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DIAGNOSIS AND ASSESSMENT OF SUBSTANCE ABUSE IN OLDER ADULTS: CURRENT STRATEGIES AND ISSUES

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Abstract — Alcohol and substance abuse in older adults until recently has received little empirical attention in the literature. However, in light of the increasing number of older adults in the population, clinicians and researchers alike are recognizing the importance of evaluating specific assessment and treatment strategies for such older substance abusers. Because distinctive biological, cognitive, and psychosocial variables appear to be correlated with substance abuse in older adults, evaluation and intervention methods employed with younger cohorts may be inappropriate or ineffective with individuals 55 and over. Our article, therefore, examines these characteristics as they pertain to the unique problems and service needs of the elderly. Relevant diagnostic and assessment strategies are reviewed. Finally, suggestions for future work in this area are outlined.

Epidemiological research conducted over the past decade indicates that alcohol and substance abuse is the third leading health problem among Americans 55 years of age and older, constituting 10% of all cases treated through geriatric mental health facilities (see Reifler, Raskind, & Kethley, 1982; Ticehurst, 1990; Zimberg, 1987). Indeed, recent surveys reveal that as many as 50% of older medical or psychiatric patients abuse alcohol (Atkinson, 1990; Gurnack & Thomas, 1989). Also, more than one-half of all medical hospital admissions are directly attributable to alcohol-related problems (Gomberg, 1982; Maletta, 1982; Zimberg, 1978b). Previous investigations (Parette, Hourcade, & Parette, 1990; Schuckit, 1977) have shown that approximately 2 to 10% of noninstitutionalized elderly persons suffer from alcohol-related problems and that 10% of all alcoholics are over 60. In contrast to earlier contentions that the percentage of abstainers increases with age (and the proportion of problem drinkers decreases accordingly), a recent review of work in this area (Atkinson, 1990) found that alcohol consumption remains at high levels later in life. This is especially true for males in their 60s and early 70s. However, because it is likely that physicians often mistake the effects of alcohol abuse for sequelae of dementia or other organic disorders (Atkinson & Schuckit, 1983; Blazer & Pennybacker, 1984), it has been suggested that such figures are underestimates. Moreover, of the estimated 1 to 3 million elderly alcohol abusers in the United States, only 15% are currently receiving any kind of treatment for the problem (Parette et al., 1990).

In one of the earliest surveys of alcoholism in older adults (Cahalan, Cisin, & Crossley, 1969), 10% of the 257 male respondents were categorized as "heavy drinkers." Because this figure approximates current lifetime estimates of 5 to 10% within the general population (Vaillant, 1983), it was concluded that prevalence of problematic drinking among the elderly was no different than use by younger persons. Similarly, Janik and Dunham (1983) found few age-related differences among alco-

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holics in treatment programs that would warrant specialized intervention for an older subpopulation. Interestingly, subjects in this study already had entered a national alcoholism treatment system. Thus, the results may fail to consider those individuals who are not in treatment, or any age-related difficulties associated with referral to the treatment system.

While illicit drug use is relatively uncommon in the elderly, it has been predicted that this problem will increase as young and middle-age addicts grow older (Kofoed, 1985). Atkinson, Ganzini, and Bernstein (1992) contend that a "cohort effect" may be responsible for the purportedly low incidence of alcoholism and substance abuse in contemporary empirical studies. Specifically, because subjects included in such investigations were historically influenced by "prohibition values" (i.e., abstinence) during the Temperance movement, obtained data offer little predictive utility concerning the substantial increase in the number of substance abusers expected as the "baby-boom" and later generations reach retirement age (Finney & Moos, 1984).

Although opioid addiction is occasionally found among the elderly, Schuckit (1977) notes that these individuals typically began illicit usage early in life and were simply able to maintain their habit into old age. While abuse of psychostimulants is infrequent among the elderly (see Atkinson & Kofoed, 1982), abuse of other prescribed medications has become more prevalent as narcotic sedatives and analgesics are frequently prescribed for geriatric ailments. Also, older females evidence greater misuse of sedative–hypnotic prescriptions, while older males are more likely to abuse alcohol or illicit substances (Atkinson et al., 1992). Because chronic pain, anxiety, insomnia, and somatization disorder are common difficulties in the elderly (Atkinson & Schuckit, 1983), such persons are more likely to consume potentially abusable prescription drugs. In fact, the elderly represent the largest consumer group of all medications, including nonprescription remedies (Abrams & Alexopoulos, 1988). Moreover, while Americans over age 60 comprise only 10% of the general population, they consume 25% of all prescription medications (Atkinson & Schuckit, 1983).

Due to financial limitations and inaccessibility to treatment providers, over-the-counter (OTC) drug usage increases with age. This is clearly reflected by findings revealing that approximately two-thirds of all individuals over 60 ingest at least one OTC medication daily (Abrams & Alexopoulos, 1988). These agents, which are inexpensive and usually perceived as relatively innocuous, may become abused inadvertently through self-medication. Also, because many liquid remedies (e.g., cough suppressants, cold preparations) contain substantial amounts of ethanol, the likelihood of synergistic effects with other medications is significantly increased (Morse, 1988). The severity of this problem is underscored by recent evidence suggesting that only one-sixth of medical patients report OTC drug usage to their physicians (Atkinson et al., 1992).

An age-related biological sensitivity to the effects of alcohol and other drugs may further contribute to substance abuse in the elderly. Atkinson and Schuckit (1983) argue that diminished physical reserve (i.e., capacity to withstand stress and maintain physiological homeostasis), coupled with increased physical infirmity, make older persons particularly vulnerable to the adverse effects of alcohol and other substances. Consequently, use of any substance can potentially complicate all aspects of the aging process, illness, and/or physical dysfunction (Pattee, 1982). Further, with advancing age, both tolerance to alcohol and efficiency of the metabolic breakdown of ethanol diminish (Gurnack & Thomas, 1989; Rosin & Glatt, 1971). As

a result, equivalent amounts of alcohol ingested by persons of disparate ages results in disproportionately elevated blood alcohol levels for older individuals (see Amodeo, 1990; Atkinson, 1990; Parette et al., 1990). The effects of this pharmacokinetics reaction are: (a) an age-related exaggeration of blood alcohol level that contributes to a lower threshold for toxicity, and (b) a greater possibility of adverse effects when combined with prescription medications (Abrams & Alexopoulos, 1988; Morse, 1988). It follows, therefore, that biological factors play an important role in substance abuse through several different routes. First, decreased metabolism of older persons may result in abuse or dependence due to decreased efficiency in liver functioning specific to the aging process (Amodeo, 1990). Second, the physiologically depressing effects of ethanol may produce reactive depression, which is subsequently ameliorated initially with continued alcohol intake. Relatedly, the synergistic effects of alcohol with other medications may reactively increase the pharmacokinetics action of psychoactive prescription medications (Atkinson & Kofoed, 1982). And finally, a form of addictive sedation can occur whereby alcohol potentiates the effects of anti-anxiety, antidepressive, or other sedative–hypnotic drugs commonly used by older adults (Morse, 1988).

While recent investigations have contributed much to the heightened awareness of alcohol and substance abuse problems in the elderly, the heuristic value of extant diagnostic and assessment strategies for this population has been questioned (Curtis, Geller, Stokes, Levine, & Moore, 1989; Graham, 1986). The relative absence of clinical guidelines is largely attributable to a lack of empirical studies specifically targeting alcohol and other substance abuse problems in the elderly (see discussion by Atkinson & Schuckit, 1983). Because presentation of substance abuse among older persons can differ significantly from such problems in younger counterparts, it has been argued that current clinical approaches may be inadequate for accurate evaluation of substance abuse in the elderly.

The purpose of this article is to review and critically evaluate diagnostic and assessment strategies that have been employed with older adults who abuse alcohol and other drugs. Elderly-specific classification problems are discussed with respect to current diagnostic criteria, and the relative applicability of existing assessment measures is examined.

DIAGNOSIS

Current DSM-III-R diagnostic criteria

Alcohol and substance abuse problems are classified by the *Diagnostic and Statistical Manual of Mental Disorders*-3rd ed., revised (DSM-III-R; American Psychiatric Association, 1987) as disorders of either psychoactive substance *dependence* or *abuse*, depending primarily on the existence of a characteristic tolerance/withdrawal syndrome. Diagnosis of psychoactive substance dependence is contingent on the presence of two symptom clusters. First, the individual must demonstrate at least three of the following: (1) use of a substance in larger amounts or over a longer period of time than originally intended; (2) persistent desire or unsuccessful attempts to reduce or control usage; (3) excessive time spent obtaining, using, or recovering from the effects of the substance; (4) frequent intoxication or withdrawal symptoms when expected to fulfill major role obligations at work, home, or school; or when usage is physically hazardous (e.g., driving while intoxicated); (5) disruption in important social, occupational, or recreational activities because of substance usage;

(6) continued ingestion despite knowledge that a problem exists; (7) marked tolerance as defined by at least a 50% increase in dosage to achieve similar effects (or markedly diminished effect with usage of same amount); (8) characteristic withdrawal symptoms; (9) use of substances to relieve withdrawal symptoms. Second, some symptoms of the disturbance must have persisted for at least 1 month or have occurred repeatedly over a longer period of time.

By contrast, the diagnosis of psychoactive substance abuse is based on: (1) maladaptive substance use (i.e., continued usage despite knowledge that a problem exists and/or recurrent hazardous usage such as driving while intoxicated), and (2) persistence of symptoms for at least 1 month, or repeated patterns over a longer period of time. Additionally, in order to warrant a diagnosis of psychoactive substance abuse, the individual must never have met criteria for psychoactive substance dependence.

Relevance of current diagnostic criteria for older adults

Since DSM-III-R was standardized primarily on younger age groups, several theorists (e.g., Atkinson, 1990; Hartford & Thienhaus, 1984) have asserted that these diagnostic criteria may not be pertinent or appropriate for older individuals. For example, criteria concerning social and occupational dysfunction may not be applicable to the elderly due to retirement and familial losses that occur as one ages. Similarly, diagnostic criteria based solely on adverse social consequences may be inadequate because the elderly are less likely to be employed, married, or involved in legal altercations (Atkinson & Schuckit, 1983). Also, overt signs of tolerance or withdrawal may go largely unnoticed because certain environmental contingencies (e.g., occupational performance, academic standing) conducive to abstinence are no longer relevant (Finney & Moos, 1984). In light of these weaknesses, Atkinson (1990) has suggested lowering the number of criteria required for the diagnosis in older persons (i.e., fewer than *three* of the nine criteria). Also, Hartford and Thienhaus (1984) posit that greater attention be directed to the older individual's *pattern* of usage (i.e., quantity and frequency of consumption). This type of diagnostic information may be unavailable, however, if clients lack significant others who can corroborate their self-reports (Beresford, Blow, Brower, Adams, & Hall, 1988).

Zimberg (1974) redefines alcoholism in the elderly based on the existence of alcohol-related problems in one's family or social relationships, rather than on the amount or frequency of consumption. While disturbances in physical or mental health may also be present to some degree, Zimberg claims that infrequent intoxication coupled with drinking-related interpersonal dysfunction is the hallmark of problem drinking in older alcoholics (Zimberg, 1978a).

Atkinson and Schuckit (1983) contend that a diagnostic distinction should be made between substance "misuse" and abuse in older adults. Misuse refers to taking a substance for indications other than those prescribed. While such behavior may be inadvertent (e.g., inconsistent medication regimen due to memory deficits), these investigators note that the problem is widespread among the elderly.

Blazer and Pennybacker (1984) argue that the historical underestimation of alcohol problems in the elderly can be attributed to: (1) use of inconsistent criteria across studies for defining problem drinking, (2) differences in data collection methods, and (3) diversity among populations sampled. Although quantity and frequency of consumption are useful variables for identifying younger problem drinkers, Ticehurst (1990) cogently states that older alcoholics present a dissimilar use pattern because

they tend to consume smaller amounts of alcohol. In addition, as noted earlier, the quantity of alcohol or other substances necessary to produce impairment is substantially less for older adults (Brody, 1982). Overall, it appears that many DSM-III-R diagnostic criteria are inadequate for the elderly. As such, recent alcohol and substance abuse research has sought to identify variables that are particularly salient to this population.

Early versus late onset drinking

Considerable investigative attention has been directed to the onset of substance abuse in older adults (see Rosin & Glatt, 1971; Schonfeld & Dupree, 1991; Zimberg, 1978a). Early-onset alcoholism refers to drinking problems that began prior to age 60; late-onset alcoholism characterizes persons with no previous history of maladaptive drinking until after that age (Schonfeld & Dupree, 1991). However, empirical definitions of early- and late-onset have varied considerably, as earlier theorists (e.g., Atkinson & Schuckit, 1983; Atkinson, Turner, Kofoed, & Tolson, 1985) dichotomized subtypes using age 40 as a cutoff for first-reported alcohol problems. A recent examination of differences between early- and late-onset alcohol abusers in an outpatient alcohol treatment program for older male veterans (aged 60 years and older) revealed several noteworthy findings (Atkinson, Tolson, & Turner, 1990). First, nearly one-half of the subjects (n = 132) reported an onset of problem drinking after age 45, with 29% after age 60. Assuming that lifetime prevalence rates of alcoholism (5 to 10% in the general population) are applicable to the elderly, this suggests that approximately one-third, or 700,000 older problem drinkers may be classified as late-onset alcoholics (Atkinson, 1990; Beresford et al., 1988; Ticehurst, 1990; Zimberg, 1978a). However, alcohol problems among late-onset subjects were milder and more circumscribed than in the early- or mid-onset individuals, with less evidence of familial alcoholism.

In contrast, early-onset subjects were characterized by greater involvement in self-help groups, alcoholism treatment programs, and the criminal justice system, thus reflecting a more severe course. Of particular significance is the finding that 90% of late-onset drinkers were court-ordered to treatment following "driving-while-impaired" (DWI) arrests; earlier-onset subjects were typically referred by friends or family members. As expected, problems that frequently characterize younger substance abusers (e.g., vocational and familial maladjustment) were less prevalent within this sample of older persons.

In an effort to identify specific antecedents to late-onset problem drinking, Schonfeld and Dupree (1991) hypothesized that both early- and late-onset individuals report negative emotional states preceding their first drink. However, the former group demonstrates more severe emotional and drinking problems, as well as decreased motivation for treatment (reflected by higher attrition rates). These investigators divided equally a sample of 46 elderly persons (matched for age and gender) into early- or late-onset groups on the basis of a history of alcoholism treatment or weekly intoxication either before or after age 50. All subjects completed self-report measures of drinking behavior, and social and emotional functioning. Results showed that both groups: (1) typically drank at home in a solitary manner on a daily basis, (2) consumed equal amounts of alcohol on a similar number of days per month, (3) had about the same levels of social support, (4) had similar expectations of success and attrition rates, and (5) exhibited depressive symptoms (general despondency and loneliness) prior to their first drink. Early-onset subjects, however, re-

ported slightly greater affective instability and withdrawal symptoms (e.g., delirium tremens, severe inner shakes, sweating). Also consistent with previous investigations (Atkinson et al., 1985, 1990), late-onset subjects reported higher levels of psychological stability and life satisfaction than their early-onset counterparts. In contrast to the aforementioned findings of Schonfeld and Dupree (1991), however, Atkinson and Schuckit (1983) contend that although late-onset alcoholics may in fact have as many as 4 to 5 drinks per occasion, early-onset individuals demonstrate a more frequent and heavier pattern.

Additional diagnostic considerations

Diagnosis of alcohol and substance abuse in older adults has been complicated by several additional factors. One of these is the long-held myth that young addicts either die or "outgrow" their addiction (Winick, 1962). However, this contention simply has not received empirical support (Kofoed, 1985). Parette et al. (1990) note that two other factors are responsible for the historical inadequacies in diagnosis of geriatric alcohol and substance abuse. First, if elderly persons are genuinely unaware that a problem exists, their entry into the mental health system will be delayed until secondary problems (e.g., depression, anxiety) emerge. When such difficulties are evident, clients may not attribute them to alcohol or other substances, and thus neglect to report usage to treatment professionals (Blazer & Pennybacker, 1984). Second, amnesic episodes or anergia may be erroneously accepted as "normal" aspects of aging rather than as consequences of alcohol abuse. When symptoms are especially subtle or infrequent (e.g., mild disorientation, periodic memory loss), family members may ignore the behavior or discount it as age-related. Yet, while memory loss, confusion, and muscle uncoordination are stereotyped "normal" characteristics of older persons, these symptoms are also common indices of alcohol abuse. Further, even when family members recognize a problem, they may deny its existence or inadvertently collude with the client out of their own feelings of shame or embarrassment (Atkinson & Schuckit, 1983; Ticehurst, 1990). Individuals who have been abusing alcohol or other substances for an extended period of time may also become estranged from their families and thus further distanced from potential assistance and/or referral sources.

CORRELATES AND RISK FACTORS

In an effort to identify specific correlates and risk factors associated with substance abuse in older adults, recent investigations have assessed the relative contribution of: (1) age-related physical/biological correlates, (2) cognitive factors, (3) social influences, and (4) psychiatric or comorbid pathology. Although limited sample sizes and the absence of replication studies compromise the overall utility of empirical results, several findings are relevant.

Physical/biological

As mentioned earlier, older persons evidence increased sensitivity to the effects of many psychoactive substances, which can foster maladaptive patterns of substance use. Therefore, formulation of an accurate diagnosis of alcohol and drug abuse in older adults is complicated by the variety of presenting physical problems evident in this population (Ruben, 1992). While chronic medical conditions, repetitive injuries, and acute somatic distress characterize many elderly individuals who seek treat-

ment, such factors should not necessarily be given primary consideration because identical manifestations can result from an underlying substance use problem (Ticehurst, 1990). Consequently, a comprehensive assessment must be conducted to ascertain the role of substance abuse or dependence in other extant pathologies. For example, specific details as to related symptoms, such as gastrointestinal distress or frequent falls, should be elicited in order to better assess the relative contribution of alcohol or drugs to such dysfunction (Morse, 1988). Consequently, increased biological sensitivity and age-related medical illnesses may heighten the risk of substance abuse in older adults.

Risk factors that have been identified for benzodiazepine abuse include a prior history of sedative drug addiction, historical or current alcoholism, chronic insomnia (rather than anxiety) as justifying the prescription, and coexisting chronic illness (American Psychiatric Association, 1990). Relatedly, the most commonly reported reasons for long-term benzodiazepine usage are pain and insomnia (Finlayson, 1984). Atkinson et al. (1992) further point out that chronic undiagnosed depression may predispose individuals to long-term benzodiazepine abuse and dependence in later life. Consequently, the longer the depression remains undiagnosed, the longer such persons will continue to receive additional prescriptions.

Few adverse signs or symptoms are observed in low-dose benzodiazepine dependence (unless these agents are abruptly discontinued and withdrawal occurs). Rather, behavioral hallmarks are evidenced whereby addicted persons demonstrate *persistence* to ensure that a steady supply of the drug is maintained (Atkinson et al., 1992). In contrast, high-dose dependence is typically identified in persons who consume a variety of similarly acting agents that may be prescribed by several unknowing physicians. Again, prescriptions are typically indicated for the amelioration of insomnia, although many elderly benzodiazepine abusers also have a history of prior alcoholism or drug addiction (American Psychiatric Association, 1990). When toxic reactions occur, behavioral manifestations generally include ataxia, increased reaction time, and oversedation, which can subsequently foster a greater vulnerability to falls and fractures (Wattis, 1981). In summary, a differential diagnosis of benzodiazepine dependence should be considered whenever patients present with poorly explained sedation, incoordination, depression, deteriorating cognitive status, or acute confusional states (associated with withdrawal).

Because physical fragility is commonly associated with the aging process (Amodeo, 1990), safety risk factors must also be considered in cases of elderly alcohol and substance abuse. Decreased reaction time and increased balance and coordination problems contribute to a greater incidence of accidents among older persons in general. However, when combined with the effects of alcohol or medication abuse, these difficulties are exacerbated and lead to a disproportionate likelihood of injury, medical complications, or death. In fact, Wattis (1981) found that a history of repeated falls was significantly associated with underlying alcohol abuse in psychiatric patients whose presenting complaints did not reflect any overt substance use disorders. Results of this study also showed that older alcoholics demonstrated more confusion, self-neglect, and malnutrition. However, a recent investigation (Nelson, Sattin, Langlois, DeVito, & Stevens, 1992), which utilized a larger sample, found no relationship between injury events (e.g., falls) and average weekly alcohol use. Thus, while an underlying drinking problem should be considered when elderly patients present with a history of falls, such history may not be a cardinal feature of alcoholism in older persons.

Further diagnostic complications can occur when elderly patients use prescribed medications for medical conditions in combination with alcohol. In addition to potentiating adverse side effects or risking overdose through pathological sedation, elderly problem drinkers may forget to take a needed medication, thus leaving medical conditions untreated; or they may forget that the medication was ingested and take it too frequently. Some elderly clients may even consciously choose not to take their medications due to adverse side effects, such as lethargy or dysphoria. Also, because the variety of somatic conditions evinced by elderly patients frequently warrants treatment from disparate medical specialists, the number of sources from which potentially addictive substances can be obtained is greatly expanded. Further, it is apparent that coordination of efforts among various service providers (e.g., general practitioners, psychiatrists, psychologists) to assess for alcohol or substance abuse problems is rare (King, Alpeter, & Spada, 1986).

Cognitive

While severe cases of dementia associated with alcoholism are rarely encountered in clinical practice, milder forms of intellectual impairment are quite common among older alcoholics (American Psychiatric Association, 1987). Moreover, previous investigators (Freund, 1982; Kleinknecht & Goldstein, 1972) found that alcohol accelerated cognitive deterioration (e.g., intellectual decline, memory loss) associated with normal aging. While some question remains as to the potential reversibility of such dysfunction, it is clear that elderly problem drinkers are likely to evidence an exaggerated deterioration in memory and abstract reasoning skills (Atkinson & Kofoed, 1982; Chelune & Parker, 1981). Relatedly, although elderly alcoholics demonstrate compromised performance on neuropsychological tests, such impairment is difficult to distinguish from "normal" cognitive deficits associated with the aging process (Beresford et al., 1988).

Social

Inadequate social support systems and networks, marital disruption, and social isolation all have been related to elderly substance abuse (Gurnack & Thomas, 1989). Loss of specific social reinforcers (e.g., death of a spouse or close friend) can further contribute to depressive symptomatology (Rosin & Glatt, 1971). Thus, increased social isolation, greater idle time, and absence of significant others can place older individuals at risk for alcohol and substance abuse. In reaction to such events, a previously non-substance-abusing individual may substitute use of a reinforcing (albeit maladaptive) substance to diminish feelings of loss and despair. In fact, an early survey of problem drinking within a residential community found that elderly widowers had a greater incidence of alcoholism than any other age group or subpopulation (Bailey, Haberman, & Alksne, 1965). Atkinson and Schuckit (1983) further characterize the elderly alcoholic as leading a solitary and transient existence with a history of interpersonal difficulties. However, in contrast to younger problem drinkers, these investigators note that older alcoholics display fewer total life problems at one time.

Atkinson et al. (1990) discuss several social antecedents that have an etiologic role in late-onset drinking. First, as with younger alcoholics, a family history or prior personal history of substance abuse is significantly correlated with substance abuse in older adults. Second, late-life stressors, such as retirement or death of a spouse, create significant life changes to which the elderly person must adjust. Further, the

additional idle time of many retired adults increases the likelihood of substance abuse to reduce feelings of boredom and social isolation (Ruben, 1992). In contrast, however, Folkman, Bernstein, and Lazarus (1987) found that only a small proportion of elderly individuals display this type of compensatory substance abuse in response to age-related adjustment problems (e.g., retirement, coping with the death of a spouse). Additionally, while the maladjustment of many retirees would seemingly contribute to onset of addictive behavior, few individuals become problem drinkers at that time (Atkinson & Schuckit, 1983). Although the concept of *reactive drinking* (i.e., drinking in response to specific late-life stressors) seems quite plausible, little empirical support exists for this notion (Atkinson, 1990). Consequently, the role of environmental stressors in substance abuse among older adults remains questionable.

Psychiatric

Presentation of multiple difficulties/symptoms or comorbid disorders may further misdirect clinicians toward more easily diagnosed problems while subtler signs of substance abuse are largely ignored. Indeed, alcohol can mimic the symptom presentation of almost every psychiatric disorder (Atkinson & Schuckit, 1983). For example, irritability and depression caused by alcohol abuse may be quite difficult to distinguish from an independent affective disorder. Depression, in fact, is the most commonly diagnosed disorder among older Americans, afflicting approximately 15% of the elderly population in the United States (Pfeiffer, 1977). As with younger persons, pre-existing psychiatric conditions (e.g., depression, anxiety) correlate highly with problem drinking in older adults. In addition, approximately 20% of older alcoholics misuse other drugs (Atkinson & Schuckit, 1983). And although the consequences of alcohol abuse can instigate or exacerbate affective disturbance, uninformed service providers may actually perpetuate the patient's maladaptive behavior by focusing on the depressive effects rather than on antecedents of the disturbance. In light of the aforementioned, it is not surprising that current estimates suggest that nearly 85% of geriatric patients with alcohol problems receive no treatment for this disorder (Blazer & Pennybacker, 1984; Parette et al., 1990).

Christopherson, Escher, and Bainton (1984) examined reasons for drinking among a large sample of elderly males and females. Although light to moderate drinkers endorsed generally positive and socially acceptable explanations for such use (e.g., during holidays and special occasions, or to increase sociability), heavy drinkers cited reasons more directly associated with the amelioration of depressive symptoms. In contrast to the stress-reactive hypothesis, however, *coping* responses (with respect to specific stressors) were not commonly endorsed. Rather, the majority of respondents reported that they drank to feel happier, forget problems, and enable sociability. Although a directional cause–effect relationship has yet to be firmly established between alcoholism and depression in the elderly, physical deterioration and personal losses encountered in late life may potentiate affective dissonance as well as ameliorative self-medication (Snyder, 1977). Such factors can be particularly salient in cases of late-onset alcoholism, where identifiable stressors are more easily recognized as precipitating the abuse of alcohol (Atkinson et al., 1990).

In a similar manner, negative life events and poor social relations have been implicated as precipitating major depressive episodes among community-dwelling elderly persons (Blazer, Hughes, & George, 1987). Subjects who evidenced depressive symptomatology also were more likely to use benzodiazepines and complain of

physical health problems. By combining age-related stressors, affective dissonance, and ready access to "self-curative" psychotropic agents, the potential for maladaptive substance use is magnified. (See review by Speer, O'Sullivan, & Schonfeld [1991] for further discussion of dually diagnosed older adults.)

ASSESSMENT

At present, no single screening instrument has been sufficiently validated for assessing substance abuse in the elderly (Atkinson et al., 1992). While the aforementioned DSM-III-R criteria provide a reasonable guideline for acquiring information necessary to establish a diagnosis, the relevance and clinical utility of this classification scheme for older adults have yet to be firmly established.

Few investigations have attempted to develop and standardize assessment instruments specifically for use with this population. Rather, most researchers have used divergent and loosely defined diagnostic criteria based predominantly on subjects' self-reports and subjective clinical impressions. Or, existing devices, originally designed and validated for younger populations, have been employed to detect alcohol problems in the elderly. In the absence of elder-specific instruments, the utility of measures that have been used with older adults is discussed below.

MAST

The Michigan Alcoholism Screening Test (MAST) (Selzer, 1971) is a true/false inventory consisting of 25 questions about alcohol consumption and ensuing adverse consequences. Because items are differentially weighted, summary scores can range from 0 to 50, with higher scores reflecting greater severity of the disturbance. In general, cut-off scores ranging from 5 to 7 have been suggested for differentiating problem and nonproblem drinkers (Morey & Martin, 1989). In validation studies with younger populations, sensitivity and specificity for the MAST ranged between 84 and 100% (Moore, 1972; Selzer, 1971). Additionally, two briefer versions of the MAST, the 10-item Brief MAST (B-MAST) and 13-item Short MAST (S-MAST), have been shown to have acceptable correlations with the full-length version (see Zung, 1979).

Willenbring, Christensen, Spring, and Rasmussen (1987) investigated the validity of four versions (MAST, U-MAST, B-MAST, S-MAST) of the Michigan Alcohol Screening Test for identifying alcohol abuse and dependence among 52 elderly males (mean age = 64.6 ± 2.8 years) hospitalized in a Veterans Administration substance abuse treatment program. A second group of 33 elderly males (mean age = 66.3 ± 4.9 years) hospitalized for non-alcohol-related reasons served as control subjects. Using a cut-off score of 6 or greater, the full 25-item MAST correctly classified all of the experimental subjects and 90% of the controls. With a cut-off of 5, sensitivity was preserved at 100%, but specificity dropped to 83%. When weighted-scoring (U-MAST) was employed with a cut-off score of 3, sensitivity and specificity were 96% and 86%, respectively. However, with a cut-off score of 5, detection of true positives improved to 96%, while specificity was slightly reduced to 93%.

The 10-item Brief MAST (B-MAST) had a sensitivity of 91% and a specificity of 83% using a cut-off of four or more positive responses. With a more stringent cut-off of 6, the B-MAST gained substantial specificity (100%), albeit at the expense of sensitivity (82%). Similarly, the Short MAST (S-MAST), correctly identified 98% of alcoholic subjects using a cut-off score of 2, but had an unacceptably high rate of

false positives (sensitivity = 72%). With this particular sample of inpatient males, therefore, the MAST demonstrated excellent sensitivity and specificity for detecting alcohol abuse and dependence when a cut-off score of 6 or more was used. Because the B-MAST was less sensitive than the full 25-item MAST, it is recommended that screening measures include the latter version despite the slightly greater amount of time required for administration.

CAGE

The CAGE (Ewing, 1984) is another brief alcohol screening measure which consists of four questions: (1) "Have you ever felt you should cut down on your drinking?" (2) "Have people annoyed you by criticizing your drinking?" (3) "Have you ever felt bad or guilty about your drinking?" and (4) "Have you ever had a drink first thing in the morning to steady your nerves or to get rid of a hangover (eye-opener)?" In validation studies with nonelderly patients in clinical (Mayfield, McLeod, & Hall, 1974) and general medical populations (King, 1986), sensitivity and specificity for the CAGE ranged from 84 to 89%, and 95 to 100%, respectively.

Buchsbaum, Buchanan, Welsh, Centor, and Schnoll (1992) examined the ability of the CAGE to identify elderly medical outpatients with drinking problems by employing a cross-sectional design with the alcohol module of a structured interview schedule as the diagnostic criterion standard. Of 323 general medical patients (aged 60 or older) evaluated, 33% (n = 106; 63% of the males and 22% of the females) were identified as having drinking problems as assessed by DSM-III criteria. The sensitivity and specificity of the CAGE was 86 and 78%, respectively, when a cut-off of 1 was used. With a cut-off score of 2, sensitivity dropped to 70% but specificity improved to 91%. Consequently, the investigators recommend flexibility in determining cut-off scores with regard to the expected prevalence of alcoholism within a given population. For example, in this sample of medical outpatients, alcohol problems are more common than in other populations. Thus, a less stringent cut-off of 1 can be effectively employed when screening elderly medical patients, while a score of 2 may be more appropriate for nonmedical settings.

A recent investigation by Tabisz et al. (1991) examined utility of both the Brief MAST (B-MAST) and the CAGE in screening for substance abuse among 493 elderly persons admitted for emergency room treatment. In addition, they developed the Manitoba Drug Dependency Screen (MDDS) to examine behaviors that were believed to coexist with substance abuse. Specific factors included receiving medications from more than one physician or pharmacy, a desire to do without medications, and a perception of tolerance to a given medication. Results of the screening measure were further compared with urine specimens to detect opiate, benzodiazepine, or barbiturate metabolites. While the B-MAST and CAGE were highly correlated (r = .41, $p < .001$) in assessment of alcohol abuse, Tabisz et al. (1991) found that sensitivity remained unchanged when the former instrument was eliminated from the screening battery. Also, the correlation between urine screens and the MDDS was strong (r = .31, $p < .001$), although the latter was found to be a more time- and cost-effective strategy.

In a study examining the ability of physicians and other medical professionals to accurately diagnose alcoholism among both elderly and nonelderly persons, Curtis et al. (1989) compared scores on the CAGE and Short MAST (S-MAST) with clinical impressions from physicians' diagnostic interviews. Subjects consisted of 178 elderly and 239 nonelderly general medical patients. Using S-MAST and CAGE cutoff

scores of 5 and 2, respectively, 102 of the total 417 patients examined were identified as alcoholic. Interestingly, prevalence rates for elderly (21%) and nonelderly alcoholics (27%) were not significantly different. In comparison to screening measures, however, medical residents were able to accurately diagnose 60% of the nonelderly as alcoholic, but correctly identified only 37% of the elderly alcoholics. Similarly, faculty physicians identified only 45% of the nonelderly and 27% of the elderly patients who screened positive for alcoholism on the CAGE and S-MAST. In addition to illustrating the potential fallibility of sole reliance on clinical impressions for identifying elderly alcoholics, results of this study provide further validation for the utility of the CAGE and MAST in detecting alcohol problems in older persons.

MMPI

Atkinson et al. (1985) administered the Minnesota Multiphasic Personality Inventory (MMPI) to a sample of 36 older adults admitted to a VA outpatient alcohol treatment program. Subjects were further divided into early-onset (n = 14 males; mean age = 58.3 years) and late-onset (n = 19 males and 3 females; mean age = 61.9 years) groups depending on whether subjects reported problem drinking originating before or after age 40. Compared to late-onset subjects, early-onset individuals evidenced a greater history of alcohol-related criminal offenses and incarceration, as well as significantly elevated MMPI profiles (scales 1, 3, 4, 7, 8, 9). However, MacAndrew Alcoholism Scale (MAC) scores were comparable for both groups, and reflected a primary rather than secondary course of the disorder. These findings suggest that early-onset elderly alcoholics may be identified by greater psychological instability as assessed by objective measures. Further, the MAC scale of the MMPI appeared to have acceptable sensitivity for detecting alcohol abuse within an elderly population.

SUMMARY AND FUTURE DIRECTIONS

Alcoholism and substance abuse among older adults is an increasing problem with far-reaching social, physical, and psychiatric consequences. At present, however, the diagnostic criteria stipulated by DSM-III-R are inadequate for identifying substance abuse within elderly populations, and may be largely attributable for the historic underestimation of the problem. Therefore, an improved diagnostic schemata is needed to better encompass the unique presentation of alcohol and substance abuse in older individuals. Further, diagnostic variables specific to the elderly need to be identified so that objective, operationalized diagnostic criteria can be elucidated. Although evidence from recent investigations has demonstrated appreciable differences between early- and late-onset elderly alcoholics, most of these studies examined only a small number of persons from restricted populations (e.g., medical inpatients). Consequently, further research is needed to validate these diagnostic factors in large-scale investigations with more diverse samples.

While physical, cognitive, social, and psychiatric correlates appear to have etiologic significance in elderly alcohol and substance abuse, the precise contributions of each have yet to be determined. Further investigation in this area will undoubtedly clarify diagnostic precision, as well as lead to more appropriate treatment considerations. (See review by Segal, Van Hasselt, Hersen, & King [in press] for further discussion of treatment strategies with elderly substance abusers.) Although the previously mentioned diagnostic correlates offer some utility in the assessment of

alcohol and substance abuse in older adults, no clear indicators are presently recognized as universal hallmarks. As a result, future efforts in this area must attempt to assess the relative contribution of other relevant variables in order to better identify pathognomonic signs and prominent risk factors.

Similarly, the need for elderly-specific assessment measures in detecting alcohol and substance abuse is underscored. While existing instruments, such as the MAST and CAGE, recently have been validated in older subpopulations, the appropriateness of these measures for varying clinical settings (e.g., general medical, inpatient psychiatric, outpatient community) is uncertain. With respect to assessment, therefore, three major concerns are evident: (1) existing instruments must be specifically validated with older clinical populations; (2) elder-specific alcohol and substance abuse measures must be constructed and appropriately validated; (3) discriminant analytic studies are needed to identify correlates and risk factors that are particularly salient to elderly substance abuse. In addition, the need for drug-abuse instruments specific to older adults is underscored, given the current prevalence of illicit drug use among older adults, and the predicted increase of this problem in the future.

Despite the diagnostic inadequacies and paucity of suitable assessment measures for alcoholism and substance abuse in the elderly, however, some general comments seem warranted. First, symptom onset after the age of 60 occurs for approximately one-third of elderly alcoholics. Second, a wide fluctuation in symptoms over time is typical (in contrast to more consistent patterns in younger substance abusers). And finally, a greater level of associated medical, psychiatric, and social dysfunction is expected in comparison to nonelderly persons. As such, a comprehensive clinical assessment of relevant risk factors, collateral information, and findings from alcohol and substance abuse inventories is necessary to determine the existence of addictive behavior in elderly clients. Furthermore, clinicians and other health professionals need to become more aware of the scope of the problem and gain a better understanding of relevant symptomatology to aid in early detection and referral for appropriate treatment.

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