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# Prevalence and Treatment of Substance Abuse in the Mentally Retarded Population: An Empirical Review

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# Prevalence and Treatment of Substance Abuse in the Mentally Retarded Population: An Empirical Review†

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**Abstract**—This article presents the first comprehensive review of studies of alcohol and illicit substance use in mentally retarded individuals, including prevalence, and recommendations for assessment and treatment. Mentally retarded persons appear to use/abuse alcohol at about the same rate as their noncognitively-impaired counterparts, and illicit drugs at moderately lower rates. However, little is known regarding which assessments and interventions are most effective in this population, given the absence of published treatment outcome studies and case examples. This is particularly disconcerting as detrimental consequences resulting from substance use have been identified in mentally retarded samples. Anecdotal data suggests that treatment for these individuals require modifications of existing empirically-derived substance abuse interventions to accommodate their unique needs.

**Keywords**—drug abuse, mental retardation, prevalence, substance

Recent studies have indicated that 52% of persons in the general population report having used alcohol in the past month (SAMHSA 1996), about 30% to 45% of adults have suffered severe problems related to alcohol use (Kaplan, Sadock & Grebb 1994), and about 8% are dependent on alcohol (Midanik & Clark 1994). About 6% of adults have been found to use illicit substances regularly (SAMHSA 1996), and lifetime prevalence rates of illicit drug dependency is also about 6% (Kaplan, Sadock, & Grebb 1994). The use of illicit substances by young adults is particularly alarming, as the rate of estimated "drug use in the last month" for youths in 1995 (11%) has doubled from 1992 estimates (SAMHSA 1996).

Given the extent of substance use in the general population, it can be assumed that at least a small percentage of substance-abusing individuals are mentally retarded (MR), since five million people in the United States (2% of the general population) are mentally retarded, i.e., have an intelligence quotient below 70 (Blatt 1987). Indeed, Wenc (1981) mentioned that substance abuse is one of the greatest challenges facing mentally retarded individuals who leave restrictive environments and move into community settings because these individuals are deficient in identifying and resisting manipulation. According to Wenc

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(1981:43), mentally disabled persons "... have learned from association, advertisement, and peer pressure that to be a 'somebody' and to meet and make friends, it is important to participate in the rituals of the neighborhood. In many areas this means a lot of time spent at the local bar." Rowitz (1988) reported that mentally retarded adolescents are especially at risk of abusing substances because these youth may have particular difficulties establishing their independence (Brier 1986, as cited in Rowitz 1988). Cognitively impaired individuals also lack problem-solving skills related to resisting substances given by others, and they have poor insight regarding negative consequences of substance use. Lack of knowledge regarding drug effects, and potential toxic interactions with psychotropic medications (which are often consumed by the mentally retarded) compound problems related to their use of illicit drugs.

As asserted by Miller and Brown (1997:1271): "Whereas 'alcoholics' and 'addicts' were once assumed to have homogeneous pathology and common personality traits, the data instead point to broad diversity among substance-dependent individuals. Such heterogeneity cannot be accommodated by a one-size-fits-all approach to assessment and intervention."

Therefore, a great need exists for determining the extent of substance abuse by mentally retarded persons, since they constitute about 2% of the general population, and because of their cognitive impairments may be at particular risk. Also needed is a determination of the types of validated treatments appropriate to them. The purpose of this article is to review studies of substance use/abuse with mentally retarded persons, including studies that have examined the consequences of substance use in mentally retarded populations. Anecdotes of illicit drug and alcohol abuse treatment specific to this population will also be emphasized, as treatment outcome studies and case examples in mentally retarded substance abuse samples have yet to be published.

## PREVALENCE OF SUBSTANCE USE /ABUSE IN MENTALLY RETARDED POPULATIONS

In one of the earliest studies of substance abuse in the mentally retarded population, Huang (1981) compared the consumption of alcohol by educable mentally retarded (EMR) adolescents (n=190) and non-mentally disabled adolescents (n=187). Drug use information was obtained from student self-reports using a verbally administered questionnaire. Results indicated that 59% of the nondisabled students, as compared to 32% of students in the EMR group, were labeled "users" (having consumed alcohol at least two times during the past year). Interestingly, more EMR adolescents than nondisabled adolescents reported that they consume alcohol because "their friends drink" (31% versus 20%), "to avoid being laughed at" (14% versus 6%), and "to be in the crowd" (22% versus 15%). These results led the investigators to conclude that self-reported use of alcohol by EMR adolescents is more dependent on social influences than reports of alcohol use by non-EMR adolescents.

Westermeyer, Kemp and Nugent (1996) surveyed 348 adult patients in two university substance abuse facilities. Investigators found 6% of the overall sample were mentally retarded (i.e., IQ below 70) according to standardized tests, which is interesting since the percentage of mentally retarded persons in the general population is only 2%. The investigators provided the following tripartite explanation to account for the overrepresentation of mentally retarded individuals in this substance abuse sample: (1) mentally retarded individuals may be at an increased risk of substance abuse, (2) there may have been a high rate of treatment failure with MR patients, which resulted in a greater proportion of mentally retarded adults remaining in treatment, and (3) university-based substance abuse clinics attract a greater percentage of mentally retarded individuals. When comparisons were made between mentally retarded and non-mentally retarded patients in this study, MR substance abusers were found to demonstrate lower prevalence and frequency of cannabis and "hard drug" (i.e., cocaine, amphetamines, inhalants) use than non-MR individuals, but lifetime prevalence rates of alcohol and tobacco consumption were about the same. This latter finding is probably due to the greater accessibility of alcohol and tobacco. Non-MR substance abusers reported greater financial problems than MR substance abusers, perhaps due to the high cost associated with illicit drugs (which were being used more often by non-MR patients). Also worthy of mention, the onset of substance use in MR patients was 2.5 years later than non-MR patients, possibly accounting for the lower prevalence rate noted above (Huang 1981) for adolescents.

Consistent with the preceding investigation, Krischef (1986) completed a survey study that demonstrated significant alcohol use in 214 adults who were predominately mildly retarded and who were residing in the community (living with family members, group homes, independent living facilities, or foster care). About 50% of the subjects reported that they had used alcohol in their lifetime, and among this group, nearly one in ten reported daily alcohol use (a rate comparable to that found in the general population survey). No statistical differences in alcohol use were reported between the various living arrangements.

Edgerton (1986) completed an ethnographic study of four samples of mildly retarded adults. The study included an evaluation of negative consequences associated with their drug use. The groups consisted of adults who were receiving living assistance services (n=48), inner city dwellers (n=45), adults residing independent of a caregiver (n=40), and those recently discharged from a large state hospital (n=48). Field observers monitored the subjects for indications of substance use, and friends and relatives of

the subjects were interviewed to obtain reports of subjects' substance use. The highest prevalence of alcohol and pot use in this study occurred in African-American inner city MR adults. Fourteen percent of the retarded men in this study reported moderate alcohol or marijuana use (once or twice a week), and 10% of these men reported heavy use (i.e., intoxication several times per week). The other three groups also reported moderate to heavy rates of use (range = 5% to 14%). Thus, a substantial percentage of the mentally retarded individuals in this study were identified as abusing alcohol and illicit substances at a rate that appears somewhat comparable to substance abuse rates found in the general population (SAMHSA 1996). A strength of this study was the incorporation of collateral informants and objective observers to monitor signs of intoxication and substance use. Although it is possible that monitoring procedures may have influenced the subjects to decrease their use of substances, there was no mention of reporting biases by the investigators.

Rimmer, Braddock and Marks (1995) surveyed the prevalence of various health-related behaviors (including alcohol use) in 329 mild to severely retarded adults living in institutions, group homes, and in homes of family members. An estimate of each subject's daily alcohol use was elicited from the parent, legal guardian, or institution staff member most associated with each subject. The consumption of alcohol in institutions was nonexistent for males and females, probably due to enforced restrictions of alcohol use and reporting biases to deny use. In the family setting, females were reported to have used no alcohol, and males were reported to have consumed an average of 0.2 drinks per day. A significantly greater quantity of alcohol was consumed daily by group home residents (0.6 drinks for males, 0.4 drinks per day in females). Thus, restricted environments appeared to result in lower frequencies of reported alcohol use. One noteworthy feature in this study was the use of collateral reports, which probably improves accuracy in estimating usage for some subjects, particularly those who are severely retarded.

Lawrenson, Lindsay, & Walker (1995) investigated the drinking pattern of 55 mild to moderately retarded adults attending day facilities in Australia. Interview results indicated that 68% of females in this sample had used alcohol, compared with 93% of nonretarded females. Similarly retarded males reported less alcohol use than nonretarded males (83% and 98%, respectively). The investigators suggested that retarded individuals probably used alcohol less often because they lacked finances and opportunities to drink. However, it should be mentioned that the rates of alcohol use reported in this study are excessively high in comparison to normative prevalence rates in the United States, and that absolute percentage differences in alcohol use between cognitively impaired and non cognitively impaired groups were only 25% and 15% for female and male populations, respectively.

## CONSEQUENCES OF SUBSTANCE ABUSE IN MENTALLY RETARDED POPULATIONS

In an effort to determine the consequences of substance abuse in the MR population, Westermeyer, Phaobtong and Neider (1988) compared a group of 40 mentally retarded adults (IQ less than 70) believed to be free of substance use problems (MR only) with a group of 40 mentally retarded adults who met the DSM-III criteria for substance abuse (MR/SA). As expected, MR/SA subjects reported significantly more alcohol and drug use than the comparison group, including significantly more substance abuse indicators (e.g., tolerance, blackouts, guilt). Results also indicated that the MR/SA group evidenced more negative psychological consequences (e.g., mistrust, nightmares, suicidal ideation), family problems (fights, family confrontations), social difficulties (decreased work/school performance, loss of friends, arrests for driving while intoxicated), psychiatric hospital admissions, and state psychiatric hospital admissions. Physical and sexual abuse during childhood was also more common in the MR/SA group (58% and 38%, respectively) than in the MR only group (20% and 10%, respectively). The MR/ SA subjects also reported more severe childhood behavior problems (truancy, school suspension, and promiscuity) than did the MR-only subjects. Interestingly, fathers of MR/SA subjects demonstrated significantly more substance abuse than fathers in the MR only group. This study provides evidence that patterns of substance abuse in the MR population (i.e., familial relationship of substance abuse, negative consequences) are consistent with those in non-MR populations.

Krischef and DiNitto (1981) surveyed 139 mentally retarded individuals who were admitted to an alcohol treatment facility (ATF), and 275 MR individuals who were reportedly experiencing problems with substance abuse and who were members of the Association for Retarded Citizens (ARC). The majority of subjects in the ATF and ARC groups (67% and 58%, respectively) reported work-related problems (i.e., absenteeism, tardiness, poor interpersonal relationships, and poor reliability in work-related behaviors). However, MR individuals who were admitted to the ATF were arrested for alcohol-related offenses (i.e., driving while intoxicated, public intoxication) more often than ARC members. The investigators reported that these findings suggest MR individuals (or guardians on their behalf) may not seek treatment until their substance abuse problem is quite severe.

In a study conducted by Krischef (1986), 13% of "mentally retarded" patients in a residential hospital who used alcohol reported family discord due to the alcohol use. Alcohol use also was found to contribute to work-related problems, as 7% of the subjects were found to use alcohol during employment hours. In addition, 50% of these subjects were taking prescribed medications that increased the risk of toxicity due to substance contraindications.

Andrews (1991) conducted a follow-up study of 25 mildly mentally retarded young adults who were diagnosed with a primary psychiatric disorder prior to receiving treatment in a residential facility. Twenty-four percent of the sample were diagnosed with substance abuse disorders. Results indicated that substance abuse prior to admission significantly predicted poor community adjustment at follow-up.

## TREATMENT OPTIONS FOR MENTALLY RETARDED SUBSTANCE ABUSERS

Treatment outcome studies for the mentally retarded substance abuser are notably absent in the literature. In fact, no published outcome study was found, regardless of methodological restriction. Of the many outcome studies conducted with the general population of substance abusers, no post facto separate analysis was found for the cognitively impaired. However, several studies have reported results that are relevant to the treatment of MR individuals.

Lottman (1993) polled 27 substance abuse agencies about their services for MR individuals. Thirty-seven percent of responding agencies reported that they do not "routinely" offer services to mentally retarded persons, and 21% of the agencies reported that they explicitly do not accept MR persons. Of those substance abuse treatment centers that reportedly accepted (or would accept in the future) mentally retarded persons, all agency representatives stated that their programs lacked specific training in treating clients with cognitive impairments. Agency representatives reported a general lack of knowledge regarding chemical dependency in individuals with MR, unfamiliarity with community resources for MR substance abusers, and poor knowledge of the effects of complex medication regimens often prescribed to MR individuals. Moreover, Lottman reported that these agency representatives might have a financial bias against admitting MR substance abusers, as MR individuals are often of lower economic status.

Krischef (1986) concluded that MR alcohol abusers do not utilize substance abuse facilities at the same rate as their nonretarded peers, as only 2% of their sample (n=214) of mentally retarded drinkers participated in any type of alcohol treatment programs. The author reported very few outreach projects targeting MR substance abusers, program exclusionary criteria that often preclude treatment of MR substance abusers, and 12-Step programs that may intimidate MR substance abusers who have poor verbal abilities. In addition, the author mentioned that poor detection procedures for MR substance abusers often result in a lack of treatment for this population.

When MR substance abusers are admitted to substance abuse treatment programs (most often because treatment facilities failed to identify their cognitive impairments) they are often unable to benefit from mainstream counseling procedures. For instance, MR individuals have limited vocabularies, demonstrate poor development of memories necessary to retain information pertinent to treatment, have difficulties discriminating relevant and irrelevant information, and experience feelings of isolation and rejection regarding their disabilities (Knight-Taylor 1991). Of course, these concerns warrant specialized treatment approaches. Of the substance abuse treatment programs polled by Krischef & DiNitto (1981), 68% claimed to use different techniques with their MR clients, including extended treatment, restricting confrontational techniques, simplified drug education, behavior therapy (not specified), setting short term goals, and individual therapy instead of group therapy. However, Paxon (1995) suggests group therapy may be used to improve interpersonal relationships if the leader is sensitive to MR concerns (i.e., use of verbal rehearsal strategies, use of clearly understood concepts). To this end, state officials in Maine developed a treatment model for substance-abusing mentally retarded adults using Alcoholics Anonymous groups and short-term reinforcement of appropriate behavior (Maine Department of Mental Health and Mental Retardation 1984). Social-skills, relaxation and problem-solving skills training relevant to substance abuse situations have also been identified as potential areas of treatment focus (Small 1980/81). Indeed, Westermeyer, Kemp & Nugent (1996) claim didactic approaches (e.g., 12-Step approach) are probably less effective than contingency contracting and close supervision (stimulus control strategies). However, as noted above, the absence of published treatment outcome studies (both controlled and uncontrolled) do not permit the drawing of any definitive conclusions at this time.

## CONCLUDING COMMENTS AND FUTURE DIRECTIONS

In summary, there is some evidence to suggest the prevalence rate of alcohol abuse in mentally retarded adult populations is about the same, or slightly lower, than in the general adult population. Use by MR youths is reported to be somewhat lower, possibly because their onset of alcohol use is much later than nonretarded youth, thereby restricting their engagement in alcohol use. Mentally retarded persons have been identified as illicit drugs users, but to a lesser extent than non-mentally retarded persons. The latter finding may be partly due to underreporting of drug use in this population, difficulties these individuals experience in their efforts to obtain illicit substances, or lack of contact with drug-associated situations. For instance, lower rates of substance use have been reported in MR populations residing in highly restricted environments (e.g., closely monitored residential settings), as compared to those who live in less restrictive settings (e.g., independent or assisted living).

In general, reported prevalence rates of substance use/abuse in mentally retarded populations may be gross underestimates of their use, as no studies have utilized urine drug screen analyses or standardized methods to obtain reports of substance use from both the individual and a collateral (i.e., timeline follow-back procedure; Sobell & Sobell 1992). Although the preceding argument holds for many of the survey studies that have been conducted in non-mentally retarded samples, it should be mentioned that mentally retarded individuals are less articulate. Moreover, some mentally retarded substance abusers may be less likely to report their use of substances because they may perceive a lack of confidentiality, as they are very often dependents of the state, parents, etc., who may implement increased restrictions consequent to their knowledge of substance use.

Of the self-report measures of substance use, the timeline follow-back procedure would probably be most beneficial with mentally retarded individuals, as the informant is presented monthly calendars in which significant events (e.g. birthday, holidays) are noted. The individual is then asked to report the days in which substances were used while the calendars are viewed. Consistent with Paxon's (1995) recommendations regarding optimization of recall using visual cues, the calendars could include visual symbols of past holidays and events. It is obvious that the accuracy of retrospective reports of drug use by MR individuals will vary depending on their level of cognitive impairment, among other things. Certainly, it would seem that the accuracy of self-reported data would depend on a commensurate relationship between the number of days which are retrospectively assessed and the individual's level of intellectual functioning. However, investigators have not ascertained the reliability and validity of drug use reports of MR individuals across time, and as a function of their level of cognitive impairment. Easy to understand confidence indicators (a little sure, a lot sure) might be beneficial in self/collateral reports of drug use, particularly for those MR individuals who often adamantly deny substance use when queried, due to social pressures.

When substance abuse is identified in MR individuals, negative consequences of abuse are consistent with those experienced in non-MR populations (e.g., higher rates of psychiatric comorbidity, nightmares, suicide, mistrust, family discord and abuse, loss of friends, poor school/work performance, promiscuity, truancy, DUIs). Nevertheless, mentally retarded individuals present for treatment much later than their non-MR counterparts, and when treatment is solicited it is difficult to obtain. Indeed, approximately 60% of substance abuse treatment facilities do not serve mentally retarded substance abusers, and those that do are ill-equipped to treat their unique problems (Lottman 1993). Moreover, substance abuse agency representatives are often unaware of treatment options for MR substance-abusers, and are therefore unable to refer them to appropriate treatment facilities.

The absence of published treatment outcome studies (including case examples) specific to MR individuals may be a reflection of the failure to discover what might be effective, and not simply oversight, since the retarded substance abuser has distinctive attributes mitigating against treatment benefits. Of the treatments that have been proposed as potentially beneficial, most have involved cognitive-behavioral methods (e.g., social skills training, behavioral contracting, drug education, relaxation, and problem solving). However, investigators have consistently recommended that these interventions should be modified to handle the unique concerns of MR substance-abusers. The second and third authors of this article have not published treatment outcome data specific to MR substance abusers, however, they have conducted controlled treatment outcome studies in which some cognitively impaired persons were incidentally included in the study sample (Azrin et al. 1996; Azrin et al 1994 a, b). That is, persons who were formally diagnosed with mental retardation were excluded from the three aforementioned studies; however, about a dozen persons in these studies were then identified to be cognitively impaired, or in the borderline range of intellectual functioning, according to retrospective school or parent reports. Anecdotal observations and examination of individual subject results (not published) indicated that standardized behavioral treatments were *ineffective* with substance abusers who appeared to be cognitively impaired, but relatively effective with subjects who did not evidence cognitive impairments. In contrast to the nonimpaired subjects, these persons rarely completed treatment, none were able to achieve abstinence from illicit drugs, and several were reported to "run away from home overnight" more than once. Another unexpected finding was that, more so than the others, these individuals vehemently denied illicit drug use, even when positive lab results were disclosed. The parents of cognitively impaired persons in our studies also appeared to be critical of their children, relative to the parents of non-cognitively impaired substance abusers. These parents did, however, respond relatively well to therapies that were aimed at teaching them to attend to the positive behaviors of the subjects. Unfortunately, the authors failed to emphasize communication-based therapies, and instead allocated most of the session time to sophisticated behavioral contracting strategies that proved largely unsuccessful (e.g., point systems). In retrospect, we concur with investigators who have proposed simple contracting strategies (i.e., quid pro quo) that involve close monitoring of drug incompatible behaviors. Results of assessment studies have indicated that substance use by mentally retarded individuals is more determined by social pressures (i.e., drug pushers, peers that find it funny to watch a "drunk retard") than in non-mentally retarded populations. The latter finding supports the implementation of stimulus control strategies in this population (i.e., how to avoid drug use and spend more time with non-drug

associated stimuli). In the three studies that were mentioned above (Azrin et al. 1996; Azrin et al. 1994a, b), drug-associated and nondrug-associated situations were typically discussed with the substance abuser and significant other(s) together. However, given the reluctance of cognitively impaired individuals to report illicit drug use, the substance abuser and significant other(s) should have probably been separated while these strategies were discussed to increase the probability of open discussion of risky situations. It is important to emphasize that intelligence was not experimentally controlled for in these studies, and persons with obvious intellectual deficits were excluded. Thus, these observations are suspect, and intended only as suggestions to incorporate in controlled treatment outcome research with MR substance abusers. Indeed, as this review indicates, treatment outcome studies of substance abuse are warranted in the mentally retarded population.



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