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This paper reviews the literature and presents some new data on alcohol and drug problems in older individuals. Drug abusers include users of opiates (5% of opiate addicts are over age 45), inadvertent drug misusers (over or under use of prescription medications), and deliberate abusers of nonopiates (especially anti-anxiety drugs, hypnotics, analgesics, laxatives, and bromides). Two to 10% of the elderly are alcoholic, and these are usually individuals beginning alcohol abuse after age 40. The importance of these findings regarding treatment and etiology are discussed.

Geriatric Alcoholism and Drug Abuse

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Substance abuse among the elderly, while common, is frequently overlooked. The purpose of this paper is to review existing knowledge in this area and add some new clinical data for both alcohol and drug abuse. For convenience, the two types of substance abuse will be discussed separately with drug abuse further subdivided into opiate and nonopiate drugs.

Opiates—Background

There are few studies which center on the elderly opiate users. While many addicts die young (Capel, Goldsmith, & Waddell, 1972) and as many as one-third of the survivors "mature out" of their addiction by age 50 (Snow, 1973; Winick, 1962, 1964), older addicts do exist, and it is possible to make some generalizations about their characteristics.

It has been estimated that 5% of methadone maintenance patients are age 45 or older (compared with 49% of the comparable population in the cities studied), with 27% at least age 35 (Capel & Stewart, 1971). One per cent of individuals in methadone maintenance treatment are over age 60 (Pascarelli, 1974; Pascarelli & Fischer, 1974), with even higher rates among addicts who find medical treatment in hospitals (White, 1973). As is true in most addiction populations, it is probable that identified cases only represent the "tip of the iceberg," as it has been shown that the more treatment is available, the more individuals come for therapy (Subby, 1975). Part of the problem in identification comes from the fact that, in general, the elderly are not arrested or prosecuted for minor crimes, since they tend to be rather isolated, well hidden by their families, and are only reluctantly taken in to the criminal justice system by the police (Bergman & Amir, 1973).

The predominance of young addicts has not always been the rule. In Britain in 1959 and 1960, 61% of the registered addicts were age 50 or over (Bean, 1974). It was not until the mid to late 1960s that the high percentage of elderly (many of whom had been medically addicted) gave way to the epidemic of opiate abuse among the young with subsequent percentages of those over age 50 dropping to 8% by 1969 (Bean, 1974). In the United States, a similar phenomenon occurred as evidenced by a report showing that the average age of individuals in treatment for opiate abuse in Lexington, Kentucky, in the early 1940s was 39 years (Winick, 1962). Considering the fact that young addicts must grow old (unless they die or give up their drug abuse), one can expect that the number of addicts in their 50s and 60s will increase with time as those addicts who entered the addiction subculture in the 1960s grow older (Phillipson, 1976).

Naturally, the clinical picture of the elderly addict differs in some ways from that of his younger counterpart. Several studies have described the demographic backgrounds of older addicts as being about age 60 at the time of study, with an average of 35 years of abuse behind them (Ball & Urbaitis, 1970; Capel et al., 1972). It is likely to have been a number of years since their last arrest, but prior police problems are the norm, with an average of three prison terms for each addict (Capel et al., 1972). Most older addicts have had some sort of experience with treatment (a mean of 24 admissions in one Lexington, Kentucky, sample) (Ball & Urbaitis, 1970).

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Related to a variety of factors, their use of drugs is less frequent than is true for the younger addict (less than 5% used daily) (Capel et al., 1972), and the amount imbibed appears to be lower. In addition, they are more likely to seek out drugs other than heroin for use, in part because of the lower level of impurities and the greater chance of a standardized strength (and thus lower level of physical danger) as well as the ability to take these drugs orally. The result in one sample was that almost two-thirds of a group of elderly addicts reported using diluadid, 8% morphine and 8% codeine, with only 19% using heroin (Ball & Urbaitis, 1970; Capel et al., 1972). Another major reason given by the elderly addict for seeking out drugs other than heroin is his inability to "hustle" as well by stealing, resulting in a lower income, which necessitates compromises on drugs of choice (Capel, et al., 1972; Pascarelli & Fischer, 1974). Perhaps reflecting their preference for synthetic opiates and/or their decreased frequency and quantity of drugs, older addicts are less likely to overdose (Bergman & Amir, 1973; Capel et al., 1972).

In some ways, the elderly opiate abuser does resemble the younger. Both groups are very likely to obtain their drugs from a pusher (only 13% of the older addicts ever get their drugs from physicians) (Capel et al., 1972). In addition, there is a tendency for both groups to have never been married—39% in one sample of elderly, with only 1 among 38 addicts being married and living with their spouse.

The data tend to indicate that the older opiate abuser is the younger addict who survived into senior years. However, the reported samples took individuals who had been identified via treatment centers, and it may be that there is another group of older addicts who began after the age of 50, as is shown below regarding new data. At the present time there is little good data on this possible subgroup and more needs to be gathered.

As one might estimate from the differences in background between younger and older opiate abusers, it has been conjectured (without much data) that the elderly opiate addict has unique treatment requirements. It makes sense that the older drug abusers will be medically sicker (Pascarelli, 1974; White, 1973), and thus will have greater treatment needs for both medical care and housing supports.

There is indication that health problems may be even worse in the 20% who also abuse alcohol (Capel & Stewart, 1971) and the 60% who seek out ancillary drugs like Valium, Elavil, and cocaine (Pascarelli & Fischer, 1974), as well as barbiturates (Capel & Stewart, 1971; Capel et al., 1972). Despite their increased treatment needs, slower life style, and lower rate of crimes, along with the public attitudes toward the elderly, give them a greater degree of camouflage than may be true for the younger addict (Subby, 1975).

It has also been reported that the older addict is very unlikely to give up his drug and not at all happy about accepting methadone detoxification once methadone maintenance has begun (Capel et al., 1972). Other authors agree but still recommend methadone maintenance as the most acceptable of all treatments for actively abusing elderly addicts (Glick, 1974; Pascarelli & Fischer, 1974). In addition, there seems to be a general trend for outpatient treatment for the elderly addict with a program located out in the community—a program which can be at least in part justified by the perception that with their decreased levels of energy, the elderly addicts may be less of a threat to society than the younger ones (Capel & Stewart, 1971; Subby, 1975). It does not appear that prison is likely to benefit the addict, and there is some evidence that elderly individuals placed in a prison setting are likely to become abused by younger inmates (Bergman & Amir, 1973).

Nonopiates—Background

This topic covers a heterogeneous population, some of whom are deliberately engaging in substance abuse and others who do so inadvertently.

Inadvertent abusers are those individuals who, perhaps through confusion, do not take their drugs as prescribed and end up encountering an adverse drug reaction. The elderly, due to their decreased physical reserve, are twice as likely to react adversely to medications in even normal doses (Cooper, 1975; Exton-Smith, 1967; Glick, 1974; Raskind & Eisdorfer, in press) and to experience side effects from a wider variety of medications than is true in younger populations (Morrant, 1975; Shader, 1972).

Another area of inadvertent abuse may be

a side effect of the tendency of older individuals to gather together in the same housing. As one part of this phenomenon, they tend to share drugs and to hoard medication in medicine cabinets, including some which have expired and should have been discarded (Raskin & Eisdorfer, 1976; Subby, 1975).

These findings result in part from the fact that persons age 55 or older are the largest consumers of legal drugs (Pascarelli & Fischer, 1974), receiving annually over 225 million prescriptions, including almost 180 million for mood-altering drugs (Pascarelli & Fischer, 1974; Swanson, Weddige, & Morse, 1973). The great majority of these scripts are warranted (Geriscope, 1972), but there is a strong need to educate physicians in training and those in practice against the use of multiple drugs (Gibson & O'Hare, 1968; Morrant, 1975). An additional problem comes from the tendency of elderly individuals to mix prescribed medications with over-the-counter drugs or with alcohol—a problem which will require both public education and prompting of physicians to increase the level of warning to older patients. The chance of a patient's reacting adversely to a medication increases with the number of drugs he takes (Gibson & O'Hare, 1968; Hemminki & Heikkila, 1975; Plutchnik, McCartley, & Hall, 1973) and with the complexity of the prescription direction (Gibson & O'Hare, 1968; Petersen & Thomas, 1975).

Some older individuals seek out drugs to abuse, tending to get their medication from a variety of sources (Pascarelli & Fischer, 1974; Plutchnik et al., 1973; Swanson et al., 1973). The most frequently abused drugs in older patients are sleeping pills like barbiturates (Subby, 1975; Swanson et al., 1973) and those we usually do not associate with abuse in younger populations—drugs such as laxatives (Cummings, Sladen, & James, 1974) and aspirin compounds (Morrant, 1975). Surveys in both Australia and the United States have shown that the chance of abusing prescribed sedatives or analgesics increases with age in both men and women (Abrahams, Armstrong, & Whitlock, 1970; George, 1972; Swanson et al., 1973).

Substance abuse problems are seen for a variety of over-the-counter medications. One type of drug which has long been abused and still exists in some medications (including Sominex and Bromo Seltzer, among others), is *bromide*. When bromide accumulates in the body, symptoms result (Carney, 1971; Stewart, 1973) which can mimic a wide variety of psychiatric problems including an organic brain syndrome (confusion and disorientation) (Morrant, 1975). *Antihistamines* (including Benadryl, Dramamine, and most cold medications) and *anticholinergics* (like scopolamine—found in almost all over-the-counter nerve medications) can also cause a picture of confusion in the elderly, while heavy consumption of *aspirin* compounds is associated with a variety of physical as well as psychological symptoms (Bengtsson, Angervall, & Johansson, 1975; George, 1972; Gault, Rudwal, & Redmond, 1968; Gillies & Skyring, 1972; Murray, Adams, & Greene, 1971).

Causation: Opiate and Nonopiate Abuse

A number of authors have presented hypotheses relating various problems of elderly patients to the propensity to abuse drugs. Feelings of uselessness and being forgotten (Bergman & Amir, 1973) feelings of dependency (Bergman & Amir, 1973), reactions to alienation (Pascarelli & Fischer, 1974; Garetz, 1974), poverty (Pascarelli & Fischer, 1974), and feelings of low status in society (Pascarelli & Fischer, 1974) have all been stated as having contributed to elderly substance abuse.

One area of stress deserves special mention. There is a general feeling that the loss of life structure and feelings of uselessness that accompany retirement or the children growing up and leaving the home may play a role in the development of substance abuse in middle and old age. All of these commonsense theories deserve more thorough evaluations.

However, the problems discussed may be experiences of many elderly people who do not abuse substances and there are probably many geriatric abusers who never overtly experience these difficulties. Thus, while there is an association between many of these factors and growing old, and (by definition, for the geriatric abuser) an association between growing old and abusing drugs, there is no evidence that these factors have contributed to substance abuse.

New Data

There is a vast reservoir of descriptive information on elderly addicts. The Client Oriented Data Acquisition Process (CODAP) was begun in May of 1973 as a single report-

ing requirement for all federally funded drug treatment facilities. The data base as presently revised includes an admission form, discharge report, and activity report for each client. All agencies that receive partial funding support for even a subset of clients may report all cases to CODAP.

Through the generosity of the CODAP System in Washington State, information has been obtained for the entire state for the calendar year 1975. The data reported here represent a superficial description of individuals in such programs but includes 80-90% of treatment slots for abusers and addicts for the nine programs and 32 clinics throughout Washington State. Those individuals whose primary drug of abuse was reported to be other than alcohol were divided into the older addict (age 50 and older) and the younger substance abuser, as is shown in Table 1. It can be seen that the two populations look alike in many ways but that the elderly have a higher percentage of blacks, are more likely to receive treatment at a hospital, and (consistent with the literature above) are more likely to be treated with methadone maintenance. Older patients are also more likely to enter treatment voluntarily and to have abused opiates other than heroin, as well as sedatives.

Table 1. CODAP Clients with Primary Drug Abuse by Age.

N	49 or Less 2533	50 or Over 70
Background		
x age	27	57
% age 60+		26
% male	69	73
Race (%):***		
Caucasian	73	53
black	21	33
Mexican/American	2	10
other	3	4
$\bar{x}$ years school completed	11.6	11.2
% employed at entrance	21	17
% in education programs	12**	3
% in skill development	5	1
Primary drug used (%):***		
heroin	59	57
other opiates	3	10
sedatives/barbiturates	8	25
stimulants	16	0
marijuana/ hallucinogens	11	0
other	3	8
% use primary drug daily	60*	80
$\bar{x}$ years regular use	6	9
Treatment		
% first admission	53	50
$\bar{x}$ month since last treatment	6.8***	16.0
$\bar{x}$ number prior treatments	0.9***	1.7
% hospitalized	7*	16
% voluntary	81	94

*Difference significant at $p < .05$.
**Difference significant at $p < .01$.
***Difference significant at $p < .001$.

Two unexpected findings were the greater likelihood of the older addict abusing drugs daily and their reported mean use of drugs for only 9 years before treatment. It would appear that these older addicts may have begun their addiction in their 40s and thus may not just be the younger addict surviving into old age.

The older individual is more likely to stay in therapy longer and to complete treatment, which may indicate a better over-all response. However, he probably enters therapy with a higher level of physical impairment, since 6% died during the year's treatment.

In summary, elderly addicts do exist and can be culled out from public statistics. The present data are generally consistent with the literature review, showing a high rate of abuse of multiple drugs, a preponderance of methadone maintenance patients, and a trend for treatment in hospital settings. The elderly addicts appear to be at high risk for medical problems.

Alcohol—Background

The exact rate of alcoholism in elderly people is not known, and there is only limited knowledge about the characteristics of elderly alcoholics. However, a recent review of alcohol problems in the elderly (Schuckit & Miller, 1975) indicates that alcohol problems probably affect between 2 to 10% of the general elderly population, with even higher rates of widowers, individuals with medical problems, and people who are in difficulty with the police. The result is that perhaps as high as 20% of elderly individuals who are medical inpatients and 10 to 15% of elderly medical outpatients have serious life problems related to alcohol. Viewed the other way around, probably about 10% of alcoholics in treatment are over age 60.

There is a general feeling that elderly alcoholics may not be a homogeneous group. Some authors have subdivided them on the presence or absence of brain damage—with a worse prognosis and possibly more virulent course for those impaired. Still other raise questions as to whether the geriatric alcohol abuser represents the younger alcoholic

grown old versus a *de novo* development of alcohol problems.

There are few studies of large groups of older alcoholics. One paper deals with a group of medical and surgical patients over age 65 who were admitted to a Veteran's Administration Hospital. Within this sample, 20 of 113 men fit the definition of alcoholism as having had a major life problem related to alcohol (two or more nontraffic arrests; *or* a marital separation or divorce related to alcohol; *or* the loss of a job related to alcohol; *or* physical evidence that alcohol had harmed health). Nine of the 20 men were actively drinking, but 11 had stopped taking in alcohol after 20 years of abuse and had been dry for a number of years prior to the time of study. Those men who were actively drinking drank between 5 and 6 days a week with an average of five drinks per drinking day—an intake somewhat less than what one might have expected for younger alcoholics.

The active alcoholic tended to have an onset of alcohol problems after the age of 40 and had higher rates of alcohol-related health problems than those men who had stopped drinking; they had greater incidences of marital difficulties related to alcohol, but lower rates of police problems than those alcoholics who were presently dry but had begun drinking earlier in life. It thus appears as if a substantial proportion of elderly alcoholics who live to be over age 65 give up their drinking and present with a past history of alcohol problems related to police and social interactions. The majority of actively drinking older alcoholics began having an alcohol problem in their 40s or 50s, and have difficulties related to medical complications from alcohol.

Alcoholism—New Data

All men with alcohol as the primary drug of abuse who were listed in the 1975 Washington State CODAP tapes were divided into those whose age at treatment was 60 or above and 59 or less. A comparison of the basic background characteristics of these two groups is presented in Table 2.

Older alcoholics were more prevalent than old drug abusers, even when the age of cutoff for consideration was raised. Thus, 9% of the alcoholics were age 60 or over, while only 3% of the drug abusers were age 50 or over. Compared to the younger alcohol abusers, the elderly alcoholic group had a higher proportion of men, Caucasians, and individuals with a lower educational level. As is true of the drug-abusing older patients, the elderly alcoholic is more likely to receive treatment in a hospital where he is a voluntary patient. Elderly alcoholics are often more frequently seen in detoxification centers and, once they enter treatment, they are less likely to receive antabuse (a drug that makes them become ill if

Table 2. CODAP Clients with Primary Drug Alcohol by Age.

N	59 or Less 407	60 or Over 41 (9%)
Background		
$\bar{x}$ age	43	63
% male	94	100
% Caucasian	95	98
x years school completed	11.4	10.7
% drink daily	73	88
$\bar{x}$ age 1st regular use	15***	23
Treatment		
% first admission	78	85
$\bar{x}$ months since last treatment	12.4	14.6
% hospitalized	79**	100
% voluntary	87	93
% for detoxification	70***	98
$\bar{x}$ length treatment (months)	1.2***	0.6
% on Antabuse	8	2
% employed at discharge	19	12
reason discharged (%):**		
completed treatment	40	73
split from treatment	38	15
transfer	20	12
other	2	0
	49 or Less	50 or Over
Treatment		
treatment mode (%):**		
detoxification	32	36
maintenance	8	21
drug free	58	40
other	2	3
$\bar{x}$ length treatment (months)	4.4***	9.9
% receiving methadone	35***	50
at discharge: % employed	24	27
% in education	11	1
reason discharged (%):***		
completed treatment	27	34
split/jailed	58	51
transfer	9	3
death	<1	6
other	5	6
% on methadone at discharge	6***	19
% abusing no drugs at discharge	74*	67

*Difference significant at $p < .05$.
**Difference significant at $p < .01$.
***Difference significant at $p < .001$.

they drink). This latter finding is probably related to the fact that they present more medical problems than younger alcoholics and thus may be felt to represent a high-risk patient for antabuse therapy.

It is interesting to note that there were no differences in histories of prior treatment between older and younger alcoholics. It also appears that most of the elderly alcoholics in the sample began abusing alcohol in their 40s, since they report a mean of 23 years since first regular use of the drug. Compared to their younger counterparts, the older alcoholic is more likely to drink daily but appears to have a better response to treatment, with 73% completing therapy (vs. 40% for younger individuals) and only 15% (vs. 38% for the younger men) leaving therapy before it is complete. Older alcoholics appear to require a shorter period of time in treatment.

The findings are consistent with the findings of other investigators, demonstrating that many active elderly alcoholics began regular drinking relatively late in life. Their presence in hospitals and the absence of antabuse therapy support the conjecture of a higher incidence of medical problems than for the younger alcoholic, and they appear to have slightly better prognoses (at least as measured by staying in therapy) than their younger counterparts.

Alcoholism—Reflection on Possible Causes

No one cause for alcoholism is known. The same problem in determining cause and effect exists here as was noted for causes for drug abuse in elderly patients. Many problems occur in daily living, and some of these occur more frequently in older than younger populations. The vast majority of people undergoing these stresses, however, do not develop substance abuse. Also, abuse of alcohol can intensify somatic problems, isolation, and loss of status which tend to occur in older individuals in the first place. The concomitance of life problems and substance abuse in the same individual is no proof that one caused the other.

There exists the same danger of assuming that because something makes sense, it is true. In order to answer these important questions, investigators are going to have to continue to gather good data and attempt to avoid premature closure of either causative or exacerbating factors.

Summary

Substance abuse problems in elderly individuals have received much less attention than is true for younger citizens. Due to the increased health care needs of elderly patients, as well as their decreased medical reserve when things go wrong, it is important to *make efforts to identify and treat* older individuals involved in any form of substance abuse.

This paper has discussed three types of substance abuse. In each area the elderly are a minority, but their numbers seem to be increasing (e.g., the aging of younger addicts of the 1960s). Some of the main trends noted here include:

Opiates

(1) At least 5% of opiate addicts are over age 45 with 1% over age 60. The real rate is probably much higher as, even more than the young addict, the older abuser is likely to be hidden by his family and ignored by the police.

(2) The literature indicates that most subjects were young addicts surviving into old age—but there may be a subgroup with a later onset.

(3) Special treatment needs of the elderly addict include special health and social service supports and the recognition that they may do poorly in jail but well on outpatient methadone maintenance.

Inadvertent Abuse of Nonopiates

The elderly are the highest consumers of legal drugs—usually prescribed for good medical reasons. However, because of their tendency to receive multiple prescriptions, to take over-the-counter drugs, to borrow or hoard old drugs, and their decreased physical reserve, they have a high rate of adverse drug reactions.

Deliberate Abuse of Nonopiates

(1) The prescription drugs most likely to be abused are anti-anxiety drugs like Equanil, sleeping pills, and pain pills.

(2) In addition, the elderly are likely to misuse over-the-counter pain pills (including aspirin and aspirin compounds), laxatives, and bromides, and to mix these drugs with alcohol or prescribed medications.

Alcohol

(1) Two to 10% of the elderly population

are alcoholic and 10% of alcoholics are over age 60. Even higher rates are seen in widowers and general medical/surgical patients.

(2) A substantial proportion of elderly alcoholics began abusing alcohol late in life with subsequent high rates of medical problems.

Causes

(1) The geriatric opiate abuser is usually the young addict grown old—causes do not seem to be distinct for old age.

(2) Inadvertent use of prescription drugs would seem to be the result of ignorance by the user of the proper intake patterns and the serious dangers involved in deviations from the prescription.

(3) The causes of deliberate abuse of drugs or alcohol in the aged are not known. It makes sense that the stresses of growing old with loss of status, feelings of being useless, and loss of health play a role here—but there are little convincing data.

(4) The best way to proceed is to carefully set up some pilot intervention program *and* to continue to gather good data on the scope of the problem and characteristics of the abusers.

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