

Alcoholism and Substance Abuse: Recent Trends in Intervention

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Abstract

Intervention strategies for substance abuse have further developed over the past one-and-a-half decades. These are reviewed after a brief recapitulation of what already exists. The recent trends are : firstly, towards more rational pharmacotherapy; secondly towards early and brief intervention; and thirdly, setting more realistic goals. The individual advances under each of these three frontiers are highlighted. Gradually, a holistic interactional approach seems to be emerging, bridging across different modalities of treatment.

Key words -

Alcoholism,
Substance abuse,
Intervention,
Pharmacotherapy,
Psychosocial therapies,
Treatment matching,
Harm reduction

In a recent series of articles on addiction published in the Lancet, Seivewright and Greenwood [1] wrote "Drug misuse is an unpopular subject with many doctors, partly because of seemingly overwhelming relapse rates and partly because of the behavioural problems that can occur when drug misusers interact with treatment services". Unpopular it still may be, even loathsome to a few; but no more negligible. The problem of alcoholism and substance abuse, mounting gradually over the past few decades on global as well as national levels, has forced the appropriate authorities to sit up and initiate a commensurate response. In this article, we shall briefly review the various areas of drug abuse intervention where progress has been made recently. Also, newer foci of concern will be highlighted. Since the area is very wide and diverse, these can only be touched upon in order to be something like an orienting exercise; the references cited will often provide more detailed information to those who need or want it. We shall further restrict ourselves to 'intervention' rather than prevention or rehabilitation, as denoted in the title. Finally, keeping the space consideration in view, only those substances which are widely abused in India till now shall be covered. Although cannabis is clearly one of them, it will not surface specifically in much of the discussion here, since the hot debate that has been going on about cannabis is concerned with its legalization and/or de-criminalization and not with any recent intervention particularly.

But before coming to recent trends, it should be useful to recapitulate the various aspects of intervention in substance

abuse, so that we may have some common starting ground.

Recapitulation

The American Psychiatric Association [2], in its recently published "Practice guidelines for the treatment of patients with substance use disorders", has mentioned the various aspects as follows : Assessment, psychiatric management, specific treatments (pharmacological and psychosocial), formulation and implementation of a treatment plan, treatment settings, and clinical features influencing treatment settings, and clinical features influencing treatment. An alternative, perhaps more practical, way to organize the interventions would be : assessment (and formulation), detoxification, and maintenance (relapse prevention) [3], [4].

Assessment

This includes:

- a. detailed history of the patient's past and present substance use and its effects on cognitive, psychological, behavioural and physiologic functioning,
- b. general medical and psychiatric history and examination,
- c. history of prior treatment (and outcomes),
- d. family and social history,
- e. screening of breath or body fluids for abused substances or their deleterious effects; and
- f. other relevant psychological or laboratory tests to help confirm the presence or absence of comorbid conditions frequently associated with substance use disorders.

Formulation of treatment plan

The goals, limits, settings, and modality of treatments are decided on the basis of comprehensive assessment of the patient's needs, priorities, liabilities and resources (both personal and socio-environmental). These decisions are also influenced by the orientation and resources of the treating team. A treatment plan is developed that includes the following components,

- a. psychiatric management,
- b. a strategy for achieving abstinence or reducing the effects or use of illicit substance,
- c. efforts to enhance ongoing compliance with the treatment programme, prevent relapse, and improve functioning; and
- d. additional treatment necessary for patients with comorbid conditions.

Psychiatric management

Psychiatric management is the foundation of treatment for patients with substance use disorders [2]. It

has the following objectives (which overlap with the components of treatment formulation mentioned above); establishing and maintaining a therapeutic alliance, monitoring the patient's clinical status, managing intoxication and withdrawal states, developing and facilitating adherence to a treatment plan, preventing relapse, providing education about substance use disorders, and reducing the morbidity and sequelae of substance use disorders. The two major practical steps in the management are :

- i. detoxification, and
- ii. maintenance (relapse prevention).

Detoxification

This refers to the process by which someone who is physically dependent on a psychoactive substance is withdrawn from it [3]. Detoxification programmes provide supervised withdrawal from a drug of dependence so that the severity of withdrawal symptoms and serious medical complications are minimized [4], [5]. In the usual, "medicated" detoxification, four means are followed singly or in combination :

- a) graded, supervised withdrawal of the same substance (e.g. benzodiazepines, nicotine, methadone)
- b) pharmacological 'substitution' by a medicine which is cross tolerant with the target drug of dependence (e.g. benzodiazepines for alcohol; methadone for heroin);
- c) use of a medicine that manipulates or alters the withdrawal mechanism (e.g., clonidine for withdrawal from various substances but predominantly opioids, by minimizing the activation of noradrenergic neurons in the locus caeruleus normally associated with withdrawal): and
- d) symptomatic treatment to alleviate symptoms of withdrawal (e.g. nonnarcotic analgesics, anti-diarrhoeals and hypnotics for pain, diarrhoea and insomnia respectively).

In "unmedicated" or social detoxification, drug withdrawal is accomplished without pharmacological assistance, both in Western countries but more so in Asian settings [6], [7], [8].

Maintenance (relapse prevention)

Unlike detoxification which, at least in the formal medical settings, is primarily dependent upon pharmacological principles, the maintenance phase is marked by a confluence of both pharmacological and psychosocial treatment follows four basic approaches [4] :

- a) long-term or maintenance substitution with a cross-tolerant medication (e.g., methadone or levoalphaacetyl methadole for opioid dependence);
- b) maintenance treatment with an antagonist medication (e.g., naltrexone for opioid dependence);
- c) deterrent or aversive medication (e.g., disulfiram for alcohol dependence); and
- d) "anti-craving" medication (e.g., fluoxetine for alcohol dependence [9], [10]).

It has been said that "medication treatment" can only 'level the playing field'. Psychosocial treatment, group therapy, and individual counselling do the actual treatment to prevent relapse" [11]. At an individual level, psychosocial therapies consist of cognitive therapies, behavioural therapies, and psychodynamic/interpersonal therapies. At a collective level, these consist of group therapies, family

therapies, and self-help groups. Each of all these psychosocial therapies often has further ramification, and it may be difficult to make a final decision, which also is influenced by therapist's background, orientation and resources.

After this recapitulatory overview, we will turn to some of the recent trends and issues in intervention for alcoholism and substance abuse.

Towards more rational pharmacotherapy

The process of drug dependence involves alterations in brain function because "psychoactive" substances, ultimately, are 'neuroactive' in that they alter brain transmitter function. For most drugs of misuse, the molecular sites of action are receptors or transporter sites in the neurons; many of these have been cloned and sequenced. Such discoveries help in developing theories of the brain mechanisms underlying addiction, and also, as a logical sequela, in directing research towards a more rational design of treatment. David Nutt, in his latest article on 'addiction : brain mechanisms and their treatment implication' [12], has outlined exactly such an approach (p.31, table). Some examples of the clinical offshoot of this rational, neurotransmitter-based approach are mentioned below.

Clonidine, lofexidine

Both are alpha-2-adrenergic receptor agonists, acting presynaptically on locus caeruleus neurons which fire rapidly and excessively during drug withdrawal. The hyperactivity of these noradrenergic neurons during withdrawal gives rise to the sympathomimetic autonomic features as markedly noted in opioid withdrawal : pupillary dilatation, tachycardia, perspiration, lacrimation, rhinorrhea, pilo-erection [13]. Clonidine and lofexidine, by their feedback inhibition of norepinephrine release, minimize these symptoms. Lofexidine does not have the sedative and hypotensive side-effects caused by clonidine and is becoming rapidly popular in countries where it is available such as UK [1]. In India, clonidine is now the drug of choice in opioid detoxification.

Buprenorphine

This partial agonist agent at the opioid mu-receptor subtype can help both detoxification (acting as an antagonist) and maintenance phases (acting as an agonist then). It has been found, in largely USA-based research, to produce less withdrawal, smoother detoxification, and less interaction with other euphoriant drugs such as cocaine [14], [15], [16], [17]. A recent Indian study has also found it superior to clonidine for opioid detoxification [18]. Unfortunately, buprenorphine itself can be abused [19], [20], [21], often leading to potentially lethal complications such as pseudoaneurysm [22].

Naltrexone

This opioid antagonist is used in accelerated detoxification in combination with clonidine, but its most important use is as a relapse-prevention agent. Most interestingly, other than opioid dependence, it has also been found recently to be useful in alcohol dependence [23], [24], the latest report confirming its usefulness over a 6-month period [25]. This shows the importance of the endogenous opioid system in generating and maintaining dependence on drugs other than opioids alone.

Selective serotonin re-uptake inhibitors (SSRIs)

Decreased brain serotonin has been linked with impulsiveness and low scores on the 'harm-avoidance' dimension of behaviour [26]. Working on the premise that substance abuse often involves or implies impulsive, self-harming behaviour, the SSRIs have been tried in various substance abuse with overall encouraging results so far in smaller clinical trials [27], [28], [29].

Other agents

Acamprosate, a GABA agonist, has been used in alcohol dependent patients for relapse prevention, based on the notion that alcohol also acts at similar sites [30]. Similarly, calcium-channel blockers like infedipine has been used [31].

Towards early and brief intervention

Turning our attention to the non-pharmacological aspects of intervention, the most striking recent trend appears to be the upholding of early brief interventions [32]. Contrary to previous popular belief, relatively brief interventions have consistently been found to be effective in reducing alcohol consumption or achieving treatment referral or retention of problem drinkers, and a significant effect size was found in a meta-analysis of 32 controlled studies across 14 nations involving over 6000 problem drinkers [33]. The common elements of such brief intervention were summarized as the acronym FRAMES : Feedback to the patient about personal risk or impairment; emphasis on personal Responsibility for change; Advice to change one's drinking pattern; Menu of alternative options for change; therapeutic Empathy as a counselling style; and enhancement of client Self-efficacy or optimism. This was often feasible within relatively brief-contact contexts such as primary health care settings and employee assistance programmes. Although it required much lesser time and cost, it was consistently better than no-counselling and usually as good as other, more formal or long-drawn therapies. Two cautionary notes are in order; first, these brief intervention strategies have been tried in alcohol use disorders only; second, most of the studies included brief intervention excluded severely affected drinkers who were thought to need psychiatric referral, had symptoms of physical dependence, or who lacked social support [34].

Such brief interventions can gainfully be added to pharmacological detoxification. Indeed, there have been some recent trends of change regarding detoxification too, with more focus on non-pharmacological aspects.

Goals and settings of detoxification

How we assess the effectiveness of detoxification programmes depends upon what we believe their aims to be. Currently, detoxification is no more regarded as a treatment for dependence per se, but rather as a process that aims to achieve safe and humane withdrawal from a drug of dependence [5]. Secondly, it helps the patient in "having a break" and possibly opting for longer-term treatment, and minimizing harm due to continued use of drugs and alcohol.

Until a decade or so ago, standard alcohol detoxification was inpatient, fully medicalised treatment in a specialist drug and alcohol unit. The major change in the past decade has followed the realisation that a broader range of approaches can deal with the wide range of severity of alcohol withdrawal symptoms. Although residential specialist detoxification continues to have an important role, it need no longer be the method of first choice, being restricted for those severely dependent drinkers with past history of delirium tremens or withdrawal fits, and for those who do not live in an environment that can support outpatient detoxification.

For opioid detoxification, however, there is more reason for choosing inpatient rather than outpatient detoxification, largely because many more patients complete inpatient treatment than outpatient (81% versus 17% in a British study [35]). Thus, there is a differential preference for detoxification settings for alcohol and other substance abuse.

Towards more realistic goals

The field of substance abuse treatment is gradually coming to terms with the demands of reality. This trend, especially noted over the past one-and-a-half decades, is increasingly reflected in the following three approaches :

- a) refinement of the psychosocial interventions;
- b) patient-treatment matching approach; and
- c) harm reduction, rather than drug abuse eradication approaches.

These three areas are briefly highlighted below.

Recent trends in the psychosocial interventions

Halikas [11] noted, "when psychodynamic psychiatry dominated the treatment of the addictions. .. it did a poor job. That therapy was based on the principle that the patient's far past was important but not his or her current behaviours. The patient would see the analyst every day, and get drunk every night, but the analyst did not want to hear about that. The analyst wanted to hear about the patient's childhood..." Psychodynamic psychotherapy has since been largely abandoned, mostly in favour of cognitive and behavioural therapies. Supportive - expressive psychotherapy, however, does have a place in opioid dependence treatments [36]. Here the focus is on the present rather than the past.

Cognitive behavioural therapies appear to be in the forefront today, backed by sound methodology and

outcome data. Cognitive therapy as developed by Beck and his colleagues has been successfully applied to substance abuse treatment [37]. Relapse prevention is another set of cognitive-behavioural strategies found to be similarly successful in well-controlled research [38], [39]. Motivational enhancement therapy, a form of brief intervention alluded to earlier, has been shown to be highly efficacious [40]. All these therapies, though differing in exact content, approach and duration, have the following in common [2] :

- a) they alter the cognitive processes that lead to maladaptive behaviours in the substance abusers;
- b) they intervene in the behavioural chain of events that lead to substance use;
- c) they help patients to deal successfully with craving for drugs; and
- d) they promote social skills and coping skills compatible with maintaining abstinence.

In case of more orthodox behaviour therapies, aversion therapy, used in the 50's and 60's has given way to contingency management procedures and strategies based on cue conditioning; the latter has generated considerable interest recently [41], and largescale studies are now warranted.

Other than these, group therapies, family therapies, and self-help groups of various types continue to be useful in substance abuse intervention, through no clear recent trend has emerged in these.

Patient-treatment matching

After addressing this issue in details, Chick [32] concluded, "the matching studies, only now beginning to be undertaken in large samples, show how dangerous it is to make oversimplifications (about treatments)..... If anything has emerged as a treatment concept in the past decade, it is surely that, however much substance abusers may have in common with each other, there is always a place for the assessment of individual needs". (p.310). Many studies have been reported since, which have generally confirmed this conclusion. Thus, the search is no more to find an "ideal and universal" treatment for alcoholism and substance abuse, but rather to find which treatment helps whom. Patients with comorbid psychiatric disorders form an especially difficult group (again heterogenous!) for whom proper matching is essential.

Being more realistic : harm reduction

When total eradication of substance abuse remains an "ideal" but elusive goal, one has to fix "intermediate goals" other than complete abstinence in established addicts. Harm reduction is one such pragmatic approach, which aims to minimize the harm accrued to the user (and, potentially, to the society as in the case of the needle-sharing sexually active HIV-positive infecting drug user) due to the continued unsafe use of drugs. At the practical level, this would mean taking such steps as needle distribution or exchange programmes, provision of free bleaching powder and condoms, and teaching safe needle use and safe sex. They may all seem, at a first sight, quite far removed from the usual activities that the treating team is supposed to do. Indeed, conflicts have been generated regarding policy formulation since superficially such "harm reduction" measure may be equated with covert promotion of drug use! Yet, at a realistic plane, the adoption of such measures, if only as intermediate goals, can be justified if one glosses through the reports of HIV seropositivity rates in the

North-Eastern state of India [42]. Recently, governments in many countries are adopting harm reduction approaches in varying measures, including India. The broadest thinking about harm reduction leads to the matter of legislative drug policy [43], though that is beyond the scope of this paper.

To sum up : towards a holistic approach

In the last 10-15 years and especially the last decade, significant trends of change in intervention for substance use disorders have been observed and discussed in the foregoing sections. The changes have been spurred on by quite disparate events : technological advances facilitating basic-level research, phenomenal growth of the pharmaceutical industries, advances in nonpharmacological therapeutics especially the cognitive-behavioural methods, and the advent of HIV infection and AIDS on the global horizon. Each of these events, and others, have forced the recent trends noted above. Gradually, however, a more holistic and interactional approach is emerging. In context of the pharmacological versus psychosocial therapies, it is not so much of an "either or" question now : they are often seen to be interconnected. Latest data indicate that conditioned responses to cocaine cues are mediated by central dopamine release and may be blocked by haloperidol [44]. Thus, an interactional holistic approach bridging the schism between apparently different therapeutic strategies may provide the clues for the substance abuse intervention for tomorrow.

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