


Alcohol and other drug use in older adults: results from a community needs assessment

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Abstract

Background With the “Baby Boomer” generation reaching older adulthood, substance abuse treatment providers find themselves needing to address the unique needs of this population. Heavy drinking in adults ages 65 and over is strongly correlated with depression, anxiety, decreased social support, and poor health. However, while alcohol misuse has been shown to be predictive of a lower quality of life in older adults, the generalizability of these findings to urban dwelling, lower socioeconomic status individuals remains unclear.

Aims To identify potential treatment needs of this population, a city-funded needs assessment was conducted.

Methods Subjects were 249 individuals (44% male) who voluntarily completed measures of quality of life (QOL), depression, and substance abuse. Measures used included the Psychological General Well-Being Schedule, the Geriatric Depression Scale-15, and the Alcohol Use Disorders Identification Test (AUDIT).

Results Alcohol or substance abuse was reported by over 20% of respondents, with 3.4% of respondents engaged in maladaptive alcohol use. Scores on the AUDIT were predictive of increased depression ($r = -.209, p = .01$), anxiety ($r = -.201, p = .002$), lower general well-being ($r = -.154, p = .019$), and decreased self-control ($r = -.157, p = .017$).

Discussion A substantial percentage of the sample reported alcohol and substance misuse. Alcohol use was predictive of depression, global psychological distress, and decreased quality of life.

Conclusions This needs assessment reinforces findings from previous studies and addresses the added dimension of examining this in an urban, lower socioeconomic population.

Keywords Needs assessment · Older adult · Drug and alcohol use · Quality of life

Introduction

The misuse of licit, as well as illicit substances is a developing problem in the “Baby Boomer” generation with alcohol and prescription painkillers being frequently cited as abused substances [1–5]. As a result, the substance abuse treatment community finds itself lagging behind in addressing the unique needs of this burgeoning population [6, 7]. For example, survey results indicate that only 18% of treatment providers have designated services specific to the needs of this group [8].

Moderate versus heavy alcohol use in older adults

Guidelines for alcohol consumption for individuals aged 65 and over are more restrictive, especially in cases of individuals who are taking prescription medications known to interact with alcohol [9]. Alcohol, when used in moderation, has been shown to be beneficial with respect to certain health outcomes. For example, light to moderate alcohol use has been associated with a lower incidence of non-insulin dependent diabetes in older adults [10] while other

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dietary benefits such as improved appetite and digestion, as well as psychosocial advantages, have also been identified [11].

However, the intemperate use of alcohol in this population may lead to a variety of physical health problems, such as deficiencies in essential vitamins and fatty liver disease [11], mental health problems (i.e., poor short-term memory as well as mood disorders), and diminished quality of life [9]. Of those who abuse alcohol in older adulthood, approximately one third are believed to have developed alcohol use disorders later in life (i.e., post age 70). The remainder are believed to have suffered with an untreated alcohol use disorder for some unspecified period of time [12].

Depression and alcohol use in older adults

Research examining the relationship between alcohol use and depression has been of growing interest to behavioral health workers who focus on this age group. Kirchner et al. [13] found a strong correlation between heavy drinking in adults aged 65 and older and mood disorders (i.e., depression and anxiety), as well as decreased social support and the subjective experience of poor health. Rodriguez et al. [14] also noted higher risk for alcohol abuse in older adults reporting depressive symptoms, particularly those on the younger end of the older adult age bracket. Interestingly, Merrick et al. [15] observed a lower prevalence of unhealthy drinking in depressed older adults. Reasons for these discrepancies in findings are unclear and point to the need for continued research on the relationship between mood, alcohol misuse and aging, and could help to inform treatment options for this age group.

Effect of alcohol and other substance use on quality of life in older adults

Laudet and others have postulated that the quality of life (QOL) of substance abusers is frequently poorer than that of non-substance abusers [16]. Whether this finding is robust across all age groups is unknown. Quality of life is a complex construct; one that in older, as well as in younger adults, may be influenced by myriad factors, such as activities, relationships, health, wealth, and surroundings [17, 18]. Farquhar [17] has demonstrated that not only the absence of negative factors such as depression and anxiety, but also the presence of positive factors, such as good physical health as well as social contacts and support, are important determinants of elder QOL. Tuchman [6], in reviewing the literature on addiction in women, noted the challenges associated with delivering care to middle aged, female substance abusers.

The generalizability of these reported findings to an urban dwelling, potentially lower socioeconomic status

older adult population remains unknown however. In an attempt to understand the distinctive treatment challenges confronting this population, the present study was conducted to examine the prevalence of substance abuse in a sample of urban older adults attending an inner city senior center facility. Pre-survey discussions with senior center administrative personnel pointed to the relevance of acute alcohol intoxication as the most frequent determinant of behavioral difficulties in this population. It was anticipated that via this needs assessment, basic information about the need for and willingness to utilize behavioral health services would be documented. As such, it was expected that the result of this study could help to inform decision-making at the city Department of Behavioral Health level.

Inasmuch as the present study was exploratory in nature, we had very few a priori hypotheses. However, given the prevalence of substance misuse in many low-income, urban settings, it was anticipated that this population, consisting primarily of lower SES, older adults, would report a meaningful level of alcohol and/or substance misuse. Based on the findings of Laudet et al. [16], it was expected that older adults reporting alcohol and/or substance misuse would report a lower quality of life. It was further expected that higher levels of alcohol use would be associated with higher levels of self-reported depressive affect.

Methods

Participants

Respondents to this city-funded needs assessment were 249 individuals (56% female) participating in a major Northeast city Senior Center (SC) sponsored activities. In an attempt to ensure anonymity, participants were asked to identify their age according to five broad categories. Two-hundred eighteen respondents provided this information. Results indicate that the five age groupings were satisfactorily represented—60–65 (22.9%), 66–70 (23.4%), 70–75 (20.2%), 76–80 (13.8%), and 81 and over (19.7%).

Measures

SC participant screening process

To establish the prevalence and scope of depression in SC participants, as well as overall psychological distress and potential alcohol/substance abuse disorders, the abbreviated Geriatric Depression Scale (GDS) [19], the Psychological General Well-Being Index (PGWBI) [20], and the Alcohol Use Disorders Identification Test (AUDIT) [2] were administered anonymously to sub-samples of SC enrollees. A series of investigator designed questions further queried

respondents about use/misuse of licit and illicit substances as well as their perceived need for help with this drug use. Approval from the city and the organization's Institutional Review Boards was secured prior to onset of data collection. In an effort to avoid sampling biases and to most accurately estimate the need for services, these sub-groups included individuals attending the Family Medicine sponsored medical clinic on-site, a large number of the consumers who participated in SC activities and/or participated in programs, as well as a sample of individuals residing in SC sponsored housing. All measures were self-administered unless the respondent requested investigator assistance.

Measures

The abbreviated GDS, a brief (15 item) psychometrically sound self-rated scale has been reported to successfully distinguish depressed from non-depressed individuals [19]. Sensitivity and specificity rates of 92.7 and 65.2%, and positive and negative predictive values of 82.6 and 83.3%, have also been noted [21]. The psychometric properties of the GDS have also been established with a sample of cognitively intact older adults with functional impairments living in the community [22].

The PGWBI is a 22 item self-administered measure that in addition to a total score that provides scores in across six dimensions—*anxiety, depressed affect, positive well-being, self-control, general health, and vitality* [20]. In a non-clinical population, the PGWBI's psychometric properties were found to be quite acceptable with measures of internal consistency (Cronbach's alpha) and test–retest reliabilities being quite good (0.94 and 0.66, respectively) [23]. Validity estimates were also acceptable.

The AUDIT is a well-documented, relatively brief (10 item) screening tool for alcohol use disorders. The AUDIT demonstrates strong psychometric properties, including test–retest reliability ($r=.80$) [24], internal consistency (Cronbach's alpha=.80) [25], and construct validity (sensitivity 100%, specificity 76% for identifying alcohol use disorders) [26].

In addition, respondents were asked (1) how troubled they were about their alcohol/drug use (scaled as Very, Somewhat, or Not At All), and across a series of investigator-designed dichotomized items (i.e., Yes/No), (2) whether their alcohol/drug use caused problems such as craving and/or withdrawal, (3) whether they would use specialized behavioral health services if they were provided at the Senior Center (for example, a depression-oriented treatment group), and (4) whether there were barriers that prevented them from accessing behavioral health services.

To avoid a "priming" effect, presentation of the screening and needs assessment items were counterbalanced. In 50% of the survey packages, the needs assessment preceded

the screening instruments (i.e., GDS, AUDIT, PGWBI.) The entire battery and brief narrative question set in most instances took no more than 20 min to complete.

SC program attendees

While we initially had planned to randomly survey a pre-selected sample of individuals participating in daily services, this plan ultimately proved to be unfeasible due to unreliable attendance.

Discussion with SC senior administrative staff suggested that convenience sampling of SC program attendees might be the most likely means of securing an adequate sized and representative sample, and we ultimately were able to collect completed data from 128 individuals.

Sponsored housing elders

While estimates based on published data [22] suggest that a 2% random sample would be satisfactory to achieve 87.5% certainty that homebound elders scores would fall within the range of 3.3 and 5.3 on the GDS, a 10% random sample of the approximately 1200 older adults residing in the 13 SC sponsored remote housing sites was proposed. Individuals at these sites were informed by mail that they were invited to participate in an anonymous survey of the behavioral health needs of older adults. Screening instruments were delivered to the residences by project personnel who followed-up within one week to both collect completed instruments and provide assistance to those individuals who were otherwise unable to complete the measures on their own. Surveys were returned by 101 of the 186 residents to which they were offered (54.3%).

Family medicine practice attendees

Approximately 1,000 SC members over the age of 60 visit the organization's Primary Care Geriatric Medical Office which has been housed on site at SC since 1998. During the period of data collection, individuals coming to the practice were offered an opportunity to complete the packet of screening instruments while either waiting to be seen by their physician or after their appointment. The number of completed packets returned was compared to the number of packets distributed allowing project staff to determine in real time whether an acceptable response rate was being obtained and whether data acquisition procedures were in need of revision. Slow return rates led us to modify data collection procedures on several occasions. These modifications included having attending physicians distribute the survey materials, and posting research staff on site to distribute the questionnaire packets. These procedural modifications notwithstanding, and despite all efforts to reassure

potential participants that their responses were completely anonymous and would not be shared with their physician, ultimately we were able to secure completed response from 20 individuals receiving services at this site making meaningful comparisons difficult.

Plan of analysis

Depending on the level of measurement of any given instrument, data analysis consisted of descriptive statistics, including means, standard errors, percentages etc. For example, means on the GDS and AUDIT scores were recorded, as were scores on the six scales of PGWBI. Where age appropriate standardized norms exist, they were used for estimating the prevalence of substance use and/or psychosocial disorders in this population. Careful attention was paid to respondent and staff reports of the need for specialized behavioral health services and perceived (or real) barriers that prevent access to them. We also categorized (i.e., stratified) and attended closely to the source of information (i.e., remote housing sites, lunch attendees) as the needs of the homebound may be quite different from those of ambulatory SC consumers (see Table 1). The use of stratification procedures can be quite useful in improving the precision of prevalence and need/anticipated use of service estimates [27]. Correlation analysis was used to examine the relationship between study measured factors.

Results

Prevalence

Forty-nine of the 249 respondents (19.7%) reported engaging in potentially problematic alcohol and/or substance use. Of these 49 individuals, 24 (48.9%; 9.6% of all respondents) reported hazardous alcohol consumption via the AUDIT, defined by Babor et al. [2] as a score of 1

or more on Questions 2 (3 or more drinks on a typical day when drinking) or 3 (frequency of consuming six or more drinks when drinking). In examining the distribution of AUDIT scores, we observed that 24 (9.6%) of respondents scored 7 or higher and would therefore benefit from some level of intervention. Almost 60% of respondents reported no alcohol use.

In terms of other possibly problematic behavior, 18 participants (36.7; 7.2% of all respondents) admitted to use of prescribed medications in a manner inconsistent with how it was prescribed by their physician and 17 participants (34.7; 6.8% of all respondents) reported use of illicit substances such as marijuana and cocaine. No attempt to identify drug(s) of choice, or to quantify the frequency or amount of illicit substance use was made. Three of the 49 participants reported abuse of both licit and illicit substances.

Interestingly, 18.4% of these 49 positive cases reported both problematic AUDIT assessed alcohol use and concurrent drug misuse. Dangerous alcohol use, as evidenced by self-reported binge drinking (AUDIT question 3), was identified in 3.6% of the overall sample. Of the respondents who endorsed use of drugs and/or alcohol, 15.6% reported on the investigator designed items that they experienced alcohol/drug related problems such as craving and/or withdrawal, 20% reported that they were somewhat or very troubled by their substance use, while 26.5% indicated that they would accept a referral to behavioral health services if it was made available to them.

Scores on the 15-item Geriatric Depression Scale were observed to be positively skewed, with a mean of 2.82 ± 3.25 . Almost 77% of respondents reported little or no depressive symptomatology (0–4), while 17.4 and 5.8% reported moderate (5–9) to severe (>10) symptoms, respectively. With respect to depressive symptoms, we noted that our sample evinced less GDS assessed distress than findings from D’Ath et al. [28] ($t(242)=4.19, p<.01$).

Table 1 Mean scores by data collection site

	Senior center	Medical practice	Sponsored housing	<i>p</i>
	Mean	Mean	Mean	
GDS	2.90	3.55	2.58	Ns
PGWBI_anx	17.66	15.15	17.95	Ns
PGWBI_dep	11.43	10.80	12.20	Ns
PGWBI_positive well being	12.62	10.20	12.88	0.05
PGWBI_self control	11.43	10.21	12.15	0.04
PGWBI_general health	9.57	7.15	9.21	0.02
PGWBI_vitality	13.20	9.65	13.11	0.001
PGWBI general well-being	75.43	62.65	77.22	0.023
AUDIT	2.17	0.68	2.23	Ns

Hypothesis 1 To address the findings of Laudet et al. [16] who have noted impaired quality of life in individuals with substance use disorders, a series of two-way analyses of variance, crossing age and the presence/absence of self-reported substance use, allowed us to compare psychosocial functioning of those individuals positive for alcohol and/or drug use with all others, while controlling for age. As can be seen in Table 2, on most measures of psychosocial functioning, main effects of substance use were noted. Specifically, it was observed that individuals reporting misuse of alcohol and/or drugs manifested greater psychological distress than those who did not (i.e., they evinced more depression and anxiety, while also experiencing a lower overall quality of life). No age grouping or interaction effects were observed.

To further examine the relationship between alcohol use and affective state, correlational analysis employing the AUDIT and PGWBI was conducted. Scores on the PGWBI Positive Well Being Scale, a 25-item measure of quality of life, were observed to be fairly normally distributed and ranged between 0 and 20 ($M=12.52$, $SEM=0.29$). As hypothesized, AUDIT assessed alcohol use was significantly associated with a lesser quality of life in this sample ($r=-.13$, $p=.05$). In addition, alcohol consumption was associated with other measures of psychological distress. Specifically, scores on the AUDIT were correlated with (1) greater levels of anxiety ($r=-.201$, $p=.002$), (2) diminished self-control ($r=-.157$, $p=.017$), and (3) lessened overall psychological well-being ($r=-.154$, $p=.019$).

Hypothesis 2 To assess the relationship between levels of alcohol use and affective disorders in an older population, we examined the correlation of scores on the AUDIT with those on the PGWBI and observed scores on the AUDIT to be negatively correlated with levels of PGWBI assessed depressive mood ($r=-.209$, $p=.01$). While the

correlation of the GDS and AUDIT scores did not reach traditional levels of significance, ($r=.12$, $p=.07$), when GDS scores were trichotomized into three scoring categories, we observed a significant effect of depression, ($F(2, 229)=3.111$, $p<.05$). An examination of means indicated that the moderate depression group reported the most depressive affect ($M_s=1.74, 3.68, 1.76$ for the little or no, moderate, and severe symptomatology groups, respectively). While correlational, when taken together, these findings point to a possible self-medication hypothesis, suggesting that respondents may have been using alcohol to treat depressive affect.

Staff survey

In an effort to further examine the behavioral health needs of older adults, staff working in the Senior Center (SC) was asked to complete a brief, anonymous survey about their perceptions of addiction and emotional/psychological problems they observed in older adults participating in center programming. Thirty-four staff members returned completed surveys. Of the respondents, five identified themselves as holding clerical/secretarial positions, 12 characterized themselves as program administrators, and 13 reported being clinical staff. Four individuals declined to respond to the question. As in the consumer survey, results clearly pointed to the need for expanded behavioral health services. For example, 44.1% of SC staff report encountering a SC consumer who was under the influence of drugs and/or alcohol in the six months prior to questioning. However, only two respondents indicated that a SC consumer asked about a specific referral for treatment in that same time period. A similar pattern of findings was observed for emotional/psychological problems. Specifically, 56% of SC staff reported encountering SC consumers manifesting symptoms of emotional/psychological distress in the six months prior to questioning. In the same time period, only 29.4% of staff reported consumers seeking information about mental health services.

The SC staff indicated that in their opinion, the most frequently observed factor(s) preventing SC consumers from accessing specialized behavioral health services were stigma (65%), and the lack of easily available services (61%). Cost (58%) and transportation difficulties (50%) were also cited by SC staff as barriers to treatment access.

Discussion

The present study was conducted to assess the prevalence of substance abuse in an urban older adult sample as well as its impact on quality of life and psychological well-being. The expectation that a significant proportion of this

Table 2 Mean scores by alcohol/substance positive versus negative

	Alcohol/substance positive ($n=49$)		Negative ($n=157$)		<i>p</i>
	Mean	SD	Mean	SD	
GDS	3.75	3.81	2.55	2.99	0.06
PGWBI_anx	15.41	6.39	18.45	5.41	0.00
PGWBI_dep	10.35	3.92	12.23	2.89	0.00
PGWBI_positive well being	11.52	4.44	13.12	4.37	0.05
PGWBI_self control	10.72	3.76	12.10	3.05	0.02
PGWBI_general health	8.78	3.32	9.23	3.62	ns
PGWBI_vitality	12.80	4.14	12.97	4.56	ns
PGWBI_total score	69.58	22.35	78.05	20.23	0.03

population would report alcohol and/or substance misuse was supported with slightly less than 20% of respondents self-reporting potentially dangerous alcohol and/or drug misuse. Interestingly, prescription drug misuse and illicit drug use were equivalently reported. However, our survey measure did not specify drug(s) of misuse, leaving us unable to identify whether analgesic or anxiolytic prescriptions were problematic licit drugs, if marijuana was being used to self-medicate a medical or psychological condition or if some other illicit substance was being used. While the findings are provocative with prevalence estimates that coincide with previously published findings in older adults [12], the limited quantification of drug and/or alcohol abuse, does not allow us to point to a specific treatment response at this time. Despite some degree of problematic alcohol consumption being observed, a wide variety of “treatment” responses ranging from simple screening & brief intervention (SBIRT) to more formal interventions such as intensive outpatient, may be warranted.

The expectation that AUDIT-assessed alcohol use would be predictive of depression and global psychological distress was supported. The association of alcohol use and depression has also been previously observed in older adults [13]. The results of the present study further substantiated these earlier findings by employing standardized, psychometrically sound measures of alcohol misuse, depression, and anxiety. In addition, the present study expanded upon analyses of psychiatric symptoms by introducing the concept of quality of life into the exploration of the topic of alcohol misuse in older adults.

Support for the expectation that quality of life would be negatively impacted by alcohol use was noted. While Laudet et al. [16] have previously reported on the deleterious effect that substance use has on quality of life, our results suggest not surprisingly that this relationship may extend to an urban geriatric population as well.

These findings must nonetheless be considered in light of the study’s limitations. First, despite efforts to secure a representative sample, true random sampling efforts ultimately were abandoned and as such it is unclear as to whether these prevalence estimates will generalize to other locations. Second, the correlational nature of these data prevents a cause and effect relationship from being established. It may be that the presence of psychological distress promoted increased alcohol/drug use in this sample. Third, as noted previously, the absence of quantification of drug and/or alcohol use, did not allow us to accurately specify the treatment needs of this population. This is essential, as means for screening older adult medication misuse have not been well-established, and therefore it is difficult to infer the level of response needed (i.e., medical education versus formal treatment). Cases where self-reported misuse is the result of error in drug administration clearly do not

point to problematic behavior and should be responded to accordingly. Unfortunately, our measure(s) did not include this level of specificity and this remains a limitation of the current work. Finally, alcohol and substance use prevalence may have been underestimated, the result of a generalized unwillingness to report such behavior. This may be particularly true of those individuals residing in sponsored housing environments. Underreporting of deleterious behavior on self-report measures is a phenomenon that has been documented in previous studies of substance abuse [29] as well as other socially undesirable behaviors [30].

Taken together, these findings may suggest a need for more specialized treatment programs to target the unique needs of lower-income older adults residing in an urban setting. This conclusion supports previous findings indicating better retention of older adults in treatment programs specific to older adults [31]. Motivation also seems to exist even in those who are abusing multiple substances; of those who endorsed use of drugs and/or alcohol, a large percentage indicated interest in referral to behavioral health services. However, substance abuse treatment has not been accepted as a billable service by Medicare, exacerbating the difficulty of funding suitable treatment. The Affordable Care Act, when fully implemented, may help to address this issue. Further research should be conducted to determine most common substances of abuse as well as most effective treatments to target these substance use disorders in this age group.

Compliance with ethical standards

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Statement of human rights/ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

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