letter e to specify assignment to the control or intervention conditions in a transparent way. Among 120 respondents, 60 street children for the experimental group and 60 street children for control group who met the inclusion-exclusion criteria with substance use were selected. After one month of the intervention for follow-up 94 children were available, this included 48 experimental and 46 control group children. For the second month follow up 88 children were available, which included 45 from experimental and 43 from control group. For the third month follow up, 80 children were available, which included 42 from the experimental and 38 from the control group. The sessions were conducted by the

researcher who is trained in psychosocial treatment.

The Semi Structured interview schedule, Drug use assessment and history checklist, Knowledge assessment checklist and Help seeking behavior checklist (Self prepared) were used and the data was collected by interview method. The assessment was carried out by third parties who were trained for the study purpose and not related to the study group at different levels. The analysis was carried out using the software Statistical Package for the Social Sciences (SPSS, version 16.0) for Windows. A separate training programme was organized for the control group after the completion of data collection. (The training methodology used and the detailed intervention package is available with the author).

RESULTS

I. Socio-demographic details of the respondents

The mean age of the respondents was found to be 14.75 (± 1.10) years. Majority of the respondents in both the group had contact with family members. 60% of the respondents in the control and nearly half (48.3%) of the respondents in the experimental group were staying on the streets for about 1-2 years. Nearly one third (30%) in the control and 26.7% in the experimental group had been staying on the streets for about 2-4 years. At the baseline statistically there was no significant difference between ($p > 0.05$) two groups.

II. Drug use of the respondents

Drug use of the respondents shows that at the baseline in the control group about 73.3% and in the experimental group about 85% fulfilled the ICD 10 criteria for dependence. The majority of the respondents experienced restlessness in both the control (71.7%) and experimental (66.7%) group. About 71.1% in the control group and 63.3% of the experimental group experienced strong desire or craving for substance when they tried or cut down the substance. About 21.7% in the control group and 26.7% in the experimental group experienced irritability. Only 6.7% and 1.7% respectively in the control and experimental group experienced lethargy. All the respondents in both the groups used tobacco and inhalants in their lifetime. About 75% in the control group and 83.3% in the experimental group reported that, they used alcohol in their lifetime. In both the groups, nobody used Opium and injectables in their lifetime. The mean age at first use of tobacco in the control group was 10.53 (± 1.20) years and in the

experimental group it was 10.35 (± 1.39) years. The mean age at first use of Inhalants in the control group was 11.42 (± 1.06) years and in the experimental group it was 11.00 (± 1.30) years.

III. Knowledge of the respondents on impact of substance abuse

Table 1 indicates the comparison of (five time observations) pre, post, first month, second month and third month follow up assessment of mean scores of knowledge on impact of substance abuse between two groups. RMANOVA test had been used to find out the significant difference among the pre, post and subsequent follow up mean scores and to test the

did not seek any help for stopping the use of substance. The Chi-square test showed that there was no significant difference ($p > 0.05$) between the two groups.

After one month of the intervention in the control group, only about 2.2% and in the experimental group, about 20.8% reported that they sought help for stopping the use of substance. Statistically there was a significant difference ($p < 0.01$) between the control and experimental group on seeking help for stopping the substance.

After the second month of the intervention in the control group, 7% and in experimental group about 20% reported that they sought help for stopping the

Table 1: Mean scores of knowledge on impact of substance abuse by control and experimental group

Group	Knowledge					Between experimental and control group (group)
	Pre test	Post test	First month follow up	Second month follow up	Third month follow up	
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Control group N=38	3.89 (2.48)	2.74 (2.52)	4.00 (2.42)	4.05 (2.45)	4.76 (2.89)	F=132.045 P < 0.001
Experimental Group N=42	3.10 (1.90)	9.45 (1.89)	9.69 (2.29)	9.38 (2.20)	9.10 (2.23)	

significant difference on the score of knowledge of impact of substance abuse between the control and experimental group simultaneously. The scores were obtained by summing up the total right answer of the respondents. The minimum of knowledge score one can get was zero and maximum was 11.

It shows that, there was a significant ($P < 0.001$) difference between the experimental and control group. The mean score of the pre assessment were 3.89 (± 2.48) and 3.10 (± 1.90) respectively for the control and the experimental group. The mean score of the third month were 4.76 (± 2.89) and 9.10 (± 2.23) respectively for the control and experimental group.

IV. Help seeking behavior of the respondents

Table 2 depicts whether the respondents had ever taken help for stopping the use of substance. At the baseline in the control group, about 25% and in the experimental group about 23.3% reported that, they sought help for stopping the use of substance at some point of time in their life. Majority of the respondents in both the group

substance use. After the third month of the intervention in the control group only about 5.3% and in experimental group about 16.7% reported that they sought help for stopping the use of substance. The Chi-square test showed that there was no significant difference ($p > 0.05$) between the two groups.

Table 3 depicts what type (nature) of help was sought by the respondent to stop the substances. Majority of the respondents in both the group (73.3% in control and 78.6% in experimental group) sought the medical help. After one month of the intervention the lonely help seeker in the control group sought medical help. In the experimental group, 10 respondents sought help and half of them sought medical and another half of them sought help from agencies. After third month of the intervention in the control group 2 respondents sought the help from agencies. In the experimental group, 7 respondents sought the help, among them 5 of them sought medical and another 2 of them took help from agencies. Statistically there was no significant difference ($p > 0.05$) between the two groups.

Table 2: Help seeking behavior of the respondents

Stages of assesment	Value label	Control Group		Experimental Group		χ^2	df	P Value
		N=60	%	N=60	%			
Baseline	No	45	75	46	76.7	0.045	1	0.831
	Yes	15	25	14	23.3			
After one month of the intervention	No	N=46	%	N=48	%	7.915	1	0.005
		45	97.8	38	79.2			
	Yes	1	2.2	10	20.8			
After two months of the intervention	No	N=43	%	N=45	%	3.167	1	0.075
		40	93.0	36	80.0			
	Yes	3	7.0	9	20.0			
After three months of the intervention	No	N=38	%	N=42	%	2.598	1	0.107
		36	94.7	35	83.3			
	Yes	2	5.3	7	16.7			

Table 3: Nature of the help sought

Stages of assesment	Value label	Control Group		Experimental Group		χ^2	df	P Value
		N=15	%	N=14	%			
Baseline	Medical	11	73.3	11	78.6	0.109	1	0.742
	From agencies	4	26.7	3	21.4			
After one month of the intervention	Medical	N=1	%	N=10	%	0.917	1	0.338
		1	100	5	50.0			
	From agencies	0	0	5	50.0			
After two months of the intervention	Medical	N=3	%	N=9	%	3.167	1	0.075
		1	33.3	5	55.6			
	From agencies	2	55.6	4	44.4			
After three months of the intervention	Medical	N=2	%	N=7	%	3.214	1	0.073
		0	0	5	71.4			
	From agencies	2	100	2	28.6			

RMANOVA test was used to find out the difference among the pre and subsequent follow up scores and to test the significant difference on the scores of maximum period of abstinent between the two groups simultaneously (Table 4). It shows that, there was a significant ($P < 0.001$) difference between two groups on

the period of abstinent scores. The mean score of the pre assessment were 3.16 days (± 4.99) and 2.90 days (± 5.94) respectively for the control and experimental group. The mean score of the third month were 1.45 days (± 5.56) and 12.26 days (± 24.22) respectively for the control and the experimental group.

Table 4: Mean scores of maximum period of abstinent by control and experimental group

Group	Maximum period of number of days of abstinent				Between experimental and control group (group)
	Pre test	First month follow up	Second month follow up	Third month follow up	
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Control group N=38	3.16 (4.99)	0.26 (1.62)	1.18 (4.10)	1.45 (5.56)	F= 13.411 P < 0.001
Experimental Group N=42	2.90 (5.94)	7.88 (9.68)	10.12 (14.71)	12.26 (24.22)	
Total	3.02 (5.47)	4.26 (8.03)	5.88 (11.85)	7.12 (18.67)	

DISCUSSION

The mean age of the respondents in the study group was 14.75 (±1.10) years. The 't' test showed that, there was no significant difference (t=0.657, df=118, P>0.05) between the two groups. Therefore, it was concluded that the age distribution was similar in both the groups. Various studies reported that the typical age of the street children differs from place to place and nation to nation. Usually it starts from as young as 5 to 18 years (Juvenile Justice (care and protection of children) Government of India Act 2000; Richter et al., 2007; WHO, 2000) after which they are considered as adults. The majority of the respondents in both the groups had educated upto primary school. It is well known fact that these children are either dropped out of school or did not complete their primary schooling in general. Studies also go in parity with the present study (Geldenhuys, 2001; Olley, 2006; UNICEF, 1998; WHO, 2000; Xue, 2009). Over half of the respondents in both the control (48.3%) and experimental (49.2%) group were working as Rag pickers and about one third (31.7% and 30.0%) of the respondents were working as street level vendors. Various studies corroborate with the present study that street children work in low occupations, such as rag picking, street level vending, washing cars, mechanical work etc. (Ali et al., 2004; Merille et al., 2010; Praharaj et al., 2008).

At the baseline majority of the respondents in both the group fulfilled the ICD 10 criteria for dependence and had withdrawal symptoms. Studies reported that, Inhalant addiction was common among street children, it varies from 40-80% and withdrawal symptoms in the form of restlessness, craving, irritability were common (Gaidhane et al., 2008; Iqbal, 2008; Kumar et al., 2008; Oley, 2006; Seth et al., 2005). All the respondents in both the group claimed that they used Inhalants in their lifetime. The present study focused on street children with substance use. Hence, all the children reported

that they use inhalants. Studies reported that, street children generally use multiple substances among them, Inhalants such as Whitener, Glues, petroleum products, shoe polish etc which were common (Benegal et al., 2010; Kumar et al., 2008; Njord et al., 2010; Othieno & Obondo, 2004).

The mean age at first use of tobacco was found to be 10.53 (±1.20) years, for alcohol 11.29 (±0.87) years, for Cannabis 11.71 (±0.98) years and for Heroin 11.50 (±2.12) years in the control group. The mean age at first use of tobacco was found to be 10.35 (±1.39) years, for alcohol 10.84 (±1.35) years, for Cannabis 11.53 (±1.39) years and for Heroin 14.00 (±1.00) years in the experimental group. The 't' test showed that, there was no significant difference (t= 1.921, df=118, P>0.05) between the two group. It shows that these children started with tobacco and gradually moved to other substances. Gateway theory is applicable for this population also. Seth et al., (2005) study reported that, among the street children, the age of onset of drug use especially Toluene and whitener fluid ranged from 6-14 years with a median of 10 years. Benegal et al., (1999) study reported that, among the street children in Bangalore mean age at onset of Inhalant use was 11.53 years, cannabis use was 12.79 years, alcohol use was 13.16 years and for Opioid use was 13.16 years. The present study also corroborated with previous studies with street children in India.

The RMANOVA test showed that there was a significant (P<0.001) difference between the two groups on mean score of knowledge after the intervention. At the baseline both the groups had limited knowledge. After the intervention, significant improvement in the knowledge on impact of substance abuse had observed in the experimental group compared to the control group. Studies corroborated with the present study's findings that, even a brief intervention on impact of substances would enhances the knowledge of the

respondents (Benegal et al., 2010, 1999; Baer et al., 2007; Peterson et al., 2006; Prahara et al., 2008).

The present study's findings clearly showed that only negligible number of street children sought help in their lifetime at the time of baseline assessment. There was no difference between the two groups at the baseline. After one month of the intervention, in experimental group, about 20% sought help to stop substance, whereas, in the control group only one respondent sought help and there was a significant difference between two groups. In the second and third month follow-up there was no statistical significant difference between the two groups. Though there was no difference, comparison of both the groups showed that the experimental group's respondents had tried more to quit than the control group. Constant follow-up and support of intervention is essential to keep these children on the track. After the initial effect of the intervention gradually it is fading away. There are studies to support the present study findings. Gaidhane et al., (2008) reported that, 40% of the study samples tried to quit and help was sought previously for the same. Benegal et al., (1999) reported that after the intervention significant number of street children sought treatment to stop either by an NGO or by Medical practitioner. A study by Peterson et al., (2006) reported that about 48% had been in alcohol or drug treatment at some point in their life time.

RMANOVA test showed that, there was a significant ($P < 0.001$) difference between two groups on maximum period of abstinent. The mean number of days of abstinent at the baseline was 3.16 days (± 4.99) and 2.90 (± 5.94) days respectively for the control and experimental group. After the third month of the intervention it was 1.45 (± 5.56) and 12.26 (± 24.22) days respectively for the control and experimental group. This shows that overall significant number of days of abstinence in the experimental group was higher compared to the control group. Studies also report that overall increase between baseline and follow-up assessments in the abstinence days and decrease in solvent, alcohol, marijuana and other substances use (Baer et al., 2007; Benegal et al., 1999; Peterson et al., 2006).

CONCLUSION

The present study made an attempt to study the knowledge and help seeking behavior among substance using street children. It is known fact that knowledge plays a vital role in any kind of intervention. Impact of

substance use is multifaceted in nature and it ruins the street children's life. Their future is bleak and substance use further makes life shoddier. The street children do not know the impact of substance use on their life and do not have any plan for future. Even they decide to overcome from using substances, they do not know where and from whom to seek help. Making the street children to understand the impact and available options for help will make lot of difference. Regular follow-up, establishing good rapport, keeping them engaged, continuously motivating them are very important in bringing them out from substance use. The study highlighted the same.

REFERENCES

- Ali M & De Muynck A. (2005) Illness incidence and health seeking behaviour among street children in Rawalpindi and Islamabad, Pakistan-qualitative study. *Child: Care, Health and Development*, 31(5), 525-532.
- Ali M, Shahab S, Ushijima H, De Muynck A. (2004) Street children in Pakistan: A situational analysis of social conditions and nutritional status. *Social Science & Medicine*, 59(8), 1707-1717.
- American Psychiatric Association. (2000) Diagnostic and statistical manual of the mental disorders (4 TR ed.). Washington, DC: Author.
- Aransiola JO & Akinyemi AI. (2010) Attitudes of street children to the network of support for them in Nigeria. *IFE Psychologia: An International Journal*, 18(1), 326-352.
- Ayuku DO, Kaplan C, Baer H, de Vries M. (2004) Characteristics and personal social networks of the on-the-street, of-the-street, shelter and school children in Eldoret, Kenya. *International Social Work*, 47(3), 293-311.
- Baer JS, Garrett SB, Beadnell B, Wells EA, Peterson PL. (2007) Brief Motivational Intervention With Homeless Adolescents : Evaluating Effects on Substance Use and Service Utilization. *Psychology of Addictive Behaviors*, 21(4), 582-586.
- Bal B, Mitra R, Mallick AH, Chakraborti S, Sarkar K. (2010) Nontobacco substance use, sexual abuse, HIV, and sexually transmitted infection among street children in Kolkata, India. *Substance Use & Misuse*, 45(10), 1668-1682.
- Benegal V, Bhushan K, Seshadri SP, Karott M. (1999) Drug Abuse Among Street Children in Bangalore. Unpublished manuscript, Bangalore.

- Benegal V, Sheshadri SP, Chand PK, Pandian D, Lakshmana G, Subodh BN. (2010) Inhalant use among street children in Bangalore (Project report). Bangalore: NIMHANS.
- BOSCO & NIMHANS. (1999) Children in the street's perception of sexuality and sexual behavior: Implications for intervention. Unpublished manuscript, Bangalore.
- Cohen S. (1984) The Hallucinogens and the inhalants. *Psychiatric Clinics of North America*, 7, 681-688.
- Edwards RW & Oetting ER. (1995) Inhalant use in the United States. In Kozel ZN, Sloboda & De La Rosa M (Eds.), *Epidemiology of inhalant abuse: An international Perspective* (pp. 8-28). Rockville, MD: National Institute on Drug Abuse.
- Gaidhane AM, Zahiruddin QS, Waghmare L, Shanbhag S, Zodpey S, Joharapurkar SR. (2008) Substance abuse among street children in Mumbai. *Vulnerable Children and Youth Studies*, 3(1), 42-51.
- Geldenhuys JL. (2001) An investigation into possible development problems of African street adolescents in South Africa. *Journal of Psychology in Africa; South of the Sahara, the Caribbean, and Afro-Latin America*, 11(2), 126-143.
- Government of India. (2000) The Juvenile Justice (Care and protection of children) Act, 2000 (Act No. 56 of 2000). Available at wcd.nic.in/childprot/jjact2000.pdf (last accessed on October 2011).
- Iqbal MW. (2008) Street children: An overlooked issue in Pakistan. *Child Abuse Review*, 17(3), 201-209.
- Johnston LG, Thurman TR, Mock N, Nano L, Carcani V. (2010) Respondent-driven sampling: A new method for studying street children with findings from Albania. *Vulnerable Children and Youth Studies*, 5(1), 1-11.
- Keriotis AA & Upadhyaya HP. (2000) Inhalant dependence and withdrawal symptoms. *Journal of the American Academy of Child and Adolescent Psychiatry*, 39, 679-680.
- Kilmer JR, Cronce JM, Palmer RS. (2005) Relapse prevention for abuse of Club Drugs, Hallucinogens, Inhalants, and Steroids. In Marlatt GA & Donovan DM (Eds.), *Relapse prevention: Maintenance strategies in the treatment of addiction behaviors* (2 ed., pp. 208-247). New York: The Guilford Press.
- Kono J, Miyata H, Ushijima S, et al. (2001) Nicotine, alcohol, methamphetamine, and inhalant dependence: A comparison with clinical features with the use of a new clinical evaluation form. *Alcohol*, 24, 99-106.
- Kumar S, Grover S, Kulhara P, et al. (2008) Inhalant abuse: A clinic-based study. *Indian journal of psychiatry*, 50(2), 117-120.
- Kurtzman TL, Otsuka KN, Wahl RA. (2001) Inhalant abuse by adolescents. *Journal of Adolescent Health*, 28, 170-180.
- McAlpine K, Henley R, Mueller M, Vetter S. (2010) A survey of street children in northern Tanzania: How abuse or support factors may influence migration to the street. *Community Mental Health Journal*, 46(1), 26-32.
- Merrill RM, Njord L, Njord R, Read C, Pachano JDR. (2010) The effect of family influence on indicators associated with street life among Filipino street children. *Vulnerable Children and Youth Studies*, 5(2), 142-150.
- Njord L, Merrill RM, Njord R, Lindsay R, Pachano JDR. (2010) Drug use among street children and non-street children in the Philippines. *Asia-Pacific Journal of Public Health*, 22(2), 203-211.
- Njord L, Merrill RM, Njord R, Pachano JDR, Hackett A. (2008) Characterizing health behaviors and infectious disease prevalence among Filipino street children. *International Journal of Adolescent Medicine and Health*, 20(3), 367-374.
- Olley BO. (2006) Social and health behaviors in youth of the streets of Ibadan, Nigeria. *Child Abuse & Neglect*, 30(3), 271-282.
- Othieno CJ & Obondo AA. (2004) Patterns of substance abuse among Kenyan street children. *Journal of Child and Adolescent Mental Health*, 12(2), 145-150.
- Peterson PL, Baer JS, Wells EA, Ginzler JA, Garrett SB. (2006) Short-term effects of a brief motivational intervention to reduce alcohol and drug risk among homeless adolescents. *Psychology of Addictive Behaviors*, 20(3), 254-264.
- Praharaj SK, Verma P, Arora M. (2008) Inhalant abuse (typewriter correction fluid) in street children. *Journal of Addiction Medicine*, 2(4), 175-177.
- Richter MS, Groft JN, Prinsloo L. (2007) Ethical issues surrounding studies with vulnerable populations: A case study of South African street children. *International Journal of Adolescent Medicine and Health*, 19(2), 117-126.

Seth R, Kotwal A, Ganguly KK. (2005) Street and working children of Delhi, India, misusing toluene: An ethnographic exploration. *Substance Use and Misuse*, 40(11), 1659-1679.

UNICEF. (29-30 August 1998) A background paper on street children. Paper presented at the National Workshop on Street Children.

WHO. (1993) WHO programme on substance abuse, 'one way street': A report on phase I of street children project. Geneva: WHO.

WHO. (2000) Working with street children: A training package on substance use, sexual and reproductive health including HIV/AIDS and STDs. Geneva: WHO-Department of Mental Health and Substance Dependence.

Wolseth J. (2010) Learning on the streets: Peer socialization in adverse environments. In Lancy DF, Bock J, Gaskins S (Eds.), *The anthropology of learning in childhood*. Walnut Creek, CA, US: AltaMira Press.

World Health Organization. (2004) *The ICD-10: Classification of Mental and Behavioural Disorders-Clinical descriptions and diagnostic guidelines* (Indian ed.). Geneva: AITBS, Delhi.

Xue Z. (2009) Urban street children in China: A social exclusion perspective. *International Social Work*, 52(3), 401-408.

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Research Article

PHENOMENOLOGY OF VOLATILE SOLVENT ABUSE: A COMMUNITY BASED EXPLORATORY STUDY

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Abstract

Introduction: There is inadequate literature about the phenomenology of inhalant intoxication and withdrawal. Also, the influence of type of inhalant abused, frequency of intake, mode of inhalation and total duration of inhalant use on the phenomenology has not been studied. **Method:** 45 patients of current volatile solvent dependence or harmful use as per ICD-10 criteria were recruited from the community clinics. Phenomenology of inhalant intoxication and withdrawal was assessed cross-sectionally through the subjective experiences reported by the patients on a semi structured performa prepared for study. **Results:** The mean age of patients was 13.9 years and their mean duration of inhalant abuse was 34.2 months. There were 37 (82.2%) patients who abused adhesive fluid (commonly used to fix punctures) alone and 8 (17.8%) patients abused both adhesive and whitener fluid. Phenomenology of inhalant intoxication was categorized in hedonic and aversive group of symptoms. Under hedonic experiences, all subjects reported feeling of relaxation (100%), followed by euphoria (91.1%) and other symptoms whereas, under the phenomenology of inhalant withdrawal, all subjects (100%) reported high levels of craving during withdrawal state of inhalants followed by dysphoric mood 93.3%, body ache in 91.1% and other symptoms. Additionally, more severe intoxication and withdrawal phenomenology was found in patients who inhaled more than one type of inhalant, those with higher frequency of lifetime inhalant use, those who inhaled for longer duration and patients who used huffing for mode of inhalation. **Conclusion:** Current study provides insight about the various signs and symptoms of inhalant intoxication and withdrawal and the impact of type, mode, frequency and duration of inhalant use on phenomenology.

Key words: Inhalant, phenomenology, intoxication, withdrawal

INTRODUCTION

Volatile solvent or inhalant abuse refers to the intentional inhalation of vapors from commercial products or specific chemical agents to achieve intoxication (Howard et al,2011). Volatile substances are a large and diverse group of chemical compounds used in many household and industrial products. Products containing volatile substances are widely and often legally available and are very inexpensive when compared with other intoxicants. Unlike drugs which are identifiable by a pharmacological class (e.g., cocaine), volatile substances are commonly defined by their route of administration—inhalation (Dell et al, 2011)

Inhalation is done by mainly three modes: sniffing, huffing and bagging. 'Sniffing' involves direct inhalation from a container or a piece of clothing sprayed with the substance. Some users attempt to increase the amount of available vapors by heating the substance first, or by holding a soaked cloth over the nose or mouth (that is,

'huffing'). 'Bagging' involves breathing from a paper or plastic bag containing the volatile substance (Lubman et al,2008).

The most commonly reported inhalants of abuse in western literature are gasoline, glue, nail polish, paint removers, and paint sprays (Lubman et al,2008). Studies from India have reported abuse of inhalants like kerosene, petrol, gasoline, typewriter correction fluid (whitener fluid), etc (Praharaj SK et al,2008) Toluene-containing compounds such as glues, nail polish removers, lighter fluids, spray paints, deodorant, hair sprays, and cleaning and correcting fluids are the most commonly misused products by India's street children (Sharma & Lal,2011)

The prevalence of inhalant abuse has been reported to vary from 9 to 14.5% in United States (Howard et al,2011). In India, there is a comparative lack of studies related to inhalant abuse epidemiology. Although there are no national statistics, several recent studies identify volatile solvents as a common problem among street

children. A concern, however, is that the studies cover small geographical areas and cannot be extrapolated to the national level. (Sharma & Lal, 2011)

Very little research on inhalant abuse exists in the literature. The limited knowledge about inhalant abuse is reflected in minimal description of inhalant use disorders in the Diagnostic and Statistical Manual, 4th Edition (DSM-IV). Diagnosis of inhalant dependence, according to the DSM-IV does not include withdrawal symptoms, as the experts have suggested that an inhalant withdrawal syndrome is neither common nor clinically significant. But some authors suggest a characteristic withdrawal syndrome (Kono J et al, 2001; Perron et al, 2011) Another study which evaluated the reliability of DSM IV criteria for inhalant abuse and dependence found that inhalant withdrawal was the second most common inhalant dependence criterion among a sample of adolescent inhalant users as 11.1% of them (N=162) had reported withdrawals (Ridenour et al, 2007)

The few earlier studies which analyzed phenomenology of inhalant intoxication, have described it as a homogeneous group (Beckman et al, 2006; Garland & Howard 2010; Garland et al, 2011; MacLean S, 2008) Neglect of this "hidden epidemic" has had malign consequences, as these agents are among the most toxic of all psychoactive substances. These can result in catastrophic medical emergencies such as ventricular arrhythmias leading to "sudden sniffing death" (Bowen SE, 2011) Studies of the prevalence, effects, and consequences of specific misused volatile substances are needed (Garland & Howard 2010; Garland et al, 2011).

Various case reports and case series have been published from India on inhalant abuse (Basu et al, 2004; Gupta et al, 2009; Shah R et al, 1999; Waraich BK et al, 2003). However, there are only two studies with relatively large sample size and even these two studies have important limitations. A study reported 21 inhalant abuse cases for description of their sociodemographic and clinical profile mainly. They have also described intoxication and withdrawal phenomenon experienced by their patients (Kumar S et al, 2008). However, it was not elaborated in relation to mode, duration of exposure and frequency of inhalant abused. Another study has reported a chart review of 36 patients with inhalant abuse/ dependence and described sociodemographic and clinical correlates (Verma R et al, 2011). In their description of

phenomenology of inhalant abuse, the findings were reported for all types of inhalants together and moreover, phenomenology was not described with respect to type, frequency, mode and duration of inhalant used. It was also limited in being a retrospective study which described findings from past records.

In summary, intoxication and withdrawal syndromes due to inhalant abuse have been described briefly in literature and available literature has limitations. The current study was planned with improved methodology with the following aims and objectives.

Aims and Objectives:

To study the phenomenology of inhalant intoxication and inhalant withdrawal and its association with type, frequency, mode of inhalation and duration of exposure.

Methodology:

Inclusion criteria:

Patient with a diagnosis of volatile solvent dependence or harmful use at the time of assessment as per ICD-10 criteria.

Exclusion criteria:

Dependence on other substance except nicotine.

Associated co-morbid psychosis, mental retardation, neurological disorder which could affect accurate reporting.

MATERIAL & METHOD

Patients with history of inhalant abuse who were registered with community clinics since past 5 years were contacted for recruitment in the study in July-September, 2012. For the purpose of the study, these patients were contacted telephonically or by paying home visit and were asked to come to the respective outreach clinics or Psychiatry OPD with informant for further assessment. After obtaining informed consent, the patients fulfilling inclusion and exclusion criteria were included in the study. The current information relating to socio-demographic and clinical parameters was recorded. The family members were asked to corroborate the information given by the patient. Conditions of anonymity and confidentiality were strictly adhered to during the course of the study.

Out of 1008 substance use disorder patients registered with the community outreach services in last 5 years, 72 (7.14%) of them were using inhalants and were

contacted and those who responded and fulfilled the study criteria's were included. A total of 45 patients could be recruited in the study. All the included patients were current users of inhalants with their last intake within 48 hours. Patients were asked about the type of inhalant abused, mode of inhalation (sniffing/huffing/bagging), amount of inhalant taken in single use, age at first use, total duration of inhalant abuse, last intake of inhalant, time spent in inhalation during single use and if there was any associated substance abuse. Patients were also asked about the number of times inhalant was abused in lifetime if it was less than or more than 100 to assess the lifetime frequency of inhalant abuse, as used earlier by Garland & Howard in 2010. During the interview when subjects were narrating their individual experiences, it was made sure that the subjects were neither intoxicated nor were directly under the influence of the inhalant or any other substance.

Phenomenology of inhalant intoxication and inhalant withdrawals was assessed cross-sectionally through the subjective experiences reported by the patients. For assessing phenomenology of inhalant intoxication, the semi structured performa used earlier by Garland & Howard was applied for the current study. Items from inhalant intoxication experiences were grouped into hedonic and aversive subscales as some users might experience both hedonic and aversive experiences. Patients were also asked how long did the effect of intoxication last.

For assessing phenomenology of inhalant withdrawals, a checklist was prepared by collecting data reported in earlier studies (Cruz SL,2011; Evans & Raistrick,1987;Perron et al,2011; Ridenour et al,2007). Patients were also asked the time their withdrawal started in relation to last intake of inhalant.

Participants responded to the items on a 5-point Likert-type response scale (0 = never, 1 = rarely, 2 = occasionally, 3 = frequently, 4 = always) for both intoxication and withdrawal phenomenology.

Statistical analysis was carried out using SPSS version 13. Chi square test, Mann-Whitney Test and Kruskal-Wallis Test were applied.

RESULTS

Socio-demographic profile:

The study included assessment of 45 subjects. Majority were primary pass and were still going to school. All of them belonged to lower socio economic status.

Majority belonged to rural background and hailed from nuclear families (Table 1).

Table 1: Sociodemographic profile

Variable	Number (%)
Sex (male)	45 (100%)
Education	
Primary pass	26 (57.8%)
8th pass	7 (15.6%)
Illiterate	12 (26.7%)
Occupation	
Student	28 (62.2%)
Laborer	11 (24.4%)
Unemployed	6 (13.3%)
Religion	
Hindu	42 (93.3%)
Muslim	3 (6.6%)
Family type	
Nuclear	33 (73.3%)
Joint	12 (26.6%)
Residence	
Urban	10 (22.2%)
Rural	35 (77.7%)

Pattern of inhalant use:

The mean age was 13.9 (SD, 1.7) years (range, 11 to 18 years). The mean age of initiation of inhalant use was 9.8 (SD, 1.5) years with range of 4 to 13 years. Their total duration of inhalant abuse varied from 12 month to 120 months [mean 34.2 (SD, 21.4)]. The mode of inhalation was sniffing in 35.6%, huffing in 37.8% and bagging in 26.7%. Majority (82.2%) of the subjects in our study abused adhesive (used to fix punctured tubes) only, while the rest 8(17.8%) were using both adhesive and erasing fluid (whitener fluid) depending on the availability. During a single use, mean amount of inhalant used was 8.7 (SD, 5.4) ml. Twenty three patients (51.1%) reported lifetime use of inhalant more than 100 times and in 22 patients (48.9%) it was less than 100 times. The mean time spent on single use ranged from 5 minutes to 120 minutes. The median time of exposure to inhalant on a single use was 15 minutes, so for the purpose of statistical analysis related to duration of exposure, subjects were grouped into two: those who took inhalant for less than 15 minutes (N=22) and those who took inhalant for more than or equal to 15 minutes (N=23) on single use. Effect of intoxication lasted for a mean time of 5.82 hours and withdrawals developed after a mean time of 16.3 hours (Table 2).

Table 2: Pattern of inhalant use

Variable	
Current Age [Mean(S.D.)]in years	13.91 (1.75)
Age of initiation [Mean(S.D.)]in years	9.8 (1.5)
Duration [Mean(S.D.)]in months	31.3 (19.5)
Mode of inhalation [Number(%)]:	
Sniffing	16 (35.6)
Huffing	17 (37.8)
Bagging	12 (26.7)
Type of inhalant used	[N(%)]
Adhesive	37 (82.2)
Adhesive and Whitener	8 (17.8)
Amount taken in single use [Mean(S.D.)] in ml	8.7(5.4)
Frequency of inhalation	
11-99 [number(%)]	22 (48.9)
>=100 [number(%)]	23 (51.1)
Time spent on single use:	
<15 minutes [number(%)]	22 (48.9)
>=15 minutes [number(%)]	23 (51.1)
Effects of intoxication lasted for mean time (SD) in hours	5.82 (2.44)
Withdrawals developed after mean time (SD) in hours	16.32 (7.698)

Phenomenology of inhalant intoxication:

According to the checklist prepared for the study, under hedonic experiences, all subjects reported feeling of relaxation (100%), followed by euphoria (91.1%), dissociation (66.6%), increased talkativeness (46.6%), hallucinations (28.8%) and grandiosity (11.1%). Under aversive experiences, 91.1% subjects reported nausea, followed by aggressiveness (55.5%), blurred vision (53.3%), burning in eyes and throat (48.8%), mumbled speech (46.6%), rapid heartbeat (42.2%), irritability (42.2%), chest pain (40%), vertigo (37.7%), confusion (35.5%), amnesia (24.4%), dysphoric mood (24.4%), fatigue (20%) and suicidal ideation (4.4%). (Table 3)

Table 3: Phenomenology of intoxication: distribution and mean response reported

Intoxication phenomenology	Experienced by Number of subjects (%) N=45	Mean Response reported SD
HEDONIC		
Euphoria	41 (91.1)	1.80 (1.21)
Relaxation	45 (100)	3.09 (.76)
Talkativeness	21 (46.6)	.96 (1.27)
Grandiosity	5 (11.1)	.33 (1.00)
Dissociation	30 (66.6)	1.11 (1.09)
Hallucinations	13 (28.8)	.49 (.96)
AVERSIVE		
Confusion	16 (35.5)	.56 (.89)
Amnesia	11 (24.4)	.31 (.63)
Blurred vision	24 (53.3)	.67 (.73)
Vertigo	17 (37.7)	.58 (.91)
Aggressiveness	25 (55.5)	.87 (1.05)
Mumbled speech	21 (46.6)	.71 (1.07)
Dysphoric mood	11 (24.4)	.31 (.59)
Irritability	19 (42.2)	.62 (.88)
Suicidal ideation	2 (4.4)	.13 (.66)
Chest pain	18 (40)	.56 (.84)
Burning in eyes and throat	22 (48.8)	.69 (.87)
Rapid heartbeat	19 (42.2)	.47 (.58)
Fatigue	9 (20)	.47 (.99)
Nausea	41 (91.1)	1.27 (.72)

Phenomenology of inhalant intoxication in relation to type of inhalant abused:

Among the subjects using only adhesive (N=37) and those using both adhesive and whitener (N=8), there was no statistically significant difference in their mean age, education, occupation, age at first use, amount used, mode of inhalant abused, and frequency of inhalant abuse. However, mean time spent on single use and mean duration of inhalant abuse was significantly higher in the subjects using two inhalants (p<0.05). Also, they experienced euphoria (p=.001), talkativeness (p=.008), grandiosity (p=.000), hallucinations (p=.001), confusion (p=.024) and amnesia (p=.036) were significantly more (Table 4).

Table 4: Phenomenology of intoxication according to type of inhalant abused and duration of inhalant exposure

Intoxication phenomenology	Type of inhalant abused			Duration of exposure		
	Adhesive alone Mean Response (SD) N=37	Adhesive and whitener both Mean Response (SD) N=38	P Value	<15 min Mean Response (SD) N=22	>=15min Mean Response (SD) N=23	P Value
HEDONIC						
Euphoria	1.49 (.98)	3.25 (1.16)	.001	1.23 (.75)	2.35 (1.33)	.004
Relaxation	3.03 (.72)	3.38 (.91)	.215	3.00 (.69)	3.17 (.83)	.409
Talkativeness	.68 (1.02)	2.25 (1.58)	.008	.36 (.79)	1.52 (1.41)	.001
Grandiosity	.00 (.00)	1.88 (1.72)	.000	.00 (.00)	.65 (1.33)	.022
Dissociation	1.11 (1.04)	1.13 (1.35)	.790	.77 (.81)	1.43 (1.23)	.070
Hallucinations	.27 (.73)	1.50 (1.30)	.001	.14 (.35)	.83 (1.23)	.018
AVERSIVE						
Confusion	.38 (.63)	1.38 (1.40)	.024	.27 (.55)	.83 (1.07)	.050
Amnesia	.19 (.39)	.88 (1.12)	.036	.14 (.35)	.48 (.79)	.087
Blurred vision	.57 (.60)	1.13 (1.12)	.180	.64 (.58)	.70 (.87)	.851
Vertigo	.51 (.83)	.88 (1.24)	.594	.50 (.59)	.65 (1.15)	.683
Aggressiveness	.70 (.84)	1.63 (1.59)	.145	.64 (.65)	1.09 (1.31)	.433
Mumbled speech	.62 (.95)	1.13 (1.55)	.549	.45 (.51)	.96 (1.39)	.508
Dysphoric mood	.27 (.56)	.50 (.756)	.332	.36 (.65)	.26 (.54)	.628
Irritability	.49 (.65)	1.25 (1.48)	.240	.50 (.67)	.74 (1.05)	.653
Suicidal ideation	.05 (.32)	.50 (1.41)	.212	.00 (.00)	.26 (.915)	.162
Chest pain	.54 (.69)	.63 (1.40)	.474	.45 (.59)	.65 (1.02)	.805
Burning in eyes and throat	.57 (.68)	1.25 (1.38)	.170	.59 (.73)	.78 (.99)	.609
Rapid heartbeat	.49 (.55)	.38 (.74)	.422	.45 (.59)	.48 (.59)	.875
Fatigue	.43 (.95)	.63 (1.18)	.670	.27 (.70)	.65 (1.19)	.241
Nausea						

p value is significant at 0.05 level

Phenomenology of intoxication in relation to time spent on inhalation:

The subjects whose duration of exposure in single use was 15 minutes or more, had significantly higher experience of euphoria (p=.004), talkativeness (p=.001), grandiosity (p=.022), hallucinations (p=.018) and confusion (p=.050) than those with duration of exposure less than 15 minutes. (Table 4)

Phenomenology of inhalant intoxication in relation to mode of inhalation:

Hallucinations (p=0.13) were significantly higher in the group which used huffing (N=17) and bagging (N=12) as a method of inhalation as compared to sniffing (N=16). Rapid heart beat was experienced significantly more often in the group which abused inhalant by bagging (Table 5).

Table 5: Phenomenology of intoxication according to mode of inhalation and frequency of lifetime use of inhalants

Table 5: Phenomenology of intoxication according to mode of inhalation and frequency of lifetime use of inhalants

Intoxication phenomenology	Mode of inhalation				Frequency of lifetime use		
	Sniffing Mean Response (SD) N=16	Huffing Mean Response (SD) N=38	Bagging Mean Response (SD) N=12	P Value	<100 Mean Response (SD) N=22	>100 Mean Response (SD) N=23	P Value
HEDONIC							
Euphoria	1.31 (.70)	2.29 (1.53)	1.75 (1.05)	.146	1.41 (.90)	2.17 (1.37)	.055
Relaxation	2.88 (.80)	3.41 (.71)	2.92 (.66)	.083	3.00 (.69)	3.17 (.83)	.409
Talkativeness	.38 (.80)	1.35 (1.57)	1.17 (1.11)	.063	.50 (.85)	1.39 (1.46)	.026
Grandiosity	.00 (.00)	.76 (1.48)	.17 (.57)	.089	.09 (.42)	.57 (1.30)	.157
Dissociation	.69 (.79)	1.18 (1.28)	1.58 (.99)	.072	.91 (.81)	1.30 (1.29)	.457
Hallucinations	.06 (.25)	.76 (1.14)	.67 (1.15)	.043	.27 (.88)	.70 (1.02)	.033
AVERSIVE							
Confusion	.25 (.44)	1.00 (1.17)	.33 (.65)	.070	.18 (.39)	.91 (1.08)	.008
Amnesia	.13 (.34)	.53 (.87)	.25 (.45)	.269	.18 (.39)	.43 (.78)	.289
Blurred vision	.56 (.62)	.53 (.71)	1.00 (.85)	.212	.82 (.79)	.52 (.66)	.185
Vertigo	.38 (.71)	.88 (1.05)	.42 (.90)	.116	.45 (.80)	.70 (1.02)	.385
Aggressiveness	.75 (.57)	1.12 (1.40)	.67 (.98)	.649	.77 (.81)	.96 (1.26)	1.000
Mumbled speech	.38 (.50)	1.18 (1.55)	.50 (.52)	.383	.32 (.47)	1.09 (1.34)	.026
Dysphoric mood	.38 (.71)	.24 (.56)	.33 (.49)	.709	.18 (.50)	.43 (.66)	.112
Irritability	.44 (.62)	.82 (1.18)	.58 (.51)	.770	.50 (.67)	.74 (1.05)	.653
Suicidal ideation	.00 (.00)	.35 (1.05)	.00 (.00)	.186	.00 (.00)	.26 (.91)	.162
Chest pain	.31 (.60)	.76 (1.09)	.58 (.66)	.319	.45 (.59)	.65 (1.02)	.805
Burning in eyes and throat	.63 (.71)	.82 (1.18)	.58 (.51)	.997	.59 (.73)	.78 (.99)	.609
Rapid heartbeat	.50 (.51)	.18 (.39)	.83 (.71)	.016	.68 (.64)	.26 (.44)	.019
Fatigue	.13 (.50)	.71 (1.16)	.58 (1.16)	.215	.00 (.00)	.91 (1.24)	.001
Nausea							

p value is significant at 0.05 level

Phenomenology of inhalant intoxication in relation to frequency of inhalation:

Subjects with frequency of lifetime use more than or equal to 100 (N=23), experienced significantly more talkativeness (p=.026), hallucinations (p=.033), confusion (p=.008), mumbled speech (p=.026) and fatigue (p=.001), while they experienced significantly less palpitations (p=.019) compared to those whose lifetime frequency of inhalant use was less than 100 (N=22). (Table 5)

Phenomenology of inhalant withdrawal:

All subjects (100%) reported high levels of craving during withdrawal state of inhalants. Dysphoric mood was reported by 93.3%, followed by body ache in 91.1%, irritability and inattentiveness in 88.8%, restlessness in 77.7%, insomnia in 68.8%, anxiety in 57.7%, headache in 53.3%, fast heart beat in 51.1%, runny eyes/nose in 37.7%, tingling in 28.8%, nausea in 26.6%, hallucination in 4.4% and vomiting in 2.2% subjects (Table 6).

Table 6: Phenomenology of withdrawal: distribution and mean response reported

Withdrawal phenomenology	Experienced by Number of subjects (%)	Mean Response reported SD N=45
Restlessness	35 (77.7)	1.73 (1.35)
Inattentiveness	40 (88.8)	1.71 (1.03)
Anxiety	26 (57.7)	1.00 (1.14)
Insomnia	31 (68.8)	1.16 (1.18)
High levels of craving	45 (100)	2.56 (.86)
Headache	24 (53.3)	.80 (.91)
Nausea	12 (26.6)	.29 (.50)
Vomiting	1 (2.2)	.02 (.14)
Hallucinations	2 (4.4)	.11(.53)
Runny eyes/nose	17 (37.7)	.49 (.81)
Fast heart beat	23 (51.1)	.78 (.85)
Body ache	41 (91.1)	1.82 (1.00)
Tingling	13 (28.8)	.38 (.65)
Irritability	40 (88.8)	1.60 (.88)
Dysphoric mood	42 (93.3)	2.36 (1.20)

Phenomenology of inhalant withdrawal in relation to type of inhalant abused

The subjects who inhaled both adhesive and whitener (N=8) experienced significantly higher restlessness (p=.022), anxiety (p=.029), craving (p=.032), vomiting (p=.032), hallucinations (p=.002) and dysphoric mood (p=.024) than those who inhaled adhesive fluid alone (N=37). (Table 7)

Phenomenology of withdrawal in relation to duration of exposure

Patients who inhaled for >=15 minutes (N=23) experienced significantly higher levels of craving (p=.023) and but lesser palpitations (p=.024) than those who inhaled for lesser duration at single use (Table 7).

Phenomenology of withdrawal in relation to mode of inhalation

The subjects who used huffing (N=17) for inhalation experienced significantly higher levels of craving (p=.012), while they experienced palpitations significantly less often than other two groups of patients abusing by sniffing or bagging (p=.007). (Table 8)

Table 7: Phenomenology of inhalant withdrawal according to type of inhalant abused and duration of inhalant exposure

Withdrawal phenomenology	Type of inhalant			Duration of exposure		
	Adhesive alone Mean Response (SD) N=37	Adhesive and whitener both Mean Response (SD) N=8	P Value	<15 min Mean Response (SD) N=22	>=15min Mean Response (SD) N=23	P Value
Restlessness	1.49 (1.17)	2.88 (1.64)	.022	1.41 (1.05)	2.04 (1.55)	.155
Inattentiveness	1.54 (.83)	2.50 (1.51)	.059	1.55 (.67)	1.87 (1.29)	.377
Anxiety	.76 (.83)	2.13 (1.72)	.029	.82 (.90)	1.17 (1.33)	.493
Insomnia	.92 (.82)	2.25 (1.90)	.088	.91 (.81)	1.39 (1.43)	.432
High levels of craving	2.41 (.76)	3.25 (1.03)	.032	2.23 (.61)	2.87 (.96)	.023
Headache	.70 (.74)	1.25 (1.48)	.424	.86 (.71)	.74 (1.09)	.276
Nausea	.27 (.50)	.38 (.51)	.487	.18 (.39)	.39 (.58)	.194
Vomiting	.00 (.00)	.13 (.35)	.032	.00 (.00)	.04 (.20)	.328
Hallucinations	.00 (.00)	.63 (1.18)	.002	.00 (.00)	.22 (.73)	.162
Runny eyes/nose	.35 (.48)	1.13 (1.55)	.222	.36 (.49)	.61 (1.03)	.689
Fast heart beat	.84 (.83)	.50 (.92)	.246	1.05 (.78)	.52 (.84)	.024
Body ache	1.73 (.90)	2.25 (1.38)	.270	1.91 (.75)	1.74 (1.21)	.537
Tingling	.38 (.63)	.38 (.74)	.867	.32 (.56)	.43 (.72)	.700
Irritability	1.54 (.69)	1.88 (1.55)	.635	1.55 (.51)	1.65 (1.15)	.617
Dysphoric mood	2.16 (1.16)	3.25 (1.03)	.024	2.23 (1.06)	2.48 (1.34)	.374

p value is significant at 0.05 level

Table 8: Phenomenology of inhalant withdrawal in relation to mode of inhalation and frequency of lifetime use

Intoxication phenomenology	Mode of inhalation				Frequency of lifetime use		
	Sniffing Mean Response (SD) N=16	Huffing Mean Response (SD) N=17	Bagging Mean Response (SD) N=12	P Value	<100 Mean Response (SD) N=22	>=100 Mean Response (SD) N=23	P Value
Restlessness	1.75 (1.23)	1.53 (1.41)	2.00 (1.47)	.530	1.27 (1.16)	2.17 (1.40)	.031
Inattentiveness	1.63 (.80)	1.71 (1.31)	1.83 (.937)	.894	1.32 (.64)	2.09 (1.20)	.011
Anxiety	.88 (.95)	1.29 (1.49)	.75 (.754)	.568	.82 (1.00)	1.17 (1.26)	.342
Insomnia	.88 (.71)	1.24 (1.48)	1.42 (1.24)	.894	1.36 (1.04)	.96 (1.29)	.057
High levels of craving	2.19 (.54)	3.00 (1.00)	2.42 (.79)	.012	2.36 (.58)	2.74 (1.05)	.155
Headache	.88 (.80)	1.00 (1.11)	.42 (.66)	.939	.77 (.75)	.83 (1.07)	.816
Nausea	.19 (.40)	.35 (.60)	.33 (.49)	.440	.27 (.55)	.30 (.47)	.637
Vomiting	.00 (.00)	.06 (.24)	.00 (.00)	.332	.00 (.00)	.04 (.20)	.328
Hallucinations	.00 (.00)	.29 (.84)	.00 (.00)	.164	.00 (.00)	.22 (.73)	.162
Runny eyes/nose	.50 (.51)	.71 (1.16)	.17 (.38)	.870	.36 (.49)	.61 (1.03)	.689
Fast heart beat	1.06 (.85)	.29 (.84)	1.08 (.99)	.007	.95 (.89)	.61 (.78)	.188
Body ache	2.13 (.80)	1.65 (1.32)	1.67 (.65)	.192	1.86 (.77)	1.78 (1.2)	.794
Tingling	.31 (.60)	.47 (.71)	.33 (.65)	.503	.27 (.55)	.48 (.73)	.332
Irritability	1.56 (.62)	1.76 (1.14)	1.42 (.79)	.454	1.50 (.67)	1.70 (1.06)	.626
Dysphoric mood	2.38 (.88)	2.35 (1.57)	2.33 (1.07)	.796	2.14 (1.03)	2.57 (1.34)	.147

p value is significant at 0.05 level

Phenomenology of withdrawal in relation to frequency of use

The subjects whose lifetime frequency of inhalant use was >=100 (N=23) experienced significantly more restlessness (p=.031) and inattentiveness (p=.011) compared to those with lesser lifetime frequency (N=22). (Table 8)

DISCUSSION

All of the subjects in our study were male adolescents and 62.2% of them were students. It highlights the scope of early identification and management of inhalant abuse through school health programs. This could suggest that use of such substances is predominately limited to young male population from lower socio-economic strata of the community. However, this does not rule out the possibility of inhalant use in females too. It is possible that females too might be using inhalants but either they are not dependent on inhalant or not aware of the treatment. Most of our cases were from rural locality, while earlier

studies reported residents of urban background abusing volatile solvents (Kumar et al, 2008; Verma et al,2011). At the de-addiction services being provided by the department in the tertiary care hospital, these adolescents do not seek help.

The median time spent on inhalation was 15 minutes in our study which was similar to that described earlier.[3] We found adhesive fluid (to fix punctures) as the most common inhalant abused in our sample, while other studies from India have reported whitener fluid to be the commonest inhalant abused in their respective samples (Kumar et al,2008; Verma et al,2011). This could be due to rural and poor socio-economical background of our sample. The adhesive fluid is much cheaper and easily available locally too.

In depth assessment was carried about the phenomenology of inhalant intoxication and withdrawal. Immediately after using the inhalant, all the subjects experienced relaxation and majority experienced euphoria. A study from India has also described that most common symptom experienced

during intoxication in their studied subjects was a feel of kick/relaxation(Kumar et al,2008). 28.8% subjects also experienced hallucinations during intoxication and indeed it has been reported earlier that the desire to have this experience can be a powerful reason to misuse volatile substances(Cruz SL,2011) Besides experiencing hedonic symptoms, all subjects experienced one or the other aversive symptoms during intoxication. More than 50% subjects experienced symptoms of nausea, aggressiveness and blurred vision during intoxication. Other commonly experienced symptoms were burning sensation in eyes and throat, mumbled speech, irritability, palpitations, chest pain and confusion.

Among withdrawal symptoms, all subjects reported high levels of craving and more than 90% subjects experienced several other withdrawal symptoms. More than 50% subjects experienced withdrawal symptoms of dysphoric mood, body ache, irritability, inattentiveness, restlessness, insomnia, anxiety, headache and palpitations. The frequency of withdrawals experienced by patients of current study was concordant with earlier Indian studies (Kumar et al,2008; Verma et al,2011). Another Indian study described that more than 90% subjects experienced withdrawals like poor concentration, irritability, restlessness and insomnia (Verma et al,2011) , while other authors who had studied patients abusing whitener fluid, had described that 90.5% experienced craving and 57.1% subjects had experienced other withdrawals. However, more number of subjects in our study reported withdrawal as compared to the findings of a study from United States, which found that only 11.1% patients of inhalant abuse developed withdrawals (Ridenour et al,2007).

In our study, subjects reported that the experience of intoxication occurred immediately on inhaling vapors and that effects of intoxication lasted for mean 5.82 hours which was consistent with literature. In fact, it has been reported that organic solvents have rapid access to the brain, peaking within 1–3 min in primates and rodents (Lubman et al,2008). Also, animal imaging studies reported high uptake and slower clearance of these lipophilic substances. However, data of human studies are lacking in literature (Lubman et al,2008).

We found that the subjects, who abused typewriter eraser fluid and adhesive both, experienced more euphoria, grandiosity, talkativeness, hallucinations, confusion and amnesia than those abusing adhesive alone. Also most withdrawal symptoms were found

most often in group abusing both substances. These patients were also abusing inhalants for significantly longer period and inhaled vapors for longer duration during each exposure, which can explain the higher frequency of symptoms experienced. The chemical constituent (with psychoactive properties) of adhesive is toluene, while it is trichloroethane for whitener/thinner fluids. But it has also been reported that toluene and trichloroethane appear to produce similar type of effects on central nervous system because of which, we assessed the phenomenology of both inhalants with respect to mode of inhalation, duration of exposure and frequency of inhalation together as a single group (Howard et al,2011).

With respect to mode of inhalation, we found that bagging was more often associated with development of hallucinations and rapid heartbeat during intoxication compared to other modes of inhalation. Indeed, bagging has been described to increase the concentration of inhaled vapors more than huffing and sniffing and at higher concentrations, solvents are known to produce hallucinations (Lubman et al,2008; Cruz SL,2011). However, during withdrawals, huffing was associated with highest craving and least palpitations.

We also found that during intoxication, the subjects who inhaled for longer duration, experienced euphoria, talkativeness, grandiosity, hallucinations and confusion more often than subjects who inhaled for lesser duration. Again, this can be explained to be produced by higher exposure to inhalants by longer duration of intake in single time. During withdrawals, higher levels of craving and lesser palpitations were associated with those who inhaled for longer duration.

With respect to frequency of lifetime use of inhalant, we found that high frequency users experienced more talkativeness, hallucinations (hedonic) and more aversive (confusion, mumbled speech and fatigue) intoxication phenomenology than the subjects using inhalants in lesser frequency which was concordant with previous research where the authors tried to explain this as to be the result of altered neural sensitization as a consequence of habitual, frequent inhalant use (Garland & Howard,2010;Garland et al,2011). However, higher frequency users experienced significantly lesser palpitations during withdrawals.

In summary, our study tried to explore all aspects of symptoms of intoxication and withdrawals of volatile solvents which have not been investigated in totality

previously. Our study has several strengths. Firstly, we analyzed all patients cross sectionally who were current users of inhalants. This minimized recall bias for symptoms experienced. Secondly, we described the symptoms experienced by adhesive fluid as well as both adhesive and whitener fluid, while earlier studies have mainly described symptoms experienced by users of whitener (typewriter eraser) fluid. Thirdly, we additionally compared the symptom profile on the basis of mode and frequency of inhalant use, along with time spent on single use and dose used. Fourthly we utilized a semi structured performa for assessing the symptoms, as there is no standardized tool available for assessment. Fifthly, the sample size in our study was adequate compared to earlier studies, as till now majority of the studies related to this topic are case reports and case series. Lastly, the information given by patients was corroborated by accompanying family members to increase the reliability of findings. However, our study still has few limitations. The patients recruited in our study who were abusing typewriter correction fluid were less and were not exclusive user of the same. Future studies may be taken up with larger sample size of patients abusing different types of inhalants for assessing and comparing the phenomenology of various inhalants abused.

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REFERENCES

- Basu, D., Jhirwal, O.P., Singh, J., Kumar, S., Matto, S.K.(2004) Inhalant abuse by adolescents: A new challenge for Indian physicians. *Indian Journal of Medical Sciences*,58,245–249.
- Beckman, N.J., Zacny, J.P., Walke,r D.J.(2008) Within-subject comparison of the subjective and psychomotor effects of a gaseous anesthetic and two volatile anesthetics in healthy volunteers. *Drug and Alcohol Dependence*,81,89-95.
- Bowen, S.E. (2011)Two Serious and Challenging Medical Complications Associated with Volatile Substance Misuse: Sudden Sniffing Death and Fetal Solvent Syndrome. *Substance Use & Misuse*,46, Supplement(1),68-72.
- Cruz, S.L. (2011)The latest evidence in the neuroscience of solvent misuse: an article written for service providers. *Substance Use & Misuse*,46,62-67.
- Dell, C.A., Gust, S.W., MacLean, S. (2011) Global issues in volatile substance misuse. *Substance Use & Misuse*,46,1-7.
- Garland, E.L., Howard, M.O.(2010) Phenomenology of adolescent inhalant intoxication. *Experimental and Clinical Psychopharmacology*,18(6),498-509.
- Garland, E.L., Howard, M.O., Vaughn, M.G., Perron, B.E.(2011) Volatile Substance Misuse in the United States. *Substance Use & Misuse*,46, Suppl, 1, 8-20.
- Gupta, S.K., Bali, S., Jiloha, R.C. (2009)Inhalant abuse: An overlooked problem. *Indian Journal of Psychiatry*,51,160–161.
- Howard, M.O., Bowen, S.E., Garland,E.L., Perron, B.E., Vaughn, M.G. (2011) Inhalant use and inhalant use disorders in the United States. *Addiction Science Clinical Practice*,6,18-31.
- Kono, J., Miyata, H., Ushijima, S., et al. (2001) . Nicotine, alcohol, methamphetamine, and inhalant dependence: a comparison of clinical features with the use of a new clinical evaluation form. *Alcohol*,24,99-106.
- Kumar, S., Grover, S., Kulhara, P. et al(2008). Inhalant abuse: A clinic-based study. *Indian Journal of Psychiatry*,50,117-120.
- Lubman, D.I., Yücel, M., Lawrence, AJ.(2008) Inhalant abuse among adolescents: neurobiological considerations. *British Journal of Pharmacology*, 154,316-26.
- MacLean, S.(2008) Volatile bodies: stories of corporeal pleasure and damage in marginalised young people's drug use. *International Journal of Drug Policy*,19,375-83.
- Perron, B.E., Howard, M.O., Vaughn, M.G., Jarman, C.N. (2009)Inhalant Withdrawal as a Clinically Significant Feature of Inhalant Dependence Disorder. *Medical Hypotheses*,73,935-7.
- Praharaj, S.K., Verma, P., Arora, M. (2008) Inhalant abuse (typewriter correction fluid) in street children. *Journal of Addiction Medicine*,2,175-7.
- Ridenour, T.A., Bray, B.C., Cottler, L.B. (2007)Reliability of use, abuse, and dependence of four types of inhalants in adolescents and young adults. *Drug and Alcohol Dependence*,91,40–49.

Shah, R., Vankar, G.K., Upadhyaya, H.P.(1999) Phenomenology of gasoline intoxication and withdrawal symptoms among adolescents in India: a case series. *American Journal of Addiction*,8,254-7.

Sharma, S., Lal, R.(2011) Volatile substance misuse among street children in India: a preliminary report. *Substance Use & Misuse*,46,46-9.

Verma, R., Balhara, Y.P., Deshpande, S.N. (2011) Inhalant abuse: a study from a tertiary care de-addiction clinic. *East Asian Archives of Psychiatry*,21,157-163.

Waraich, B.K., Chavan, B.S., Raj, L.(2003) Inhalant abuse: a growing public health concern in India. *Addiction*,98(8),1169.

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Research Article

IMPLEMENTATION OF TOBACCO CONTROL LAWS AROUND EDUCATIONAL INSTITUTIONS IN
NATIONAL CAPITAL REGION (NCR)

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Abstract

Background: Tobacco is the single largest cause of preventable mortality and morbidity. Implementation of tobacco control laws is an essential tobacco control strategy. The study was aimed to look in to the implementation of tobacco control laws within 100 yards of educational institutes in the NCR. **Methods:** Six educational institutes were randomly selected by systematic random sampling of schools/colleges in all districts of Delhi and NCR for the study. The sale of tobacco products within a distance of 100 yards of the educational institutes was observed. The number of shops/kiosks selling tobacco products, display of prohibitory warning at the gate of the institutes, display of warning against sale to minors was noted around the educational institutions. **Results:** It was observed that the number of shops selling tobacco ranged from 2-21 within prohibited zone of 100 yards from the educational institutes. About half (50%) of the educational institutes studied had put up warning at their gate prohibiting sale of tobacco products within their 100 yards. Sale of cigarettes and other tobacco products was present around all educational institutes. The point of sale warning was mostly (87.7%) not of proper specification and was not displayed properly. **Conclusions:** The study shows that even in Delhi and NCR there is rampant violation of tobacco control laws. The ban on sale within 100 yards of educational institution is not being enforced effectively. The institutes need to implement display of prohibitory warning at their gates. There is dire need to improve the implementation of tobacco control laws near educational institutes to achieve the overall objective of tobacco control.

Key words: Tobacco, Implementation of tobacco law, Educational Institutes, Delhi

INTRODUCTION

The tobacco pandemic is one of the major global health problems. It was estimated that more than 1 billion smokers in the world smoked about 5.7 trillion cigarettes in the year 2006 (Shafey et al, 2009). It is found to be higher for men (40%) than for women (nearly 9%), and men account for 80% of all smokers (WHO, 2009). Tobacco kills nearly 6 million people each year, and if an urgent action is not taken, the annual death toll could rise to more than 8 million by 2030 (WHO 2012). In addition, second-hand smoke causes more than 6,00,000 premature deaths per year (WHO, 2012). In 2004, children accounted for 31% of the deaths attributable to second-hand smoke (WHO, 2012).

The statistics for India are even more astounding. It was found that 700 billion bidis are consumed annually in India alone (Asma & Gupta, 2008). According to GATS

(Global Adult Tobacco Survey) India 2009-10 factsheet, about 34.6% of the country's adult population uses tobacco which includes 47.9% males and 20.3% females. Tobacco is smoked by 14% of adult population and smokeless tobacco is used by 25.9% of adult population. It has been estimated that 20% of deaths among men and 5% of deaths among women between the ages of 30 and 69 are caused by smoking. Recent estimates indicate that almost 1 million adult deaths per year of people between the ages of 30 and 69 in India are caused by smoking (GOI, 2010). In Delhi the prevalence of tobacco use is 24.3%. (GOI, 2010).

Furthermore, it has been suggested that initiation of tobacco use occurs at a young age. Twelve percent (West Bengal) to 88% (Manipur) of smokers smoked their first cigarette before the age of 10 years (WHO, GYTS, 2002). According to GYTS (Global Youth Tobacco Survey) India 2009 statistics, the prevalence of tobacco use in any form in students from 13 to 15 years of age is

14.6% (Boys- 19%, Girls-8.3%). About 4.4% currently smoke cigarettes and 12.5% use other tobacco products. About 15.5% of never smokers are likely to initiate smoking next year. The knowledge and attitudes about smoking in the youth were rather surprising. Twenty four percent boys and 13% girls believe that those who smoke have more friends. Twenty one percent boys and 16% girls believe that those who smoke look more attractive (GOI, 2010).

Moreover, three local surveys done in Delhi provide an estimate of local prevalence of tobacco use in the city in different years. The first study, done in 1985-86, included 14,770 people in the age group of 25 – 64 years. The smoking prevalence amongst men was 45 % and amongst women was 7 % at that time (Narayan et al, 1996). The second study including 10,312 people of 10 years of age and above, revealed that 28% males and 3% females were smokers in the city in the year 1992 (Mohan et al, 2002). The third study, conducted in the urban and rural areas of Delhi in 2005, showed 41% of males and 7% females in rural areas and 18% males and 1% females in urban areas of Delhi were smokers. (Jindal et al, 2005).

The harmful effects of tobacco in chewable and smoking form are well established. It can't be overstressed that tobacco consumption causes enormous morbidity and mortality, harms the health of the people, increases the burden on health care facilities and hinders the overall socio-economic development.

Keeping in view, the above mentioned facts, WHO has incorporated the MPOWER strategy comprising of 6 policies to stop the tobacco epidemic (WHO, 2008). It includes:

- Monitoring tobacco use and prevention policies,
- Protecting people from tobacco smoke,
- Offering help to quit tobacco use,
- Warning about the dangers of tobacco,
- Enforcing bans on tobacco advertising, promotion and sponsorship,
- Raising taxes on tobacco.

The first principle which talks about monitoring the tobacco consumption lays emphasis on laws followed in different countries for manufacturing, sale and consumption of tobacco. Long before this strategy, India, had implemented various laws for tobacco control measures. The Government of India (GOI)

initiated the 'Cigarettes Act in 1975' (GOI, 1975). A comprehensive legislation was enacted by the name of 'Cigarettes and Other Tobacco Products Act, 2003' (GOI, 2003) in the year 2003. India was also amongst the first few countries to join 'The Framework Convention on Tobacco Control' of WHO in 2004 (WHO, 2004). The National Tobacco Control Program was launched in 2007 to further strengthen and implement the existing tobacco control laws (GOI, 2008).

Prohibition of Sale of Cigarettes and Other Tobacco Products around Educational Institution Rule was framed in 2004 to implement COPTA (GOI, 2004), the key points of which are summarized as follow:

- No sale of cigarette or tobacco products to any person who is under 18 years of age and in the area within a radius of 100 yards of any educational institution (Section-6)
- Educational institution would mean places/centres where educational instructions are imparted and shall include school, colleges and institutions of higher learning established or recognized by an appropriate authority.
- The Owner/Manager etc. of an educational institution shall display and exhibit a Board or Boards outside the premises stating that sale of cigarettes and other tobacco products within a radius of 100 yards is prohibited. These 100 yards is to be measured from the outer limit of the boundary wall.

The above rules are implemented by: i) display of a board by the educational institute at their entrance gate regarding prohibition of sale within 100 yards of the school ii) no sale of tobacco products within 100 yards of the educational institute by any shop/kiosks or otherwise

In addition, even for sale beyond 100 yards of the educational institutions the seller has to mandatorily display statutory warning in size of 2' X 1' against sale to minor by the shop/kiosk owner as well as warning of harm from tobacco use such as 'tobacco use causes cancer'.

The prime focus of tobacco industry is to engage new users at an early age. Young adults and adolescents are more likely to experiment with tobacco. Sale near schools and colleges results in easy availability of tobacco products to this target population and may result in increased initiation and use of tobacco products due to peer pressure.

Consequently, it becomes important to check the implementation of laws in order to monitor the harmful effects of tobacco use. If we can ensure strict enforcement to delay or stop of the initiation of tobacco use, the problem of tobacco use can be contained in a much better way. Keeping in mind these considerations, the present study was done to assess the sale of tobacco products and implementation of tobacco control laws around educational institutes in the National Capital Region. Such a study would also reflect on other cities of India as law enforcement infrastructure and implementation is expected to be stricter in the NCR.

To study was designed to study the implementation of tobacco control laws within 100 yards of educational institutions in NCR.

The primary objectives included the assessment of number of shops/kiosks selling tobacco products, display of prohibitory warning at the gate of the institutes against sale of tobacco products and display of statutory warning against tobacco sale to minors around educational institutes.

METHODOLOGY

For the purpose of study, six districts of Delhi and NCR were selected at random from the total districts in the region. One educational institute each was selected at random from each chosen district. A total of six

educational institutes were selected and then observed for implementation of- i) display of prohibitory warning at their gates ii) the sale of tobacco products within 100 yards of their outer boundary iii) display of statutory warning against the sale of tobacco products to minors at the point of sale.

Distance was measured by counting the number of footsteps of researchers in 100 yards. The shops/kiosks selling tobacco products were mapped and observed for display of warning against sale to minors and warning about harm of tobacco use.

RESULTS

As mentioned in the Table 1, the number of shops/kiosks selling tobacco products around the six educational institutes ranged from 2 to 21. The number of temporary kiosks was more than the permanent shops around all the institutes. Very few of the shops/kiosks observed had the display board of required dimension. Sale of cigarettes and other tobacco products was present on the shops and kiosks around all the institutes. The study also showed that half (50%) of the institutes studied did not have statutory prohibitory warning at their gates against sale of tobacco products within an area of 100 yards from their premises.

Table 1: Summary of Study Findings (+ = present, - = absent)

	North Delhi	East Delhi	West Delhi	South Delhi	Central Delhi	NCR(Gurgaon)
Shops	2	3	1	3	1	0
Kiosks	3	4	4	4	20	2
No of Shops/Kioks with Required Display Board	0	1	1	3	1	0
Sale of Cigarettes	+	+	+	+	+	+
Sale of other Tobacco Products	+	+	+	+	+	+
Display of Prohibitory Warning at Institute Gate	-	-	+	-	+	+
Total No. of violations	11	14	9	12	41	4

The Table 2 shows comparison between the total number of shops/kiosks and the shops/kiosks with required display. It was noticed that none of the shops in North Delhi, 14% shops in East Delhi, 20% shops in West Delhi, 43% shops in South Delhi, 5% shops in Central Delhi and none in Gurgaon had the recommended display board.

Table 2: No of Kiosks/Shops With Required Display Board around Educational Institutions

Area	No. of shops with required display board	Total Shops
North Delhi	0	5
East Delhi	1	7
West Delhi	1	5
South Delhi	3	7
Central Delhi	1	21
NCR (Gurgaon)	0	2

DISCUSSION

The study shows that there is rampant violation of tobacco control laws even in well supervised metropolitan areas like Delhi and NCR. This study was done after the sale of chewable tobacco was banned in the whole state of Delhi (GOI, 2011). In spite of that, there is clear evidence that the rules are being violated as it was available around all the educational institutes situated in Delhi. The ban on sale of tobacco products within 100 yards of educational institutes is not being enforced effectively. Even shops/kiosks within 100 yards do not display warning against sale to minors and seems to be focused on the young students for sale. If, we cannot manage the problem at initiation level, the control at higher levels will be much more difficult. Tobacco companies focus on younger population as their future market. Availability of tobacco in the vicinity of educational institutes and lax implementation of tobacco control laws expose vulnerable adolescents to experiment with tobacco and get addicted to it. It is easier to direct the youth away from tobacco as compared to elders because of early age flexible mind-set and no dependence on nicotine. It is also more cost effective in the longer run.

As Delhi/NCR has highest per capita police force in India the implementation of tobacco control law in this region reflects poorly on implementation of such laws in the rest of the country. There is need for sensitisation of

police in implementation of these laws. A mechanism for reporting on implementation of tobacco control laws is direly needed.

The study reflects upon the sorry state of affairs of implementation of tobacco control laws in India and the uphill task ahead to arrest the tobacco epidemic and safe guard the health of the nation.

In order to do so, the access and availability of tobacco near educational institutes need to be under stringent check. There is dire need to improve the implementation of tobacco control laws near educational institutes.

REFERENCES

- Asma S, Gupta PC. (2008) Bidi smoking and public health. Mumbai, India, Ministry of Health.
- Government of India (2004) "Prohibition of Sale of Cigarettes and Other Tobacco Products around Educational Institution Rules, 2004"
- Government of India (2011), Ministry of Health and Family Welfare, Food Safety and Regulation (Prohibition) Act.
- Government of India (2010), Ministry of Health And Family Welfare, Global Adult Tobacco Survey, India. Available from: http://whoindia.org/EN/Section20/Section25_1861.htm, Last Accessed on 2013 March, 25
- Government of India (2008). National Tobacco Control Program, 2007-08, <http://www.mohfw.nic.in>
- Government of India (2003), The Cigarettes Act 1975, Regulation of Production, Supply and Distribution. Government of India, The Cigarettes and Other Tobacco Products (Prohibition Of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act.
- Jindal SK, Gupta D, Aggarwal AN, Vijayan VK, Chhabra SK, D'Souza GA, et al. (2005) Multicentric study on epidemiology of asthma. Final report submitted to Indian Council of Medical Research, New Delhi, India.
- Mohan D, Chopra A, Sethi H. (2002) Incidence estimates of substance use disorders in a cohort from Delhi, India. *Indian Journal of Medical Research*, 115:128-35.
- Narayan KM, Chadha SL, Hanson RL, Tandon R, Shekhawat S, Fernandes RJ, et al. (1996) Prevalence and patterns of smoking in Delhi: Cross sectional study. *British Medical Journal*, 312:1576-9.

Shafey O, Eriksen M, Ross H, Mackay J. (2009) The tobacco atlas, 3rd ed. Atlanta, GA, American Cancer Society.

Tobacco Factsheet, No339, (May 2012) Available from: <http://www.who.int/mediacentre/factsheets/fs339/en/index.html>, Last Accessed on 2013, March 25.

WHO Report on the Global Tobacco Epidemic, (2009): Implementing Smoke-Free Environments. Geneva, World Health Organization, 2009.

World Health Organization (2004), Framework Convention on Tobacco Control, Geneva, Switzerland.

World Health Organization (2008), Fresh and Alive: MPOWER, WHO report on the Global Tobacco Epidemic, Geneva, Switzerland.

World Health Organization (2002) Tobacco use among youth: a cross country comparison, The Global Youth Tobacco Survey (GYTS) Corroborative Group, Tobacco Control, 11:252-270

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ABSTRACTS OF
XXI NATIONAL CONFERENCE OF
INDIAN ASSOCIATION FOR
IASP,
MYSORE,
21-23 NOVEMBER 2014

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PRESIDENTIAL ADDRESS, ORATIONS AND INVITED LECTURES

PRESIDENTIAL ADDRESS

ADVOCACY IN MENTAL HEALTH: OFFERING A VOICE TO THE VOICELESS – ROLE OF SOCIAL PSYCHIATRY

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Advocacy is taking action to help people say what they want, secure their rights, represent their interests and obtain services they need. In India, the need for independent advocacy in people with mental health problems has increased significantly over the past one decade. Advocacy promotes social inclusion, equality and justice of all those mentally ill who suffer discrimination due to their age, disability, race, gender or culture. Advocates remain independent from statutory mental health services and follow a set of principles, which ensure them to make decisions in the best interest of the patients.

The success of advocacy measures in mental health depends on several factors like the degree of commitment from the national and various state governments; peer support groups, family groups, governmental and non-governmental organizations which can function as advocacy groups and the mass media. Ensuring that advocacy is accessible free of cost to all sections of the community should be a priority.

Present day psychiatrists are worried, hostile and suspicious of the patient empowerment supposed to be attained through advocacy. The IASP can play a positive role in developing mental health advocacy by organizing awareness programmes for these groups, funding, training mental health professionals and by persuading the government to implement appropriate policies.

Some of the challenges for advocacy schemes in the future are to ascertain the degree of user-control, maintaining healthy balance between advocacy and campaigning, promising a role for volunteers, providing equitable funding arrangements – thus truly empowering our patients to their fullest potential.

Dr N.N. DE ORATION

FROM RAPE TO SEXUAL ASSAULT: LEGAL PROVISIONS AND MENTAL HEALTH IMPLICATIONS

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Sexual assault in various forms has been recognized as a crime by almost all religions and cultures throughout the recorded history. It is a crime against basic human rights of an individual and a most common crime against women in India. In India, 'rape laws' began with enactment of Indian Penal Code in 1860. There have been subsequent amendments and the main issue of focus remained the definition of 'rape' which has been recently broadened to include wide range of sexual activities. Inclusion of 'marital rape' in the ambit of rape remains a matter of debate. With a long history, the sexual offence in the form of sexual assault has been discussed from legal and mental health perspective in this presentation. Social and Psychological impact of sexual assault on the victim has also been discussed.

INVITED LECTURES

IL1 - PSYCHOEDUCATIONAL INTERVENTIONS IN LOW RESOURCE SETTINGS

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Non-pharmacological interventions are often ignored or not frequently used by the mental health professionals in low resource mental health settings in low and middle-income countries (LAMIC). Psychoeducational interventions form an important component of the non-pharmacological interventions in psychiatry. A psychoeducational intervention has been defined as any intervention that educates patients and their families about their illness with an aim of sustaining long-term improvement. It can be delivered to the patients and/or their caregivers either individually or in groups. It has been recommended as evidence-based treatment for severe mental illnesses like schizophrenia and bipolar disorder, and common

mental disorders like depression and anxiety disorders. Psychoeducation has also been used in patients with somatization disorder; its use has been associated with higher level of compliance, lower rate of relapse, and improved psychopathology, and reduced caregiver burden and improved coping. Although evidence based pharmacological and psychosocial treatment guidelines exist for the management of patients with psychiatric disorders, these are difficult to implement in low resource settings in LAMIC countries like India due to lack of manpower, infrastructure and funds. Most of mental health settings in India and other similar settings

in LAMIC group are manned predominantly by a limited number of psychiatrists and a few nurses or other non-medical professionals. It is possible to introduce formal psychoeducational interventions in such settings, since these are relatively simple and don't need much training. Such interventions can fit easily in most of the clinical settings. However, there is a need to sensitize the mental health professionals to such interventions. The presentation will focus on evidence based psychoeducational interventions, which have been used in Indian settings.

AWARD PAPERS

BALINT AWARD

UNDERSTANDING EMOTIONAL TURMOIL AND RESOLUTION OF DISTURBED FAMILY RELATIONSHIP ISSUES IN A SUICIDAL PATIENT

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In this article, a truly personal experience of a therapist-patient relationship is being described. This is the experience with a Patient Ms. A who attempted a suicidal act. The nature of demands, difficulties and emotions a therapist was exposed to while managing the patient is being depicted. The therapist-patient relationship was believed to influence critical care of the patient and a positive therapeutic relationship was associated with continuity of care and favourable treatment response. Human emotions are based on ideas and control of emotional turmoil and dysfunctional ways of handling the situations may be achieved by changing one's ideas. Once people become aware of the fact that they have some control over this, and can choose to respond differently to the disturbance in family relationship, it can make a huge difference. The presentation will describe the need for us to focus on the integrative specific skills in handling relationship issues in suicidal patients. Empathy, emotional support and encouraging expressiveness of feelings facilitated in resolving the relationship issues in the indexed patient. The intervention efforts focused upon decreasing experienced suffering, while simultaneously building upon a patient's capacity to cope with difficulties from an emotional perspective.

USE OF GESTALT THERAPY PRINCIPLES IN PSYCHOTHERAPY

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GC BORAL AWARD I

CAREGIVERS' PERCEPTION OF BURDEN AND HEALTH CARE NEEDS AMONG PATIENTS OF BIPOLAR AFFECTIVE DISORDER: A COMPARISON WITH SCHIZOPHRENIA

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Background: Very few studies have compared the caregiver's burden and needs of patients of bipolar disorder and schizophrenia. Methodology: A cross-sectional study design was employed. The study groups comprised of 50 patients with bipolar affective disorder and their caregivers and equal number of patients with schizophrenia and their caregivers were included in the study. The caregivers were assessed on Camberwell Assessment of Needs-Research Version (CAN-R) and Supplementary Needs Assessment Scale (SNAS), Family Burden Interview Schedule (FBI), and Involvement Evaluation Questionnaire (IEQ). Results: The mean total number of needs of patients as per their primary caregivers on CAN-R were 7.54 (SD-3.59) and 7.58 (SD-4.24) for bipolar disorder and schizophrenia groups. Slightly more than half of the needs as assessed on CAN-R of patients with bipolar disorder were unmet (3.92) and in the schizophrenia group about three-fifth (4.48) needs were unmet. On SNAS, the mean number of total needs were 7.24 (SD-3.67) and 7.68 (SD-5.02) for bipolar disorder and schizophrenia groups. More than two-third of the needs as assessed on SNAS were unmet for the bipolar disorder group (5.62) and schizophrenia group (6.4). The total objective and subjective burden as assessed on FBI was significantly less for the bipolar disorder group. Caregivers of bipolar disorder patients perceived significantly less disruption of the routine family activities and lower impact on the mental health of others. On IEQ, there are no significant differences between the 2 groups on the domains of tension, worrying-urging-I and worry-urging-II but the mean score on the domain of supervision was significantly higher for the bipolar disorder group. In schizophrenia group, positive correlations were seen between the total number of unmet and total (met and unmet)

needs and certain aspects of burden, but no such correlations emerged in the bipolar disorder group. Conclusion: Number of needs of patients as perceived by caregivers is similar across the 2 disorders. There is no correlation between number of needs and burden in the bipolar disorder group, however, in the schizophrenia group, number of needs correlated with the perceived burden. Accordingly orienting the services to address the needs of the patients with schizophrenia can lead to reduction in burden among the caregivers.

GC BORAL AWARD II

CHANGING SOCIAL MILIEU AND EMOTIONAL DISORDERS OF CHILDHOOD

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Introduction: The Indian society has been undergoing a visible change due to various reasons resulting in a change in social and family milieu. Children and adolescents being recipients of the changing family set up, changing relationships and the cumulative stress face numerous problems. Emotional disorders of children and adolescents are on the rise among the different psychiatric disorders of children. Parent, child and environmental factors have been implicated in the development of such disorders. Aims: To explore the conflicts of children with emotional disorders and to find the association of the conflicts assessed on Sentence Completion Test and Children's Apperception Test with the clinical variables. Results: Majority of children, both males and females, have disturbed relationship with parents (48%) and perceive family environment as unhealthy, have poor coping skills (85%), weak self identification (48%), and are unable to express themselves (74%). Discussion and Conclusion: Poor parenting and poor inter-parental relationship have been found to be an important contributing factor in emotional disorders of children and adolescents.

PRETREATMENT FACTOR STRUCTURES OF THE MONTGOMERY AND ASBERG DEPRESSION RATING SCALE AS PREDICTORS OF RESPONSE TO ESCITALOPRAM IN INDIAN PATIENTS WITH NON-PSYCHOTIC MAJOR DEPRESSIVE DISORDER

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Background/Objectives: Major depressive disorder (MDD) is a broad heterogenous construct resolving into several symptom-clusters by factor analysis. The aim is to find the factor structures of MDD as per Montgomery and Asberg Depression Rating Scale (MADRS) and whether they predict escitalopram response. Methods: In a longitudinal study in a tertiary institute in North India, 116 adult out-patients with non-psychotic unipolar MDD cases were assessed with MADRS before and after treatment with escitalopram (10-20 mg) over 6-8 weeks for drug response. Results: For total 116 patients, pre-treatment four factor structure of MADRS extracted by principal component analysis with varimax rotation altogether explained a variance of 57%; first factor 'detachment' (concentration difficulty, lassitude, inability to feel); second factor 'psychic anxiety' (suicidal thoughts and inner tension); third 'mood-pessimism' (apparent sadness, reported sadness, pessimistic thoughts) and fourth 'vegetative' (decreased sleep, appetite). Eighty patients (68.9%) who completed the study had mean age of 35.37+10.9 years majority were male (57.5%), with mean pre-treatment MADRS score 28.77+5.18 and majority (65%) having moderate severity (MADRS<30). Among them, 56 (70%) responded to escitalopram. At the end of treatment there were significant changes in all the 4 factor structures ($p<0.01$). 'Vegetative functions' was an important predictor of escitalopram response ($p<0.01$, odd's ratio: 1:3[1.1-1.6]95%CI). Melancholia on the contrary significantly predicted non-response ($p=0.04$). Conclusions: Non-psychotic unipolar major depression having moderate severity in north Indian patients as per MADRS resolved into four factor-structures and all significantly improved with adequate escitalopram treatment. Understanding the factor structure is important as they can be important predictors of escitalopram response.

PATHWAYS TO CARE OF ALCOHOL DEPENDENT PATIENTS: AN EXPLORATORY STUDY FROM A TERTIARY SUBSTANCE USE DISORDER TREATMENT CENTRE

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Background/Objectives: The published literature on pathways to care among individuals with alcohol dependence is scarce and from western countries. No study from India has examined pathways to care in alcohol using populations systematically. Thus, the

present study aimed to understand the pathways to care among alcohol dependent individuals seeking help at a tertiary care centre. Methods: It was a cross-sectional, observational study. A total of 58 subjects diagnosed with alcohol dependence syndrome as per DSM-IV TR were included in the study. Pathways to care were assessed using WHO Encounter Form. Statistical analysis was carried out using SPSS ver 21. The t-test and Mann-Whitney test were used to compare data with normal and non-normal distribution, respectively. Results: For 56.9% of the subjects, first point of contact was with a tertiary care addiction psychiatrist. Traditional healers were consulted by about 5.2% of the patients seeking help for the first time. The mean duration for main problem was 5.82+4.95 years. The first contact tended to be at place nearer to the patient's residence while further contacts tended to be farther away. Family, friends, and neighbours together constituted the single largest group suggesting care to be sought. Conclusions: There is a long time lag between the onset of alcohol use related problems and the first help seeking attempt. The patients often have to travel long distances to avail treatment. However, of those who do decide to seek help, the proportion of those obtaining specialist help is higher than expected.

COST OF TREATMENT OF SEVERE MENTAL ILLNESSES IN A TERTIARY CARE OUTPATIENT SETTING IN SOUTH INDIA

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Background and Aims: Cost-of-treatment studies can help to make informed decisions while planning healthcare services. This study aimed to assess direct costs of outpatient treatment of four common chronic severe mental illnesses in a tertiary care hospital in South India. Methods: Patients with ICD-10 diagnoses of schizophrenia (F20), unspecified nonorganic psychosis (F29), bipolar disorder (F31), and recurrent depression (F33) were recruited by purposive sampling. Cost-of-treatment to the patient, the hospital and the total treatment costs were computed for each disorder. The cost-of-treatment to the patient and total costs were also computed as a percentage of the per-capita income of the patient. Results: The study comprised a total of 140 patients. The average monthly total cost-of-treatment was Indian Rupees (INR) 770 (95% CI=725-815), or approximately US\$154 annually. Monthly total cost-of-treatment was INR 720 for schizophrenia, INR 750 for unspecified nonorganic psychosis, INR 830 for

bipolar disorder and INR 790 for recurrent depression, with no significant differences between groups. On an average, 22.8% of total cost-of-treatment was spent by the patient, and the rest by the hospital. The average monthly medication cost was INR 390 for all the groups combined, 87.9% of which was borne by the hospital. The average monthly travel cost borne by the patient was INR 130. Patients spent a median of 12% of their per-capita income on treatment related direct costs. Conclusion: Despite substantial government subsidies, patients incur some expenses in treatment of chronic psychiatric illnesses. Attempts to reduce treatment and travel costs can help in providing care to larger number of individuals.

CORRELATION BETWEEN DEPRESSION AND NEGATIVE SYMPTOMS IN CHRONIC SCHIZOPHRENIA

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This study was undertaken to find out the correlation between depression and the five components of negative symptoms in schizophrenia, primarily because of the overlap between negative symptom subsets and depression; secondarily it was aimed at exploring if there is any significant correlation between any or all of the five negative symptoms and depression. 42 chronic schizophrenic patients admitted in the Institute of Mental Health, Chennai, were taken for this study. Initial screening was done with PANSS to select cases that had no positive symptoms and only negative symptoms. Negative symptoms were assessed with SANS. These cases were then administered CDSS and HAM-D to assess and rate depression. All results were statistically analysed to see for any correlation. As seen and reported in western literature, avolition emerged as the negative symptom that correlated with depression in both CDSS and HAM-D. It was observed that HAM-D and CDSS showed the same results as done earlier in other countries. Rationale of the study and the results, with their potential indices for further exploration, are discussed in the paper.

PSYCHOLOGICAL WELL BEING IN PRIMARY SURVIVORS OF UTTARAKHAND DISASTER IN INDIA

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Introduction: After the 2004 Tsunami, India faced the

worst natural disaster in Uttarakhand causing devastating floods and landslides. Besides the material harm, disaster also has massive impact on individual's mental health and the impact is perceived more in developing countries due to being densely populated with limited resources. The current study is an attempt to evaluate the psychological impact and its risk factors in Uttarakhand disaster. Methods: This cross sectional study was conducted after 1 month of disaster in the primary survivors. All the included subjects were administered the semi-structured proforma for assessing socio-demographic profile and the assessment instruments: Impact of Events Scale-Revised (IES-R), Depression Anxiety Stress Scale (DASS) and Life Orientation Test-Revised (LOT-R). Data was imputed and analysed using SPSS ver 17.0.1. Results: About 58% subjects had post traumatic stress disorder (PTSD) and significantly severe levels of depression, anxiety and stress were noted in 45.3%, 57% and 44.2% subjects respectively. A physical illness was present in 36% subjects. Loss of at least one family member was reported by 12.8% subjects. LOT-R scores were negatively correlated to IES-R. Conclusion: Psychological morbidity in the immediate post disaster period is high. Increasing age has higher levels of depression, anxiety and stress with development of negative outlook. Regarding their future. Increasing age, lower educational levels, physical illness, loss of a family member, and pessimistic expectations were associated with adverse psychological sequelae.

ENGAGING WITH THE UNENGAGED: INITIAL EXPERIENCE FROM THE CHANDIGARH 'HOME-BASED TREATMENT' PROJECT!

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Background/Objectives: Community care is delivered in a vastly different manner as that from the west. However, models from the developed world can be adopted to suit the local Indian culture subject to testing for appropriateness. Home Based Treatment (HBT) is one such model available in the west for quite some time, and there were limited attempts of its use in India in last three decades with some success. Combined with the fact that there is a huge treatment gap in urban settings and community care is predominantly directed towards rural settings, there was a need to develop HBT as a service for tricity of Chandigarh and test its acceptability. Methods:

Development and Implementation of the HBT Service are initially described, along with the Standard Operating procedure (SOP) for the service. Thereafter, using a 'Service Evaluation Model', the patients who were seen within the service are analysed and described. Univariate and correlational analysis was carried out using SPSS 16.0 version. Results: Following screening (based on intake criteria), there were 85 patients enrolled in HBT. They were middle-aged, unmarried, unemployed, most commonly suffering with severe mental illness (predominantly schizophrenia) and severe functional impairment (mean GAF score =33), receiving some kind of treatment, experiencing an average of 2 stressors (significant losses & relationship conflicts being the most common). The mean time taken for initial contact after receiving the referral was 6.70 days. Patients spent just under 3 months in follow-up with mean number of 4.31 visits. Regarding clinical status at time of last follow-up, there were 13 (15%) patients who did not meet HBT criteria; nearly 1/5th each improved or were linked with OPD services, or had to be admitted/worsened. In terms of key variable of 'engagement with service', 54/72 (75%) patients engaged fully with the service. On comparing 'engagers' with 'partial/non-engagers', 'engagers' were significantly younger, less likely to be divorced, more likely to report relationship conflicts, less likely to have patients with a diagnosis of ICD-10 category F0 (Organic, including symptomatic, mental disorders), less likely to lack social support, more likely to present with risk of threat to others and risk of relapse spent more time in the service, reported higher levels of satisfaction with HBT personnel and HBT as a service than 'non/partial engagers'. Key correlations were: total number of stressors correlated with duration of follow-up and number of visits; time taken for first visit after receipt of referral and baseline GAF score. Conclusions: HBT as a service showed reasonable degree of interest and acceptance as an additional service in the tricity set-up, with good rates of satisfaction amongst service users and high degree of engagement. This was seen over a short span of time since its inception. Nevertheless, there is a need in the future for continuation of this service, and assessment in the 'service evaluation' model, and to demonstrate fidelity and consistency for replication at other centres in India along with other recommendations. To conclude, HBT is one such service developed for addressing the urban based treatment gap and engaging the unengaged people with mental illnesses.

BBSETHI AWARD

STRUCTURING AND SELF-COMPETENCE: HOW THEY CAN MAKE A DIFFERENCE IN ASSESSING AND MANAGING RISK

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Background/Objectives: Self-harm and Harm to others are linked with suicide and homicide. Assessing risk is a mandatory part of standard mental health practice in the West. The process of risk assessment is fraught with difficulties, but it has been seen that structuring and self-efficacy are important factors. There is near absence of work on this aspect from India. This study aimed to determine how the concepts of structuring and self-competence can make a difference in assessing and managing risk. Methods: A prospective cross-sectional study over a period of 2 months was conducted with 35 participants (dealing with patients with mental illnesses) from Department of Psychiatry, GMCH-32, Chandigarh and 30 participants in comparison group (dealing with people with intellectual disabilities) from Regional Institute of Mentally Handicapped, Chandigarh using Risk Assessment and Management Self-Efficacy Scale (RAMSES). Written informed ethical consent was taken from all participants. Univariate and correlational analysis was carried out using SPSS 16.0 version. Results: In the overall sample (n=65), only 17% reported using a screening instrument while 62% reported use of screening questions thereby making the total prevalence of use of screening instruments and/or questions in 79% (four-fifths) of the sample. The total RAMSES score and the mean score for all three domains was 7.14 and between 7 to 8 respectively for the study group; while for the comparison group, the total RAMSES score was 7.92 and the mean score for all three domains was between 7 to 9 respectively indicating above average level of reported self-efficacy. For the individual RAMSES items in both the groups, a lower competency (<7 for study group) and (<8 for comparison group) was reported for formal or written process related to synthesis of risk assessment (A6) and risk management (B8). Compared to comparison group,

the study group overall had lower self-efficacy scores on majority of individual RAMSES items, 2/3 domains and overall score. Conclusions: Our study shows that mental health professionals of different backgrounds with varying duration of professional experience reported a reasonable degree of competence regarding risk assessment (primarily for the risk towards self and others). Hence, we recommend that mental health professionals in India should also embrace the western concept of 'risk assessment' in a more robust and efficient manner by incorporating structuring as a concept and ensuring more robust and appropriate documentation. Suggestions for the same are provided.

INTERNET ADDICTION: "DO TWO DIAGNOSTIC CRITERIA MEASURE THE SAME THING?"

Vijay Parkash, Debasish Basu, Sandeep Grover

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Aim & Objectives: To assess the agreement or concordance between two diagnostic criteria for Internet Addiction (IA) and to study the relationship between IA as per these criteria and socio-demographic and internet use profile. Methodology: A cross-sectional design was followed. Six hundred participants, aged 18 to 40 years, having a personal Internet connection and using Internet for at least one year were evaluated by using a semi-structured interview, on the Young's Diagnostic Questionnaire, and Internet Addiction diagnostic criteria developed by Tao et al (2009). Results: Prevalence of Internet Addiction varied from 1.2% to 21% depending on the assessment instrument. There is good level of concordance between Young's IA criteria and Tao et al '2+1' criteria, but the level of concordance reduced with the use of course and dysfunction criteria of Tao et al. Among the different Internet variables, age at first use, age at which the person starts regular use and total duration of non-essential use were related to development of Internet Addiction. Conclusion: Findings of the present study suggest that there is good level of concordance between Young's IA criteria and Tao et al '2+1' criteria but the level of concordance reduces with the use of course and dysfunction criteria. This study also suggests that chances of IA increases with regular use of Internet and for longer duration for non-essential users.

SYMPOSIA

S1- THEME SYMPOSIUM

S2- PERSPECTIVES ON SOCIAL FACTORS IN PSYCHIATRY - AS IT IS!

Psychiatry has evolved as a specialty. It incorporates social aspects in etiology, diagnosis & management of all conditions like no other specialty does. However with time, the biological model has overshadowed the current understanding in Psychiatry. There is need to discuss & reflect upon the perspectives of various stake holders like undergraduates, postgraduates and patients as they would be very informative so shall be the overall view point of medical professionals on social factors in general wellbeing including mental health. This Symposia will focus on bringing these perspectives, discussing the possible reasons & possible way ahead.

Sub themes and Speakers:

1. The Undergraduates Perspective: Dr. Vinay HR, Senior Resident in psychiatry, AIMS, Adichunchanagiri Institute of Medical Sciences, Mandya District.

Since only few undergraduate students opt for psychiatry, the acquisition of appropriate attitudes towards psychiatric discipline/practice by rest of them is of some importance. In particular, the perspective on social factors in psychiatry will vary from one medical school to another according to the extent of emphasis made about them to students during existing psychiatry program of shorter duration. The speaker presents the current scenario in this regard and wishes to discuss the adequacy/relevancy so as to contribute inputs for further consideration by concerned professional bodies.

2. The Postgraduates Perspective: Dr M Kishor MD, Assistant Prof of Psychiatry.

Given that one of the objectives of IASS is as under, can some thing be thought of! 'To make the knowledge and practice of social psychiatry available to professionals in social psychiatry and other sciences and to the public by such methods as scientific meetings and publications'. The perspectives on social factors in psychiatry by postgraduates have direct bearing on attitude and approach to mental illness by future mental health professionals. Given the trend of emphasizing biological model in teaching in recent times, the objective of social psychiatry is subdued. The speaker attempts to bring forth the perspectives of current generation of PGs in this aspect and desires to steer the discussion towards probable reasons and possible way ahead.

3. Patient's Perspective: Dr. Kiran Kumar K, Asst Prof of Psychiatry, VIMS & RC, Bangalore.

There are numerous psychosocial, religious and spiritual models through which a patient views the mental illnesses. The knowledge of this is crucial in determining the health seeking behaviour, psychoeducation approach and treatment strategies. The speaker initially enlists the various viewpoints of patients/relatives in relation to social factors in psychiatry based on his psychiatric practice and interaction with variety of patients. Later he addresses and discusses the clinically relevant issues.

4. Non Psychiatry Professionals Perspective: Dr. Kusuma KS, Asst Prof of Biochemistry, MSRM, Bangalore

Mental health services serve their purpose to maximum extent with integration/cooperation from other medical specialties be it in clinical, social, economical or religious aspects. It is worthwhile to consider the perspectives of non-psychiatric professionals regarding social aspects of etiology, diagnosis and management of mental illnesses so as to improvise on the interface.

S3 – SEXUAL HEALTH ISSUES

Sexual health concerns related to body integrity and to sexual safety- Karobi Das

Sexual health concerns related to eroticism, gender and sexual orientation- Sunita Sharma

Sexual health concerns related to emotional attachment and reproduction- Harprit Kaur

Sexual health problems- Jaison Joseph

Sexual health concerns are life situations that can be addressed through education about sexuality and society-wide actions in order to promote the sexual health of individuals. The health sector has a role to play in assessment, and in providing counseling and care. The Pan American Health Organization and WHO in collaboration with the World Association for Sexology (WAS) compiled an overview of sexual concerns and problems that should be addressed in order to advance sexual health. Sexual health is a broad area that encompasses many inter-related challenges and problems. Key among the issues and concerns are human rights related to sexual health, sexual pleasure, eroticism, sexual satisfaction, diseases (HIV/AIDS, STIS, RTIS), violence, female genital mutilation, sexual dysfunction, mental health related to sexual health.

S4 – IASP RESEARCH GOVERNANCE, CONDUCTION AND DISSEMINATION

Social Psychiatry and Research: The scope for Innovations, Partnerships, and Beyond.....: Debasish Basu

Development of research priorities for IASP: Pratap Sharan

IASP Multi-centric Research Study on Stigma related to Psychosis: Nitin Gupta & Pratap Sharan

Following the 2012 National Conference of The Indian Association of Social Psychiatry (IASP) in Chandigarh, the Association undertook a new research initiative. The mission statement was to promote research of importance to the evolution of social psychiatry in India through development of research collaboration by identifying objectives and appointment of an IASP Research Taskforce. In this symposium, we shall initially outline and discuss the scope of social psychiatry in relation to research initiatives and opportunities at hand. This shall be followed by a presentation on the remit of the Taskforce, research vision of the IASP for its membership along with its current status. The final presentation will be on the multi-centric research project being conducted, along with a discussion of the preliminary results.

S5 – TROUBLED WATER, SHAKING BRIDGE, AND TREACHEROUS ROPEWAYS: EMERGING SOCIAL DIMENSIONS OF ADDICTIONS IN INDIA TODAY

Debasish Basu, Subodh B.N., Siddharth Sarkar¹

Drug De-addiction & Treatment Centre, Department of Psychiatry, PGIMER, Chandigarh, and ¹Department of Psychiatry, JIPMER, Pondicherry

This symposium aims to capture a snapshot of the changing addiction scenario in India today through the lens of social psychiatry. It portrays a symbolic picture of 'troubled water' (rapidly changing demographics and characteristics of substance use in India) over which the traditional 'bridge' of family and social support is increasingly becoming shaky, giving rise to alternative 'ropeways' of social communication and networking through the virtual world, which, however, can be treacherous, culminating in addiction to social networking sites.

The first speaker (SBN) in his talk on the "Troubled Water" will highlight the important demographic trends of change such as progressively decreasing in age of onset of substance use and substance use in women, children and adolescents, correlating with emerging trends of use of alcopops, inhalants, prescription drugs, amphetamine type stimulants and other club drugs.

The second speaker (SS) in his talk on "Shaking Bridge" will focus on the caregivers and family members of

substance users. Family and society have been the traditional bridges to tide over the troubled water of substance use, both affecting, and being affected by, the prevalence and pattern of substance use. With changing family and social structure and functions, this bridge has been increasingly weakened, with deleterious effects on the substance users as well as on the society at large.

The third speaker (DB) in his talk on "Treacherous Ropeways" will argue that, in the context of a growing social alienation, many are utilizing the advantages provided by online social networking sites to meet their basic social-interpersonal needs, often as an alternative 'ropeway' in the absence of a stable 'bridge'. However, this can turn treacherous in certain cases, as evidenced by the newly emerging issue of addiction to Facebook and other virtual-world based technology.

S6 – SPECIFIC LEARNING DISORDER: CHALLENGES IN IDENTIFICATION & ROLE OF PARENTS AND TEACHERS IN MANAGEMENT

In India, Specific learning disorder (SLD) remains a challenge for mental health professionals and educators. There is dearth of epidemiological research in Indian context. Despite growing awareness, identification of SLD is delayed. The diagnosis poses innumerable challenges for the child and the family members. The knowledge regarding remedial intervention is limited. The symposium aims to highlight various challenges in the management of the condition from a public health perspective.

1. Issues in identification and epidemiological studies: Rachna Bhargava

Though, over the last decade, awareness about SLD has grown in India. However, in contrast to west, there is sparse data from India, in all concern areas of SLD (i.e. prevalence, diagnosis, awareness, etc). In addition, there is less awareness among the teachers and parents regarding SLD. Hence, children with SLD often go unrecognized by parents, educators, and even school counselors. The prevalence of SLD is estimated to be between 5-15%. The issues of orthographic differences due to multilingualism add to the complexity in diagnosis.

2. Awareness and impact among children and families: Anamika Sahu

It has been seen that even after diagnosis, families are at a loss to deal with the complex issues related to SLD. The studies have documented emotional problems faced by these children however literature is relatively sparse regarding various concerns faced by the families. The presentation would aim at highlighting various problems that family members experience based on the findings of focus group discussions.

3. Role of Parents and Teachers in Management: Manju Mehta

In the western scenario, several evidence-based approaches are being practiced to deal with learning problems. However within them remediation approaches, especially Instructional strategies, have been proven as cornerstone intervention for SLD. In Indian context, though, sometimes teachers and parents are supportive for child's learning. However, they don't help much since they themselves have no awareness about the ways in which child could be helped. This presentation would cover available effective and empirically proved intervention for SLD and its relevance and utility in Indian context.

S7 – CONCEPT OF MENTAL ILLNESS IN THE COMMUNITY AND ITS IMPACT ON MANAGEMENT

Introduction and over-view of the symposia: BS Chavan
Neighbour and Police personal's understanding about mental illness and its impact: Virtu Chongtham
Role of the Judiciary: Shikha Tyagi

Community's concept about depression in rural area: Subhash Das

Summary and Conclusion: BS Chavan

In a country like India, family members, relatives and even the neighbours are involved in decision making and often get together to offer guidance and suggestions even if these are not solicited. Often the decisions regarding major events including marriage, birth of a child and the death of someone are made by elderly and community leaders. This involvement of a community even extends to seeking medical advice for an illness. When a person falls sick, the community get together to offer its advice relating to possible cause of illness, what is to be done and from where the medical advice to be sought. Community also plays a crucial role in compliance to treatment. There is enough evidence to show the role of community in pathways to care. The Department of Psychiatry at GMCH, Chandigarh is working in the community for last more than 16 years. Our experience shows that in majority of the cases, the role of community has been constructive. However, there are many instances where the collective role of a particular community has gone against the family leading to prolonged suffering and some of these decisions imposed great hurdle in extending support to the family. Through this symposium, the presenters want to highlight the community's understanding about mental illness and how this influences the overall patient care. In this symposia some real life situation will be taken up to elaborate how the different people in the community like the family members, neighbours, police, judiciary, villagers and other such people approach someone with mental illness, what is their

understanding about mental illness and how this has an impact on the management.

S8 – OPPORTUNITIES AND CHALLENGES FOR YOUTH TOBACCO CESSATION

Prevalence and correlates of tobacco use among youth: Sonali Jhanjee

Evidence based pharmacotherapy and Innovative interventions (mobile phone, computer and internet based) for youth tobacco use: Prabhoo Dayal

Psychological interventions: What works?? Gauri Shankar

Role of biomarkers for youth tobacco cessation: recent advances: Raka Jain

Summary and way forward: Sonali Jhanjee

Tobacco use among youth is an issue that affects countries worldwide. Among youth it is a major public health problem. In India, nearly 14.6% of students currently use any form of tobacco; 4.4% currently smoke cigarettes; 12.5% currently use some other form of tobacco and almost half of these reports initiating tobacco use before 10 yr of age. Early use of tobacco increases individual's chances of more serious drug abuse and addiction. Therefore, early intervention is important not only for preventing the numerous, significant health problems that result from cigarette smoking among adolescence but also reduce the risk that cigarette smoking conveys for the development of future substance use, and other psychological disorders (e.g., depression) as adolescents move into young adulthood. Moreover, tobacco use among adolescents is also strongly associated with a variety of co-morbidities and problem behaviours; including externalizing disorders. Therefore establishing healthy behaviours during childhood is easier and more effective than trying to change unhealthy behaviours during adulthood. Furthermore, self-reported tobacco use among young people can underestimate the actual prevalence of tobacco use. Biochemical validation of self-reports is particularly recommended for intervention studies where cessation outcomes are to be measured. Various intervention studies reported that motivational enhancement and cognitive behavioural approaches increase the chances of quitting in youth tobacco users. However there is no evidence that nicotine-replacement treatment aids youth smoking cessation, and only few studies of Bupropion have reported, mildly encouraging results. Contingency management based on biomarkers of tobacco use abstinence has shown some promise for youth smoking cessation in small-scale trials. Hence understanding patterns and prevalence of youth smoking and quitting behaviour is critical.

WORKSHOPS

W1-BASICS OF MEDICAL RESEARCH

FACILITATORS: Pratap Sharan, Ravindra Rao, Ashwani K Mishra

The workshop will help learners in defining research, understanding the need for research, in becoming familiar with types and components of research, and in formulating aims and objectives of research studies. Learners will also gain the knowhow of the steps involved in research design and about types of study designs. Further, learners will gain a basic understanding of different types of variables and their psychometric properties. Finally, learners will learn how to analyze data by using appropriate statistical methods for summarizing data, through an accurate understanding of central tendencies, dispersion, associations, and correlations.

W2- PSYCHOTHERAPY FOR THE INDIAN SETTING: THE PROCESS OF ASSESSMENT AND CONDUCT OF INDIVIDUAL DYNAMIC PSYCHOTHERAPY

FACILITATORS: VK Varma (USA), Nitin Gupta

BACKGROUND & NEED: "It is inevitable that cross-cultural differences ... must be taken into account in ascertaining suitability of and in adapting psychotherapy for a particular culture (Varma, 1985)". Traditional cultures, like those of South Asia, revolve around primary support groups, like the family. As opposed to West, in the traditional societies of South Asia, all relationships are multi-dimensional, sub serving a myriad of functions. The same applies to the healer-patient relationship, the healer being a friend, philosopher and guide, a wise person, a village elder, and a benevolent senior, as also a family member. His objective is to help in all possible ways, to total growth, development and actualization, and not just in the narrow confines of the illness.

Adapting psychotherapy for the traditional societies, such as that of India requires taking into account differences in the socio-cultural and religious variables, such as, dependence versus autonomy, psychological sophistication, the introspective and verbal ability, the need for confidentiality, the nature of dyadic relationship, the personal responsibility in decision-making, the nature of guilt and shame, and the social

distance between the patient and the healer. Psychotherapy may accordingly be made more active, open and direct, briefer, crisis-oriented, supportive and flexible, with greater activity on the part of the healer, and with the involvement of the larger family and social matrix. It also needs to be tuned to and blend itself to the religious belief system. Furthermore, on account of trained manpower constraints, expertise of professionals of various backgrounds may be utilized.

However, there is no model available for the practice of psychotherapy in India. The facilitators have identified various factors and processes that seem to be the key and extremely helpful in the conduct of psychotherapy in the Indian setting, and would like to share the same with the participants.

IDENTIFIED OBJECTIVES:

1. To train mental health professionals in the practice of individual psychodynamically oriented psychotherapy
2. To discuss the rationale for adapting Western-model psychotherapy for traditional societies, taking into account socio-cultural variables
3. To discuss the methodology of selection of cases and assessment for psychotherapy
4. To discuss the process of psychotherapy; from symptoms to conflicts to defense mechanisms to interpretation to working through
5. To illustrate the conduct of psychotherapy, giving case vignettes and using role-play involving the participants

W3-EVALUATION AND MANAGEMENT OF SEXUAL DYSFUNCTIONS AND DISORDERS

FACILITATORS: Narayana Reddy, Raj Brahmhatt, TSS Rao, Ajit Bhide, Ashok Reddy

W4- DOWRY PROHIBITION ACT AND MENTAL ILLNESS: DO WE NEED AMENDMENTS

FACILITATORS: Indira Sharma, Shailendra Mishra

FREE PAPERS (ORAL)

COMPARISON OF ATTITUDE OF GENERAL NURSES, RELATIVES OF PATIENTS WITH MENTAL ILLNESS AND THE GENERAL POPULATION TOWARDS PEOPLE WITH MENTAL ILLNESS

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TNMC & BYL NAIR CH. HOSPITAL, MUMBAI

Introduction (Aims and Objectives): Mental illness is an important, although often neglected, public health issue worldwide. Research in India has mostly focused on the attitudes towards mental illness in very small and restricted study samples. Our aim was to compare the attitude of general nurses, relatives of patients with mental illness and the general population towards the mentally ill. Methodology: After approval from the institutional Ethics Committee, 300 individuals (100 general nurses, 100 relatives of patients and 100 adults from general population) were consecutively selected for this cross sectional study. The inclusion criteria were adults (>18 years), ready to give informed consent, minimum 8th standard education and can understand English, Hindi or Marathi. Participants with acute or chronic physical or mental illnesses, less than 8th standard education and psychiatric nurses were excluded. A semi structured questionnaire and Community Attitude towards Mentally ill (CAMI) scale were used to record the responses. SPSS version 20 was used for statistical analysis. Results: The relatives were more authoritarian compared to general nurses ($p=0.002$) and general population ($p=0.000$), while the general nurses were more authoritarian than the general population ($p=0.011$). The relatives favoured community involvement more than the general population and general nurses ($p=0.000$). The general population were against community involvement, compared to the general nurses ($p=0.000$) and the relatives ($p=0.004$). Both the general population ($p=0.002$) and the relatives ($p=0.010$) were less benevolent than the general nurses. Discussion: Differing attitudes among the three groups towards the mentally ill proves multiple factor involvement in shaping one's views about mental illness. Awareness is important but cumulative stress following multiple relapse, prolonged treatment, financial burnout and

poor support structure are other factors. Conclusions: Effective awareness strategies, support groups and affordable access to mental health care facilities are needed. Exposure to mental health related activities during training is necessary for nurses.

UNCONSUMMATED MARRIAGE

J.B.Kiran

SANTRUPTI- Sexual Health Clinic, Mysore

Inability or absence of successful peno-vaginal intercourse in a couple is called Unconsummated Marriage. Unconsummation is more common in urbanized & well-educated clients in every respect except for their ignorance about the sexual act. About 10-15% of couples have problem of unconsummation though they can have orgasm by masturbation or by oral stimulation of genitals. This issue is highly challenging subject in the Changing Social Milieu. The commonest cause for Unconsummated Marriage is Sexual ignorance, aversion, previous sex experience, rigid hymen, vaginismus, faulty position, misconception etc. To diagnose this, we must take detailed history of Sexual activity. It may need many sessions because so many cases approach us with the complaints of Erectile dysfunction/ Premature ejaculation/ Dyspareunia/ Impotence etc. But with good history taking skill we can diagnose. Unless the root cause had not been identified, it is very difficult to treat this problem. The longer duration of unconsummation make this problem worse. A meticulous history taking and with the partner's co-operation & with necessary counseling & sex therapy, the problem can be tackled easily.

SEXUAL DYSFUNCTION IN SUBSTANCE ABUSE AND DEPENDENCE: A CROSS SECTIONAL SURVEY

Shailendra Kumar Mishra, Mona Srivastava

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Introduction: Sex is an important physiological and psychological need, which also affects the mental well being of humans. In substance dependence, sexual dysfunction is of high clinical relevance. It often leads to treatment nonadherence and sexual or marital disharmony. Sexual dysfunction is a multiple random complaint in patients with substance abuse and

dependence. The aim of this survey was to assess the sexual dysfunction in substance abuse and dependence patients. Methodology: Male subjects in the age group of 18 – 60 years, who presented in the OPD were included in the study. Sexual dysfunction questionnaire and self structured proforma containing socio-demographic details and pattern of substance abuse was used to assess sexual dysfunction in patients with substance abuse and dependence. Results: Association of sexual dysfunction with substance abuse (including alcohol, tobacco, opioid, and cannabis) was found in this survey. The severity of sexual dysfunction was more in patients with longer history of substance abuse. Detailed result will be discussed at the time of presentation. Discussion: Sexual side-effects are not spontaneously reported by patients due to multiple factors, which includes cultural, societal and personal; hence, direct inquiry is required. The most valuable asset is the patient's own history and description. Opioid abuse is linked to the development of hypogonadism, decreased libido, ED, and infertility. Opioid suppresses LH release and reduces the levels of testosterone and estradiol, which effects testicular function. Sexual dysfunction may be related to the neurogenic damage caused by alcohol. Conclusion: Substance abuse is associated with sexual dysfunction. The clinicians should be aware about this association as sexual dysfunction in patients with substance abuse may lead to poor treatment compliance and relapse. Also, there is a need to study the multiple dimensions of association of substance abuse and sexual dysfunction.

EFFECTIVENESS OF SOCIAL SKILLS TRAINING ON THE WELL BEING OF PATIENTS WITH CHRONIC SCHIZOPHRENIA

JW James, D Ram, D Batachrjee

Central institute of Psychiatry, Ranchi

Aims and Objectives: The present study explores the effect of social skills training on the wellbeing of patients with chronic schizophrenia. Methodology: The current study was a hospital based experimental study. A total of 40 patients with chronic schizophrenia were recruited using purposive sampling technique, 20 patients received social skills training with ongoing pharmacotherapy and 20 patients received only ongoing pharmacotherapy. Baseline and post intervention assessment done using Well Being Manifestation Measure Scale (WBMMS). Results: The results show that the wellbeing of patients receiving social skill training improved significantly. Discussion:

The influence of social skills training on the different domains of wellbeing on patients will be discussed. Conclusion: We can conclude that social skills' training improves the wellbeing of patients with chronic schizophrenia.

A STUDY ON ATTITUDE TOWARD MASTURBATION AMONG NURSING STUDENTS

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Introduction: Masturbation is variously known as 'playing with oneself or self stimulation or self-pleasure and has been defined as the process of self-stimulation designed to produce erotic arousal and sexual satisfaction'. This research study was undertaken to see the prevalence and attitudes of masturbation among GNM/B.Sc (N) students those who come for training purpose at Spandana Health Care, Bangalore. Aim: To study about attitudes toward masturbation among nursing students. Objectives: [1] To study the Socio-demographic profile of nursing students. [2] To study the experience of masturbation during childhood and adolescents among nursing students. [3] To study the attitudes toward masturbation among nursing students. Methodology: The research study was conducted at Spandana Health care, Bangalore, India. The participants were explained in detail the aims and objectives of the research study by the researcher by dividing the groups into female and male. Female group was instructed by female researcher and male group was instructed by male researcher. After detailed explanation of the research study, a written informed consent was taken. Participants were ensured of the confidentiality of their responses and their identity. Also can refuse at any point of time. The study participants were assessed to know the attitudes toward masturbation among the nursing students. Researcher assessed Socio-Demographic Data, Semi-Structured Questionnaire and Attitudes toward masturbation (Donald L, Mosher) scale (consisting of 30 items). The total sample consisted 150(Males N-75, Female N-75) GNM and B.Sc nursing students those who full filled the inclusion and exclusion criteria's of the study. Participants were separated in a large testing room, to provide maximum privacy for responding. During this session a male and female researcher were available to provide instructions and to answer their

queries. Results, Discussion & Conclusion: The results and conclusion of the study will be discussed during the presentation in the Conference.

COPING IN ALCOHOL DEPENDANTS

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Background: Coping refers to the specific efforts, both behavioral and psychological, that people employ to master, tolerate, reduce, or minimize stressful events. Two general coping strategies have been distinguished: problem-solving strategies and emotion-focused coping strategies. While the former depicts efforts to do something active to alleviate stressful circumstances the latter involves efforts to regulate the emotional consequences of stressful or potentially stressful events. Research indicates that people use both types of strategies to combat most stressful events Alcohol dependence is always associated with poor coping skills. Aim: To assess the coping strategies of patients with alcohol use disorders (dependence syndrome). Methodology: Using purposive sampling method 20 males with alcohol use disorders (dependence syndrome) attending the drug de-addiction clinic in the Department of Psychiatry, KGMU, Lucknow and 20 healthy individuals between the age of 18-60 years were included as a sample in the study. Patients with any other Axis-I disorder or having any other severe medical condition were excluded. Tools administered were semi-structured performa, general health questionnaire-hindi version (Gautam et al) and The Coping Strategies Scale (Srivastava 2001). Results and Discussion: Many of the theories and studies report that due to poor coping skills or maladaptive coping mechanism dependence occurs or an individual seeks more substance. The outcome of the study indicates that the patients with alcohol dependence have high behavioral avoidance i.e. emotion focused coping or dysfunctional coping strategies ($p < 0.001$) and cognitive avoidance ($p < 0.001$). This indicates restraint coping, inhibition of action, turning towards religion, escaping, behavioural disengagement, acceptance, withdrawal and feeling helpless. These are unhelpful strategies that lead to reduced adjustment and adaptation to situations and difficulties. As compared to control the case group findings revealed that alcohol dependent patients use cognitive avoidance coping strategies to deal with their stressors.

TRADITIONAL HEALERS AS COMMUNITY MENTAL HEALTH RESOURCES IN THE CHANGING SOCIAL MILIEU – A CROSS SECTIONAL DESCRIPTIVE STUDY FROM RURAL SOUTH INDIA

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Introduction: Mental illnesses are conspicuous by their universal presence in all geopolitical regions and cultures. In India where majority of people live in rural areas and explanations for mental illnesses can be influenced by biomedicine, systems of traditional medicine and supernatural beliefs, traditional healers and religious people play an important role in providing culturally sensitive care for patients with mental illness. Ironically the research in psychiatry considering these aspects is sparse but warranted. Hence the current study was undertaken. Aim and Objectives: [1] To explore the principles and utility of traditional healing in mental illnesses through interviewing traditional healers and adjoining communities. [2] To elicit the reasons underpinning the wide spread appeal by people in visiting traditional healers for psychiatric illnesses. [3] To know the attitude of traditional healers for a collaboration with allopathic psychiatric services in the changing social milieu. Methodology: A purposive sample of 10 traditional healers in Mandya and Bangalore rural districts of Karnataka state and 8-10 people approaching each of these healers were separately interviewed. A semi structured questionnaire both for traditional healers and people visiting traditional healers was used. The data was tabulated and analyzed descriptively. Result: There were diverse approaches and tenets behind the traditional healing practices. The belief that there is no cure from hospital, local access, confidentiality and cultural sensitivity are main reasons for people to approach traditional healers. There were mixed opinion among traditional healers on collaboration with allopathic psychiatric services. Discussion: Traditional healers serve as important community mental health resources with reasonable outcome in treating mental illnesses. Conclusion: Further research and explorations on this interface is suggested to move towards comprehensive psychiatric care which includes biological, psychological, social, religious and spiritual aspects.

PORTRAYAL OF MENTAL HEALTH IN MALAYALAM CINEMA

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Background: Malayalam cinema has been produced since 1920's and releases more than fifty films in a year. Malayalam cinema is known for portraying social, cultural, political issues and this also includes issues in mental health. Objectives: To review the portrayal of mental health in Malayalam cinema. Methods: Films were identified after discussion with various experts in person, telephone and email correspondence. Web databases were also checked to identify the films. A literature search was also done for any reviews on Malayalam cinema and mental health. Results: More than 40 films from the 1960's to 2014, portraying balanced and unbalanced version of issues in mental health have been identified. One review article on mental health and Malayalam Cinema has also been identified. The themes of the movies are based on psychotic disorders to dissociative disorders and from stigma to homosexuality. Conclusion: It can be concluded that Malayalam Cinema has a rich source of portrayal of mental health. Such a resource could be used to for movie clubs as a part of teaching curriculum during Post Graduate training. They can be an excellent medium to understand cultural issues and stereotypical views on mental health issues by the community.

DOES ALCOHOLISM INFLUENCE SEXUAL FUNCTIONING?

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Background: Alcohol and alcohol use disorder are known to cause sexual dysfunctions. In turn it may aggravate frequency and amount of alcohol consumed. We assessed the prevalence and the correlates of sexual dysfunction in men with Alcohol Dependence Syndrome (ADS) in a tertiary care hospital. Methods: A total fifty Consecutive male subjects were selected on the 3rd day of inpatient care from general hospital psychiatry with a diagnosis of Alcohol Dependence Syndrome with Simple withdrawal Symptoms as per ICD-10 criteria. They were assessed for sexual dysfunction using International Index of Erectile Function (IIEF), a 15-item questionnaire. Data analysed using descriptive and chi square test. Results: The mean age of the study sample was 39.26 (± 8) years; The mean age of onset of drinking was 19.1 (± 6.2) years, and

that of dependence was 24 (± 6.7) years, duration of alcohol dependence was 15 (± 7.7) years, with an average daily consumption of 462 (± 330) ml. Out of 50 patients, 38 (76%) reported to have one or more sexual dysfunction. Sexual desire (78.94%), low intercourse satisfaction (76.31%), followed by low overall satisfaction (57.89%), erectile dysfunction (55.26%) and orgasmic function (31.57%) were reported in that order. Co morbid nicotine dependence was found in 31 (62%) of those having sexual dysfunction, and was statistically significant in those with erectile dysfunction and overall satisfaction domain with a p value less than 0.05. however other domains did not correlate. Conclusion: Sexual dysfunction is more prevalent in male patients with ADS. The prevalence of co-morbid nicotine dependence was high among patients with alcohol dependence syndrome. The findings of the current study indicate that it is necessary to routinely evaluate sexual dysfunction in patients with ADS and research should focus on the pathophysiology of sexual dysfunction among ADS.

A DESCRIPTIVE STUDY TO ASSESS INTERNET ADDICTION AMONG THE NURSING STUDENTS

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Introduction: Internet addiction is proposed but unproven disorder that involves excessive Internet use to the extent that it interferes with daily life. Excessive use may be determined by losing track of time, neglecting basic drives such as hunger and sleep, withdrawal symptoms, and negative behaviours including anger, fatigue and social isolation. Now a days people are becoming addicted to the Internet in much that same way that others became addicted to drugs or alcohol which resulted in academic, social and occupational impairment reduced work performance. Material and Methods: Descriptive survey approach was adopted to collect data by questionnaire and standard Young's IAT tool. By using stratified random sampling technique a total of 120 subjects were selected. The questionnaire contained; demographic information and assessment of their internet usage by using questionnaire and assessment of internet addiction by young's IAT. Results: Data was analysed using SPSS version 16.0 for windows. Majority were single females. Age wise distribution of the students shows that 53 (44.1%) of the participants were in age group of 17 -20 years, 58 (48.2%) of participants were in

age group 21-24 and a few 09(7.7%) were in age group 25 -32. On assessment of internet usage 91(75.8%) of the total subjects use internet daily, in relation to use of internet for academic and learning purposes 45(37.5%), learning of internet resources usage by their own about 79(65.8%), in relation to influence of increased dependency on internet usage on academic efficiency found about in 69(57.5%) students. The subjects are categorized as having mild 31(25.8%), moderate 71 (59.2%) and severe 18 (15%) internet addiction. The findings revealed that maximum number of subjects suffers from moderate internet addiction. Conclusion: The findings revealed that maximum number of subjects suffered from moderate internet addiction.

COMPARATIVE STUDY OF SEXUAL DYSFUNCTION AND SERUM PROLACTIN LEVEL ASSOCIATED WITH OLANZAPINE, RISPERIDONE AND CLOZAPINE IN PATIENTS WITH REMITTED SCHIZOPHRENIA

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Introduction: Sexual dysfunctions have been a major side-effect of the second generation anti-psychotic drugs which often affects treatment compliance in patients with schizophrenia. There is no/few systematic review or research addressing sexual dysfunction and their effect on serum prolactin level among different atypical antipsychotics in India. Aim: To determine and compare the frequency of sexual dysfunction associated with olanzapine, risperidone and clozapine and their effect on serum prolactin level in remitted patients with schizophrenia. Methodology: Cross-sectional hospital-based study with purposive sampling. Estimation of serum prolactin was done using ELISA technique. The total sample size was 103, consisting of 31, 23 and 19 patients in olanzapine, risperidone and clozapine groups respectively and 30 controls. A Brief Psychiatric Rating Scale (BPRS), Udvalg for Kliniske Undersogelser (UKU) side effect rating scale and Sexual Functioning Questionnaire (SFQ) were administered. Analysis of Variance (ANOVA) was used to compare clinical variables. Chi square test was used to identify the frequency of sexual dysfunction. Kruskal wallis test was used to compare Udvalg for Kliniske Undersogelser side effect (UKU), sexual dysfunction and blood parameters across the study groups. Results and Conclusion: 86% reported sexual dysfunction in one or more domains of sexual functioning in risperidone group as compared to 48.3% in olanzapine and 31% in

clozapine groups respectively. Prolactin level elevation was statistically significant in risperidone group followed by clozapine and olanzapine groups respectively. Discussion: Our study supports the literature that sexual dysfunction and prolactin levels are more with risperidone.

A STUDY OF COGNITIVE FUNCTIONS AND DISABILITY IN PATIENTS OF SCHIZOPHRENIA

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Introduction: Cognitive impairment is a core feature of schizophrenia, with converging evidences showing that it is strongly related to functioning in areas such as work, social relationships, independent living, quality of life and disability. Aim and Objectives: The purpose of the present study was to assess the cognitive functions in stable patients of schizophrenia using Brief Assessment of Cognition in Schizophrenia (BACS) and compare them with normal controls. It was also to study the relationship between cognition and disability in these patients. Methodology: Stable patients of schizophrenia attending outpatient clinic at King George's Medical University, Lucknow, Uttar Pradesh were included in the study. Healthy volunteers with no psychiatric illness matched for age, sex and education were also included. Cognitive functions were assessed using Brief Assessment of Cognition in Schizophrenia (BACS) and disability was assessed using WHO Disability Assessment Schedule 2.0. Results and Discussion: Cognitive functions of patients with Schizophrenia were significantly poor in all domains (verbal memory, working memory, motor speed, verbal fluency, attention, and executive function) in comparison to the matched healthy group ($p < 0.0001$). The patients of schizophrenia had maximum disability in the area of life activities followed by participation and cognition. There existed a significant negative correlation between cognition and Mobility ($r = -0.45, p < 0.05$), Getting along with people ($r = -0.44, p < 0.05$), Life activities ($r = -0.42, p < 0.05$), Participation ($r = -0.39, p < 0.05$) and total on WHO DAS 2.0 ($r = -0.48, p < 0.05$). Our findings are similar to the findings of numerous studies that demonstrated the presence of cognitive deficits and disability in patients with schizophrenia.

PERCEIVED SOCIAL SUPPORT AND BURDEN OF CARE OF CAREGIVERS OF PATIENT WITH SCHIZOPHRENIA: A

GENDER BASED COMPARATIVE STUDY

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Introduction: Schizophrenia is associated with a high family, social and economic burden. Schizophrenia is also associated with a high level of disability, which may create impediments on the social and economic areas of the patients as well as on their respective family members. Families with schizophrenia may encounter problems such as impairment of health and well being of other family members, restriction of social activities of the family members and shrinking of support from the social network. This kind of research is of demand in order to know whether gender of the key provider of care has some implications controlling the level of perceived social support and burden of care. **Aim & Objective:** The present study had examined the difference in perceived social support and burden of care between the male and female caregivers of patients with schizophrenia. **Participants and Methods:** The sample consisted of 60 (30 male and 30 female) caregivers of the patients with the diagnosis of schizophrenia as per ICD-10-DCR (WHO, 1992). Age of the caregivers was more than 18 years. Only one caregiver was taken from each family unit for the study. Caregivers who had been actively involved in patient care and management for at least 2 years were considered for this study. Age, education & family income were matched in the both groups. Socio-demographic data sheet, Perceived Social Support Questionnaire, Family Burden Interview Schedule and General Health Questionnaire-12 were administered on the caregivers. **Result & Conclusion:** The finding of the parent study revealed that female caregivers perceived less social support and more burden of care as compared to male caregivers of patient with schizophrenia.

DEPRESSION & ANXIETY IN PATIENTS WITH ESSENTIAL HYPERTENSION

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Introduction: There is an intricate relationship between physical health & psychological status. Anxiety & depression are known to have diverse effects on body functions. The cardiovascular system is regulated by the autonomic nervous system, emotional states may have

a profound influence on the cardiovascular system, including blood pressure. As hypertension is a common disease in the community, there is a need to investigate the prevalence of anxiety & depression in these patients. Anxiety & depression may predispose individuals to develop hypertension but may also be a consequence of the disease. **Aim & Objectives:** To study prevalence of depression & anxiety in patients newly diagnosed with hypertension. **Material & Methods:** The study included 50 patients, over 18 years, with newly diagnosed systemic hypertension (at the first visit in ambulatory, blood pressure had values above 140/90 mmHg on at least two measurements), in parallel with a control group consisting of 50 subjects, comparable from the age & sex point of view. Patients previously diagnosed & treated for hypertension, or chronic patients diagnosed with previous psychiatric disorders or other chronic diseases were excluded from the study. Psychometric tests used Hamilton Depression Rating Scale & Hamilton Anxiety Rating Scale. In our study, we used the Hamilton Rating Scale for depression monitoring consisting of 17 items quoted at 0- 4, with which we could evaluate different aspects such as the states of depression & feelings of guilt, suicidal tendencies, insomnia, agitation, inhibition & somatic symptoms. Hamilton anxiety rating scale is similar, can be performed in about 15-20 minutes, includes 14 items scored from 0-4, studying the anxiety, fear, insomnia, cognitive & organic symptoms. **Results & Conclusion:** Results will be analysed with appropriate statistical methods & be presented later.

COPING WITH BREAST CANCER: CORRELATES OF BODY IMAGE DIFFICULTIES FOLLOWING SURGERY

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Introduction (Aims and Objectives): Women surviving breast cancer often have psychological morbidities and body image difficulties at diagnosis, during treatment and even after recovery. The current study is a prospective study of patients undergoing surgical treatment for breast cancer before or after chemotherapy. The study aims at finding the associations of increased body image problems in this group of women. **Methodology:** Women (n=134) undergoing surgery for breast cancer were enrolled for the study who met the inclusion criteria. All women were interviewed in their first post-operative visit to the

hospital. The following instruments were used – Hospital Anxiety Depression Scale, Body Image after Breast Cancer scale and Rosenberg Self Esteem scale alongside socio-demographic, disease related and treatment related variables. Univariate analysis was done by Pearson's correlation coefficient and Student's t Test and multivariate linear regression was done to find the risk factors of body image problems. Result: The following were the clinically significant associations: Increased stigma was associated with depression score ($r=0.37$, $p=0.001$) and poorer self esteem ($r=0.25$, $p=0.001$); Increased vulnerability scores were associated with increased depression ($r=0.48$, $p=0.001$) and increased anxiety ($r=0.46$, $p=0.001$). A multiple regression was run to predict vulnerability due to body image problems from age, type of surgery, depression and anxiety score. These variables statistically significantly predicted vulnerability, $F(4, 127) = 26.5$, $p < .0001$, $R^2 = .44$. Anxiety score and type of surgery added statistically significantly to the prediction, $p < .05$. Discussion: Body image difficulties are associated with co-morbid depression and anxiety in women after breast cancer. The results of the current study highlight the importance of the multidisciplinary inputs needed for women with breast cancer and value of screening for psychopathology early. Conclusion: All women with breast cancer should be screened for depression and anxiety and assessed for body image problems. Women with breast cancer should have access to appropriate interventions to address affective symptoms and body image problems.

SOCIO-DEMOGRAPHIC AND CLINICAL PROFILE OF THE PEOPLE ATTENDING PSYCHOSEXUAL CLINIC AT TERTIARY CENTRE

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Introduction: Psychosexual Disorders (PSD) are commonly experienced as having a devastating effect on familial, vocational, psychological, or social lives of sufferers. Irrespective of high prevalence of PSD; only few patients seeks psychiatric consultation for the same. Aims & Objectives: To study the pattern of PSD at tertiary centre. Methodology: Its retrospective chart review of all the cases (2121) who attended psychosexual clinic from August 2011 to January 2014. Percentage analysis was carried out to get the inference. Results and Discussion: Out of 2121 people

529 (24.94%) were patients of failure of genital response and 356 (16.78%) were that of Premature Ejaculation (PME). Co-morbid failure of genital response and PME accounted for 311 (14.66%) cases. Sexual Misconception (415 cases) and Dhat Syndrome (252) were also found to be highly prevalent. Conclusion: PSD are highly prevalent problem but very few numbers of female patients as compared to their male counterparts, seek treatment for their problems. In addition, presence of psychiatric co-morbidities indicates urgent need for screening psychiatric illnesses and need for public awareness and stigma removal program.

A STUDY OF THE TEMPERAMENT IN CHILDREN AND ADOLESCENTS WITH OPPOSITIONAL DEFIANT DISORDER

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Aims: The objectives of the study are to assess the pattern of temperament in children and adolescents with Oppositional Defiant Disorder and to see their difference from the normal group. Methodology: The socio demographic and clinical details were gathered using a specifically designed datasheet of 20 ODD children and 20 normal controls between age range 6-16 years with average intellectual functioning and Temperament Measurement Schedule was applied to both the group's. Results: Results showed that there is significant difference found between the two groups on domains of sociability, emotionality, attentivity, energy and rhythmicity. Discussion: The findings suggested that the ODD group had decreased sociability, emotionality, attentivity and rhythmicity and increased energy levels as compared to the normal group. Conclusion: Temperamental characteristics play a role in the etiology of ODD.

QUALITY OF LIFE AND EXPRESSED EMOTION AMONG PERSON WITH PSYCHIATRIC REHOSPITALIZATION

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Introduction: Family and care givers play important role in the recovery of psychiatric patients. Family can perform causative as well as protective role for the psychiatric patients. When family provides adequate care and support for the patients and communicates their emotions in balanced way chances of

rehospitalization are reduces and quality of life improves. Aim: aim of the present study was to compare the expressed emotion and quality of life of the bipolar affective disorder and schizophrenia patients. Methodology: 200 rehospitallized bipolar affective disorder and schizophrenia patients were selected purposively. Family Attitude questionnaire was administered on caregivers and WHOQOL-BREF scale was administered on patients to know the level of expressed emotion and quality of life of the participants. Result: schizophrenia patients have high level of expressed emotion in comparison to bipolar affective disorder patients another hand bipolar affective disorder patients showed good quality of life than schizophrenia patients. Discussion: Family and his support is the bone of the good rehabilitation and recovery from the psychiatric illness.

FRONTIERS OF THE MENTAL HEALTH PROFESSIONALS - THE NEED OF THE HOUR

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The challenges of psychiatric professional are enormous. psychiatric professional are still confined from mental hospitals, clinics & nursing homes, therefore they cannot meet the requirements of the population. They should focus more on preventive and promotive aspects of the mental health. The aim & objective of this purpose is to highlight the frontier areas, which are yet to be focused. The target groups are, schools, colleges, and other educational institutions, housewives, industrial population, parents, adolescents, working population, retired people, youths, women and workers For this preventive / promotive mental health approach - the methodology adopted through workshops for various groups, counseling to various groups, training programs for the focused groups, etc. The results & conclusions for the various groups will be discussed during the deliberations.

DEVELOPMENT OF ALCOHOLISM RELAPSE TRIGGER SCALE (ARTS) AND ITS CLINICAL UTILITY

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Background: Relapse in the treatment of alcohol dependence disorder is a challenge to the clinicians. For effectively managing commonly occurring relapse in the treatment of alcohol dependence disorder using a standardized tool for evaluating the factors triggering relapse will be of great use in our socio cultural context. Aims and Objectives: The study aimed to develop a tool to assess triggering factors of relapse in alcoholism in our socio-cultural context. It also aimed to establish its psychometric properties and its clinical utility among repeatedly relapsing alcohol dependent persons. Methodology: Male alcohol dependent persons, (n,113) , whose age ranged between 18-55 years and who had relapsed more than once even after treatment at de-addiction centers in Thiruvananthapuram and Kollam districts of Kerala formed the sample. In order to develop the Alcoholism Relapse Trigger Scale, several experts working in the area of alcohol addiction were consulted and a large pool of items related to physical, emotional, social, inter personal, cognitive, family, financial and occupational areas were generated. Finally 48 items was included in the scale meant for validation and was administered. In addition, reason for drinking questionnaire was also administered to establish criterion validity. Results: The data was subjected to Principal Factor Analysis (PFA) and 6 factors emerged. Based on the factor loadings, the items of the scales were reduced to 30 and the item total correlation was found to be significantly high for all the factors. Chronbach's Alpha for the 30 items tool was found to be 0.89, which is highly significant. The correlation between the total scores of ARTS and the relevant factors of RDO was found to be high. Conclusions: ARTS can be reliably used for clinically and for research in our socio-cultural context.

FREE PAPERS (POSTERS)

RETURN TO WORK FOLLOWING TRAUMATIC BRAIN INJURY: A RETROSPECTIVE STUDY

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Introduction: After sustaining traumatic brain injury (TBI), a significant number of patients continue to have residual impairments in form of physical, neurological, cognitive, social and behavioral impairments that may affect their return to work. Usually 40% of overall TBI population returns to work 1 year after injury. Those with more severe injuries have much less chance of returning to work than those with mild injuries. It is important to assess various socio-demographic, clinical and neuropsychological correlates of return to work. Aim: To study the relationship of return to work with socio-demographic, injury related factors and neuropsychological impairment. Methodology: The files of all patients referred to Neuropsychology Division of Department of Neurosurgery for neuropsychological assessment following TBI were reviewed. Seventy-eight patients in the age range of 18-60 years with a minimum of 6 months of TBI were selected. The exclusion criteria were presence of sensory or motor impairment, IQ less than 70, prior history of TBI, chronic medical illness, psychiatric disorder, neurological disorders, and unavailability of records. All these patients had been assessed using PGI Memory Scale. Results: There were 70 males and 8 females. The mean age at injury was 31.9 (SD=11.4). Twenty three patients (29.5%) had mild TBI, 16 (20.5%) had moderate TBI, 39 (50.0%) had severe TBI. Twenty five (32%) had resumed work, 28 (36%) were not working, 12 (15 %) were working on a lower level and 13 (17%) were working on same job but with lower demands. The factors affecting return to work will be analyzed.

DOES PLAYING GOLF AFFECT THE FAMILY ENVIRONMENT AND TRAIT DIMENSIONS OF PERSONALITY IN FEMALE INDIAN GOLFERS? PRELIMINARY RESULTS FROM A STRUCTURED STUDY.

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Introduction: Golf has been identified as a socially interactive game requiring long hours of play with variable levels of fitness. In many countries this is reinforced by perceptions that golf teaches people important personal values. In the 21st century women's engagement with the game, and participation in it, is increasing worldwide, as is also the case in India. This increase in the number of women golfers has the potential to affect many things like conventional values, family environment and emotional stability of women that are actively playing golf and their continued participation in golf. Aim: To evaluate women golfers and non-golfers on family environment and trait dimensions of personality as compared to matched controls who do not play golf. Methodology: The sample comprised of women golfers (N=16) and non golfers (N=16). The women golfers had been actively playing golf for more than 2 years while women not actively playing golf were taken as controls, whose one of the family members was playing golf. The age range of the subjects was 40 to 65 years. They were administered a Semi Structured Performa, Family Environment Scale and Big Five Inventory. Descriptive statistics and t-test was employed. Results: Results and implications will be discussed.

WILDFIRE IN SUNDOWN: A CASE OF HYPERSEXUALITY AND PARAPHILIA IN AN ELDERLY FOLLOWING STROKE

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Many cases of deviant sexual behavior in elderly following cerebrovascular accidents and dementia have been reported. But cases of paraphilia are rare. Here we report a case of a 78-year old male patient who developed promiscuous sexuality and paraphilia like bestiality following a cerebrovascular accident involving right internal capsule. On examination there were no other mood symptoms or cognitive deficits. He was managed on outpatient basis with sodium valproate 600 mg/day. He had significant improvement over 2

weeks.

COGNITIVE BEHAVIOR THERAPY IN SOCIAL PHOBIA WITH FOCUS ON PERFECTIONISM: A CASE REPORT

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Introduction: Social Phobia is characterized by excessive fear, apprehension and concern about humiliation in front of others. The cognitive behavioral models suggest that individuals with social phobia have unrelenting high standards in forming good impressions on others and are convinced of catastrophic consequences of being viewed negatively. Consistent with this conceptualization, researchers have found that social phobic's report high level of perfectionism. The research literature has proved relationship between perfectionism and psychopathology. However, there is little known about perfectionism and treatment outcome. **Aims and Objectives:** To describe a case of an adult with social anxiety disorder and perfectionism presenting to a clinical psychologist for therapeutic intervention. **Methodology:** Case Report-HP, 18 year old single female, high school educated, pursuing graduate studies, belonging to higher middle socio economic status coming from an urban background presented with an insidious onset, continuous course, three years history of excessive and persistent fear of performance in social situation and impairment in socio-occupational functioning. Structured assessments revealed severe symptoms, extreme avoidance, and severe impairment in social and occupational functioning. Patient was diagnosed with Social Phobia. Twenty sessions of CBT were provided. **Result and Discussion:** There was significant difference in pre-post assessment scores, and treatment gains were maintained at a three-month follow up period. The implications of the findings suggest that perfectionism can contribute to the maintenance of Axis I disorder when the domain in which perfectionism is expressed overlaps with the domain affected by the psychiatric disorder. **Conclusion:** This case report cannot provide a causal relationship between the perfectionism and social phobia. However, it indicates that perfectionism may play a possible role in psychopathology formation and its maintenance. Psychotherapeutic intervention, which explores and addresses perfectionism in social phobia appears to be

beneficial.

SUPPORTED EDUCATION FOR A CLIENT WITH MENTAL ILLNESS AT PSYCHIATRIC REHABILITATION SERVICES, NIMHANS: A CASE REPORT

B Chethan* on behalf of Psychiatric Rehabilitation Services team (With guidance of Avinash Waghmare, Jagadisha Thirthalli; PRS team includes C Naveen Kumar, Devvarta Kumar, Geetha Desai, Hesi Herbert, Nirmala BP, Poornima Bhola, Sailaxmi Gandhi, Sivakumar T, Swaroopa MU, SK Chaturvedi)

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Introduction: The word Rehabilitation means re-"again" and habitare "make fit" (Latin). Persons with mental illness often dropout from studies and employment. This is a hard blow on the personal growth and development of the client. Education plays an important role in attainment of gainful employment. As the clients with mental illness dropout of education, there is a need for supported education, which helps in pursuing their individual educational goals. We, at Psychiatric Rehabilitation Services have tried to bridge this unmet need. **Aims and Objectives:** Experiential account of Supported education. **Methodology:** A 26-year old male client who had dropped out of education after 10th standard, owing to psychiatric illness (OCD, mixed, Residual ADHD, Conduct disorder, Social anxiety, Family discord) was recruited under SERWICE (a program run under Department of Psychiatry) as a part of which supported education was used as a method of psychosocial rehabilitation. In the duration of 10 months he was seen as an outpatient on every Saturday, an inpatient for 1 month, day boarder for 2 months. In the same time period he also underwent cognitive behavior therapy and family therapy. Joining and continuation of the course (Diploma in Computer Science) was helped by the resident. **Result:** Employing supported education as a method of psychosocial rehabilitation is challenging. **Discussion:** Various challenges were faced during the course of his rehabilitation. These challenges included motivation of the client, family support, stigma, inpatient care and difficulties at the college. Various strategies were followed to overcome these challenges. Principles of cognitive behavior therapy, motivation enhancement, direct contact with college authorities, family therapy, activity scheduling, time management, supportive psychotherapy and Jacobson's progressive muscle

relaxation were tried. Conclusion: There are many challenges in employing supported education. Despite these challenges, there is an opportunity to employ different strategies to help clients achieve their life goals.

OLANZAPINE INDUCED RESTLESS LEG SYNDROME: A CASE REPORT

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Background: Restless leg syndrome (RLS) is a disorder causing sleep impairments, unpleasant sensations and an urge to move limbs (more commonly legs). First generation antipsychotics are common cause of RLS. Whereas, RLS induced by olanzapine is rare, there are only a few cases reported yet. Case: I report a 32-year-old lady suffering from BPAD, admitted with an episode of mania who was prescribed olanzapine up to 15mg/day. She developed RLS after initiation of olanzapine. This patient clearly satisfied all the criteria of RLS as per the International RLS Study Group (IRLSSG). Treatment and outcome: Patient's symptoms clearly improved when olanzapine was stopped. Conclusion: This report will caution clinicians about this side effect of a very commonly prescribed antipsychotic drug.

A CASE OF DIABETES INSIPIDUS ON LITHIUM TREATMENT

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Background: Lithium is a common therapeutic agent used to treat patients with various mood disorders. However, it has been associated with several forms of renal injury. The most prevalent of which is impaired urinary concentrating ability, which is estimated to be present in at least 50% individuals on chronic lithium therapy. Initially, the decreased urinary concentrating ability is largely reversible after cessation of lithium. However, with continued treatment, this defect translates into overt and irreversible polyuria and polydipsia in up to 20% of unselected cases, which is resistant to the actions of arginine vasopressin (AVP) (nephrogenic diabetes insipidus [NDI]). This functional lesion is associated with a chronic focal interstitial fibrosis predominantly in the medullary region of the kidney, which may be progressive, leading to end-stage

renal failure (7). It has been proposed that the centrally driven polydipsia and polyuria, which accompany many psychiatric disorders, may contribute directly to the renal injury, rather than lithium alone. Case: 28 year female single known case of BPAD for past 2 years receiving Lithium since 2012 presented with relapse of mood symptoms and on evaluation found to have features of Diabetes insipidus. Results: Lithium was stopped and thiazide was added. Conclusion: Even though lithium induced Nephrogenic Diabetes Insipidus is well known, Central partial DI has to be considered in psychiatric patients.

SEXUAL EDUCATION IN INTELLECTUALLY DISABLED PERSONS: AN EXPLORATORY STUDY ON CHALLENGES AND RESOURCES

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Introduction: Sexual education is a highly debated and emotive issue in many cultures. Sexuality of persons with intellectual disability (ID) is a specifically challenging issue for various reasons. It was intended to study the literature about the specific issues of sexuality and resources available for sex education for persons with ID. Methodology: Literature search of both electronic databases including PubMed and manual searches. Result: There is ample literature regarding the concerns of sexuality in persons with ID. They present with a hesitancy to broach the topic of sexual health, a lack of sexual knowledge and limited opportunities to sex education. They also face barriers to care. There is a higher prevalence of sexual abuse and assault, which is often underreported. There are connected legal and systemic concerns especially the capacity towards making sexuality related decisions. Besides these, there are restrictive or prohibitive attitudes of the caregivers. Lack of training and experience amongst clinicians has also been highlighted. There are many assessment materials for evaluation and sex education for persons with ID. The pictorial and computer-based materials can be easily understood. Some of them have been found to be effective in improving the knowledge and skills related to sexuality. Discussion: It is important to adapt the resource materials for cultural appropriateness. The sex education process should be carefully mapped and paced based on the individual need for the person with ID. Besides the usual content, emphasis should also be given to related issues about rights, risks, consequences and safer sex. Finally, providing abuse

protection skills is of paramount importance. Effectiveness of these interventions needs to be studied as well. Conclusion: In ID population the challenges regarding sexuality is as varied as that in general population, however the information is still scanty. There is a need to develop culturally appropriate ways of assessing and managing these issues along with adapting the sex education processes for this population.

ROLE OF DISULFIRAM IN OPIOID DEPENDENCE TO PREVENT RELAPSE TO OPIOIDS UNDER OCCASIONAL ALCOHOL INTOXICATION

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Aims and Objectives: To demonstrate the potential role of disulfiram in preventing relapse to opioids in opioid dependent, occasional alcohol users. **Methodology:** We describe two cases of opioid dependence with occasional use of alcohol. The impact of alcohol use on the course of opioid dependence and the role of disulfiram in improving the treatment outcome of such cases is discussed. **Results:** The first patient is a 38-year old married male diagnosed with opioid (heroin) dependence and nicotine dependence. Occasional use of alcohol 1-2 times per month not amounting to either a diagnosis of alcohol dependence or harmful use was also present. During the first four admissions for the treatment of substance use (between 2009 and 2011), after detoxification and psychosocial interventions, patient was discharged on naltrexone. However, after each discharge, he would relapse to heroin use under the influence of alcohol taken occasionally, within a month. During the fifth admission, after obtaining informed consent, the patient was started on disulfiram in addition to naltrexone and psychosocial interventions. This time he was able to abstain from both alcohol as well as heroin for well over an year. Another patient is a 28-year old unmarried male with a similar diagnostic profile. After similar failed attempts on naltrexone alone, he was put on disulfiram in his eighth admission leading to a significant increase in abstinence-period from one month to six months at the last contact. **Discussion:** Traditionally, most guidelines recommend disulfiram only for alcohol use disorders. These cases demonstrate that in certain situations, after a careful risk-benefit analysis, we may opt for disulfiram in opioid dependent patients with even occasional use of alcohol. **Conclusions:** Disulfiram may

be a useful drug where relapse to other substance use occurs under the influence of alcohol, irrespective of the frequency and pattern of alcohol use.

DIAGNOSTIC STABILITY OF ICD-10 MENTAL AND BEHAVIORAL DISORDERS DUE TO USE OF ALCOHOL - PSYCHOTIC DISORDER: A RETROSPECTIVE FIVE-YEAR FOLLOWUP.

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Aim: To study the diagnostic stability of patients diagnosed with Alcohol related psychotic disorder after five years of follow up. **Materials and Method:** Medical records of all adult patients who attended the Department of Psychiatry, Christian Medical College, Vellore, between January 1st and December 31st, 2008, diagnosed with Alcohol related psychotic disorder, were reviewed at the end of five years to assess for the stability of diagnosis. Relevant socio-demographic and clinical details were collected. **Results:** 607 presented to the department with alcohol related disorders. Of these 75 patients were diagnosed to have alcohol related psychotic disorder. Almost all of these patients had features to suggest alcohol dependence syndrome. The mean duration of alcohol use was 14.83 years. Only 1.3% of patient gave history of psychotic symptoms in the past. In 10% of these patients, the diagnosis was revised to either schizophrenia or delusional disorder. Diagnostic stability and correlation with socio-demographic variables will be presented in detail. **Conclusion:** Course and outcome in patients with alcohol related psychotic disorder is not well documented. The results of this study add to the existing literature that there is an increased risk of developing an independent psychotic disorder in patients who present with alcohol related psychotic disorder.

KNOWLEDGE AND MISPERCEPTIONS OF ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) AMONG PRIMARY SCHOOL TEACHERS OF VADODARA DISTRICT.

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Objective / Introduction: Attention Deficit/Hyperactivity Disorder (ADHD) is one of the most commonly diagnosed psychiatric disorders of childhood. Teachers can play a key role in identifying

and supporting students with ADHD. In order to fulfill this important role, it is imperative for teachers to have explicit knowledge about ADHD. Teachers are seen as one of the most valuable sources of information with regard to referral and diagnosis of ADHD. They also have the responsibility for creating an environment conducive to academic, social and emotional success for children with ADHD. However, since there is some doubt as to whether teachers have the appropriate knowledge of ADHD to fulfill this important role. Aim: This study aimed at assessing the knowledge and misperceptions of ADHD of primary school teachers in Vadodara district. Material & Methods: Total 491 schoolteachers participated in the study. The Knowledge of Attention Deficit Disorder Scale (KADDS)

along with a demographic questionnaire was used as the survey instruments to collect data. Descriptive statistics and correlation test were used to analyze the data. Results: Results indicated that teachers' knowledge of ADHD was insufficient. Significant difference about knowledge was found between Urban & Rural (0.00429); Gujarati & English medium school teachers ($p=0.0013$). Misperception was significantly higher ($p=0.05$) in teachers teaching in primary standard compared to upper primary standard. Conclusion: As the lack of knowledge was apparent from the study teacher's training in the field of ADHD is required as they are the first person to come in direct contact with the children; for early intervention & better future of the children.