



HHS Public Access

Author manuscript

Am J Geriatr Psychiatry. Author manuscript; available in PMC 2021 January 27.

Published in final edited form as:

Am J Geriatr Psychiatry. 2021 January ; 29(1): 15–23. doi:10.1016/j.jagp.2020.08.004.

A Substance Misuse Intervention Program in Post-Acute Care: Who Declines Participation?

Verena R. Cimarolli, PhD,

LeadingAge LTSS Center @UMass Boston, Washington, DC

Orah Burack, MA,

The New Jewish Home, Research Institute on Aging, New York, NY

Jillian M. Minahan, MA,

Fordham University, Psychology Department, Bronx, NY

Francesca Falzarano, PhD,

Weill Cornell Medicine, New York, NY

Joann P. Reinhardt, PhD,

The New Jewish Home, Research Institute on Aging, New York, NY

Xiaomei Shi, MA

LeadingAge LTSS Center @UMass Boston, Washington, DC

Abstract

Objectives: Alcohol and substance misuse has been under-acknowledged and under-identified in older adults. However, promising treatment approaches exist (e.g., brief interventions) that can support older adults with at-risk alcohol and substance use. Post-acute rehabilitation settings of Skilled Nursing Facilities (SNFs) can offer such programs, but little is known about patient characteristics that are associated with the likelihood of participating in interventions offered in post-acute rehabilitation care. Thus, the objective of this study was to identify individual patient characteristics (predisposing, enabling, and need-related factors) associated with participation in a brief alcohol and substance misuse intervention at a SNF.

Methods: This cross-sectional study analyzed medical record data of post-acute care patients within a SNF referred to a substance misuse intervention. Participants were 271 patients with a history of substance misuse, 177 of whom enrolled in the intervention and 94 refused. Data

Address correspondence to Verena R. Cimarolli, PhD, LeadingAge LTSS Center @UMass Boston, 2519 Connecticut Avenue NW, Washington, DC 20008. vcimarolli@leadingage.org.

Author Contributions: Study concept and design, acquisition of data, interpretation of data, and manuscript writing: V.R. Cimarolli. Acquisition of data, interpretation of data, and manuscript writing: O. Burack and J. Minahan. Interpretation of data and manuscript writing: F. Falzarano. Study concept and design, interpretation of data, and manuscript writing: J.P. Reinhardt. Data analyses and interpretation: X. Shi.

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Conflict of Interest: The authors of this article have no relevant conflict of interest.

collected upon patient admission were used to examine predisposing, enabling, and need-related factors related to likelihood of program participation.

Results: Older age and ethnic minority status were associated with a reduction in likelihood to participate, while widowhood increased the likelihood of participation.

Conclusions: Upon referral to a substance misuse intervention, clinicians in SNFs should be cognizant that some patients may be more likely to refuse intervention, and additional efforts should be made to engage patients at-risk for refusal.

Keywords

substance misuse intervention; post-acute rehabilitation; skilled nursing facilities

Introduction

At-risk alcohol or other substance use of older adults over the age of 50 is a growing public health issue. Alcohol misuse, such as binge drinking, is estimated to be as high as 10% among older Americans.¹ Furthermore, as chronic health conditions increase with age, older adults are prescribed and consume prescription drugs—sedatives and opioids in particular—leading to prescription drug misuse. According to the Substance Abuse and Mental Health Services Administration (SAMHSA), 3% of individuals aged 50 – 64 and 1.5% of individuals older than 65 report yearly opioid medications misuse.² Illicit drug use is also prevalent among older adults. About 6% of individuals aged 65 and over report having used illicit drugs over the last month with cannabis being the most commonly used illicit drug among older adults.² With the aging population getting larger, the number of older adults at risk for substance misuse is expected to increase.^{3,4}

Although substance misuse is prevalent and on the rise among older adults, it has remained under-acknowledged and under-identified in older adults.⁵ In fact, adults aged 65+ are less likely to use potentially beneficial treatment services and have lower perceived treatment needs when compared to their younger counterparts.⁶ This is partly due to older adults facing significant barriers to seeking treatment, including stigma, geographic isolation, financial constraints, and transportation challenges.^{7,8} Therefore, a substantial number of older adults in need do not receive the appropriate and beneficial recovery interventions. There is relatively little research on the effectiveness of treatment programs for older adults. Research, however, suggests that older adults who attend treatment programs have better or similar outcomes as younger adults.⁹ We also have some insights into what types of treatment programs may be particularly well suited for older adults. In a review of treatment options for older adults, Kuerbis and Sacco⁹ found that age specific treatments may work better with older adults than mixed-age treatment programs. Group treatments are the norm in substance abuse programs and can reduce isolation and feelings of shame, but older adults may feel more isolated in mixed-age groups because of an inability to relate to the problems and circumstances of younger adults.¹⁰ (Schultz et al., 2003).

One strategy for overcoming some barriers that older adults face in engaging in substance misuse treatment services is to screen for at-risk substance use behaviors in medical settings,

particularly in primary care settings and then offer interventions within these settings.¹⁰ These types of interventions are typically brief, provide education regarding the harm associated with substance misuse, motivate change, and refer to treatment when necessary.¹¹ Brief interventions have been found to be effective in reducing alcohol and substance misuse.^{12, 13, 14, 15} There is, however, a need for a wider array of evidence-based treatment and intervention settings and options specifically designed to break down the common barriers to treatment and interventions experienced by older adults with alcohol and substance use issues.⁵

To meet this urgent need, skilled nursing facilities (SNFs) have started to develop brief screening and intervention programs that are being offered to older adult patients receiving medical rehabilitation within their post-acute care settings.¹⁶ There is evidence that such an intervention approach is feasible to implement and can be effective in helping older adults abstain from at-risk alcohol and other substance use¹⁶ as well as improve rehabilitation outcomes.¹⁷ However, little is known about the characteristics of older adults who are likely to participate as opposed to decline participation in substance misuse intervention programs offered in post-acute care at SNFs. Such knowledge is necessary in order to engage older adults with substance use issues in potentially beneficial interventions. The purpose of this study was to identify individual characteristics associated with participation in an alcohol and substance misuse intervention program in a SNF. Specifically, relying on Andersen's Model of Health Care Utilization,¹⁸ we sought to identify *predisposing* factors (i.e., age, gender, ethnicity/race, and marital status), *enabling* factors (i.e., cognition, depression, behavioral symptom, pain, and social support), and *need-related* factors (i.e. physical functioning, comorbidities, and severity of substance misuse) associated with the likelihood of intervention participation.

Methods

Data Sources

Over a three-year period - from 2015 to 2018 - a total of 271 patients aged 55 or older who were referred to the program (177 program participants and 94 refusers) were included in the study. Data were obtained from patients' electronic medical records (EMR) assessed as part of the admission minimum dataset 3.0 (MDS 3.0). The study was approved by the Institutional Review Board (IRB) of the organization where the research was conducted.

The Substance Misuse Intervention Program

The New Jewish Home – a large health care system for older adults based in New York City - created the program to help identify and address alcohol and substance misuse issues among older adults receiving post-acute care. The intervention was designed specifically for older adults and included the following stepwise components¹⁶:

1. Screening of all patients 55 years and older admitted for post-acute rehabilitation to identify possible substance misuse issues: First, existence of alcohol and drug problems was established by administering the CAGE-AID¹⁹ to all patients admitted to post-acute care one business day after admission. If patients screened positive (one or more substance use problem) on the CAGE-AID and were

willing to participate in the intervention, they were further evaluated for alcohol and other substance use issues by administering the Michigan Alcoholism Screening Test-Geriatric Version (MAST-G)²⁰ and/or the Drug Abuse Screening Test (DAST)²¹. The CAGE-AID has sensitivity of .79 and a specificity of .77.¹⁹ The MAST-G has a sensitivity of 93% and a specificity of 65%.²² The sensitivity of DAST-28 has been found to range from 81% to 96% and its specificity from 71% to 94%.²³

2. If substance misuse issues were identified, the counselor/program director approached the patient on the post-acute unit and introduced the program. If a patient wanted family members or other support persons involved, the program director/counselor also introduced and explained the program to these individuals, including that the program can provide family/close supports counseling.
3. Assessment of patients' specific addiction and support needs (e.g., family involvement).
4. Development of a comprehensive individualized care plan to meet the intervention needs for patients during their post-acute stay (3–5 weeks). Care plans included psychological consultations, substance abuse counseling, group work and individual therapy, family therapy as well as on-site community-based self-help group meetings, such as Alcoholics Anonymous. Each patient had their own treatment plan, based on their situation, needs, and willingness to participate. The Program Director coordinated with rehab professionals to ensure both the substance misuse program and rehabilitation intervention plans were feasible to implement.
5. Involvement of families and/or close supports in the intervention process and care plan meetings.
6. Referral to community-based substance abuse recovery programs and services prior to discharge to facilitate engagement in these programs upon discharge.
7. Post-discharge phone call and a home visit to ensure patients have and use necessary community-based supports and to provide ongoing support and encouragement.

Measures

Outcome—Program participation status was a dichotomous variable. For those who screened positive for substance misuse, a “1” indicated participation in the intervention and a “0” indicated declination.

Predisposing Factors—Demographic characteristics - age, gender, race/ethnicity, and marital status (single item indicators) were obtained from patients' EMR.

Enabling Factors

Cognitive Functioning.: Cognitive status was assessed via the Brief Interview for Mental Status (BIMS).²⁴ Based on the BIMS summary score (0–15), patients were categorized as cognitively intact (13–15), moderately impaired (8–12), or severely impaired (0–7).

Depressive Symptoms.: The Patient Health Questionnaire-9 (PHQ-9)²⁵ was used to assess the extent of symptoms of depression such as feeling down, depressed, or hopeless over the past 2 weeks, using a 4-point Likert type scale (possible range = 0–27). Depressive symptoms were categorized as: no depression (0–4), mild (5–9), moderate (10–14), moderately severe (15–19) or severe depression (20–27).

Social support.: Whether the patient had social support from family members or friends (Yes/No) was ascertained by examining clinical notes in EMRs. Support receipt (Yes) was determined if a family member and/or friend was involved in care during post-acute stay (e.g., attended care plan meetings).

Need-Related Factors

Behavioral Symptoms.: We utilized MDS item E0300, Overall Presence of Behavioral Symptoms, including physical, verbal, and other behavioral symptoms (Yes/No).

Pain.: We used MDS item J0300: “Have you had pain or hurting at any time, during the last 5 days?” (Yes/No).

ADL Functional Dependence.: We used the Activities of Daily Living (ADL) Scale adapted for the MDS,²⁶ which assesses the degree of difficulty performing ADL tasks, including dressing, eating, and toilet use is rated (range=0 [independent] to 4 [total dependence]). An indicator of functional dependence was created by adding the number of ADLs at admission rated as “extensive assistance” or “total dependence” across 7 ADL items (bed mobility, transfer, locomotion on unit, dressing, eating, toilet use, and personal hygiene). Scores ranged from 0–7.

Comorbidities.: The sum of the number of chronic conditions was calculated.

Number of Substance Misuse Problems.: Upon admission, the substance misuse counselor/program director noted whether each of the following misuse was present (Yes/No): Alcohol, illicit drug use, and/or prescription medication misuse. The number of problems were summed (range = 1 – 3).

Data Analysis Plan—Descriptive analyses were run on all study variables. Chi-square analyses and independent *t*-tests were performed to describe and compare characteristics of program participants and refusers. A logistic regression analysis was conducted to identify correlates – that is *predisposing*, *enabling*, and *need-related* factors - of program participation, relying on Andersen’s Model of Health Care Utilization¹⁷ as a conceptual framework for selection of predictor variables.

Results

Sample Characteristics

Socio-demographic and health-related characteristics for participants and refusers are displayed in Table 1. Regarding predisposing factors, chi-square analysis revealed the only significant difference between program participants and refusers was that a significantly higher percentage of Non-Hispanic Whites were program participants (74%) compared to refusers (26%; $\chi^2(2, N = 262) = 8.31, p = .02$). Further, an independent samples *t*-test (2-tailed) showed refusers had a significantly higher number of comorbidities at admission ($M=5.71, SD=2.40$) compared to program participants ($M=5.02, SD=2.44; t(267) = 2.22, p = .03$).

Predictors of Program Participation

Table 2 depicts results of the logistic regression analysis predicting GSARP participation. Results indicate that predisposing factors largely predicted the likelihood of patients participating in the GSARP. As shown in Table 2, advanced age was associated with a reduction in the likelihood of program participation ($B = -.04, \text{Wald } \chi^2 = 4.17, \text{OR} = .96, p = .04$), specifically—based on the odds ratio—as age increases by one year, there was a 4% reduction in the odds of participating in the GSARP. Further, participants belonging to minority groups, including both Black Americans ($B = -.86, \text{Wald } \chi^2 = 5.65, \text{OR} = .43, p = .02$) and Hispanics ($B = -.92, \text{Wald } \chi^2 = 5.23, \text{OR} = .40, p = .02$), were less likely to participate in the program compared to Whites. Specifically, non-Hispanic Blacks and participants who identified as Hispanic/other were approximately 57% and 60% less likely to participate, respectively, when compared to Whites. Additionally, widowed patients were three times more likely to participate than those who were never married ($B = 1.44, \text{Wald } \chi^2 = 6.01, \text{OR} = 4.22, p = .01$).

Discussion

This study focused on identifying individual characteristics (predisposing, enabling, and need-related factors) that may be associated with likelihood of participating in a brief intervention program addressing alcohol and substance misuse issues in older adults receiving physical rehabilitation at a SNF. Results showed that only predisposing factors, as defined in Andersen's model¹⁸, were linked to greater odds of engaging in a brief substance misuse intervention while receiving rehabilitation at a SNF. Specifically, younger, White, and widowed patients were more likely to participate in the intervention.

The study included patients who were aged 55 years of age or older, and our results show that younger patients were more open to participating in the program. This finding confirms previous research on substance abuse treatment use and perceived treatment need among different age groups that showed that when comparing people 65+ years old with individuals aged 26–34, 35–49, and 50–64 years old, the 65+ age group was least likely to use treatment and perceive treatment need. Further, those aged 50–64 were similar to the younger age groups in their use of and perceived need for treatment⁶. Interestingly, the same study also found that the most common barrier to treatment for older adults was a lack of readiness to

stop use of alcohol and other substances, not the stigma attached to alcohol and substance abuse which was a more common treatment barrier reported by younger age groups.

Further, our finding that ethnic minorities were less likely to participate in the program compared to Whites is in line with previous research on alcohol and drug treatment utilization in older adults. A study found that among older adults with alcohol and substance misuse problems, both Black Americans and Hispanics were less likely to receive treatment when compared to Whites. The study also investigated predictors of perceived need for alcohol and substance use treatment, but no ethnic/racial differences were identified.⁶ Hence, while ethnic minorities may perceive their need for treatment to be similar to Whites, other barriers may prevent them from engaging in treatment. Although the intervention broke down some of the barriers to substance misuse treatment for older adults, such as inability to pay for the service (as the service was free) and transportation issues (the service was provided within the rehab facility), there were likely other barriers that impacted minority patients' program participation. Such barriers may have included the accumulation of prior negative experiences with health care providers, which may result in a general mistrust of the health care system as well as a desire to solely focus on engaging in the physical rehabilitation for their admitting condition in order to return home. Yet, another barrier may be related to the patients' health care providers in the community. Research has shown that health and social care providers of older adults often do not recognize the need for older adults to receive interventions, for example for hazardous drinking, because they view older adults' drinking habits as normative and are unsure as to whether there is anything that needs to be addressed. Additionally, some providers may perceive a stigma surrounding the topic of alcohol or substance misuse, and as a result, they are reluctant to discuss issues around drinking or substance misuse with their older patients.²⁷ It is likely that there are providers of older adults, especially those of minority older adults, who have neglected to identify and alert their older patients to their potentially dangerous substance misuse over the course of many years of care. Hence, previous experiences with and attitudes of their longtime community health care providers may have affected patients' decision to participate in the current substance misuse intervention in a post-acute care setting. In addition to previous experiences with health care providers and the healthcare system, there may be other barriers for racial/ethnic minorities in participating in substance misuse interventions. For instance, Clemens et al.²⁸ conducted a systematic review of quantitative and qualitative studies regarding the impact of mental health-related stigma on help-seeking. These researchers found that qualitative studies with Black American samples were more likely to mention subthemes of "‘weak', 'keeping it within the family' and 'non-disclosure'" (p. 9). Thus, although stigma may not be a primary barrier to participating in a substance use intervention program among older adults more generally⁶, substance use-related stigma *may* inhibit racial/ethnic minorities from participating in substance use interventions. Gary²⁹ argued that in the context of mental health help-seeking, individuals from racial/ethnic minority groups may experience double stigma such that they may encounter societal racism, including within the health care system, and also experience substance use-related stigma, ultimately leading to a decrease in likelihood of engaging in a substance use intervention.

In addition to differences in age and race/ethnicity, we also found that widowed patients compared to never married patients were more likely to participate in our program. Prior research has shown that being unmarried was associated with interest in alcohol and substance abuse treatment³⁰ and that being married was associated with decreased likelihood of treatment use.⁶ However, to our knowledge, there are no prior studies that have investigated widowhood specifically as a predictor of intervention utilization in older adults. We could speculate that widowed patients were more likely to participate after losing a close familial support provider (e.g., a spouse) – thus, they were more open to accept help from medical professionals in a time of need. In contrast, never married older adults may have had more informal supports in place. Future research should specifically examine the role of widowhood in the context of alcohol and substance misuse intervention among older adults.

The main limitation of the study was that we did not collect detailed information from patients regarding their reasons for refusing the intervention. Research has demonstrated that there are a variety of reasons why individuals may decide not to participate in treatment, which can include attitudinal and structural barriers.³¹ Future research investigating factors related to declining participation in such a substance misuse intervention must also assess older adults' specific barriers and reasons for not participating in the program. In particular, the complex issue of stigma perceived by older adults and/or their health care professionals as a barrier to participation in substance misuse treatment programs needs to be explored. Results from these future efforts will inform the design of more effective ways to engage patients in such interventions. Further, because the sample was predominately male, it was unclear whether the pattern of findings was widely generalizable to women. Substance misuse has been under-identified and particularly stigmatized among women³² Thus, it is possible that during the screening process, female patients were less likely to indicate issues with substance misuse.

Despite these limitations, this study offers insights into the characteristics of post-acute care patients that may refuse participation in a brief alcohol and substance misuse intervention. As more substance misuse intervention programs in SNFs are developed and implemented, results from this study can help clinicians identify patients who may be more likely to refuse needed interventions and develop strategies to engage those patients who are more likely to refuse participation. For example, based on the knowledge that patients who are ethnic minorities may be more reluctant to engage in the program, the program director/counselor could follow-up with patients who refuse to participate to explore their specific reasons and motivations in detail. This exploration could be guided by a framework that outlines how various domains of culture influence people's behaviors. As suggested by Castro and Gildar³³, the counselor could explore the following domains (a) the individual domain of the person (e.g. beliefs, attitudes, values); (b) the interpersonal domain involving social relations with family members, and (c) the environmental domain (community factors including ambient stressors, community norms, civic rules, and sociopolitical effects, including racial discrimination) issues, reservations, fears, and motivations around declining program participation. Adding this follow-up to the intervention's procedures will further ensure that the program is culturally appropriate. Overall, this study provides information about the characteristics of older adults who may be less likely to participate in a brief alcohol and

substance misuse intervention in a SNF setting and offers important directions for future investigation with a particular focus on culturally appropriate strategies.

Acknowledgements:

The authors would like to thank The New Jewish Home's current and past key personnel that envisioned and implemented the intervention.

Funding: This work was supported by The Patrick and Catherine Weldon Donaghue Medical Research Foundation.

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Highlights

- Guided by Andersen's Model of Health Care Utilization, this study identified individual characteristics (predisposing, enabling, and need-related factors) associated with participation in a substance misuse intervention program designed for older adult post-acute rehabilitation patients.
- Predisposing factors largely predicted the likelihood of patients participating in the substance misuse intervention program. Advanced age and being African-American or Hispanic were associated with a reduction in the likelihood of program participation. Being widowed increased chances of program participation.
- Results from this study can help clinicians identify patients who may be more likely to refuse needed interventions and also engage those patients who are more likely to refuse participation.

Table 1.

Sociodemographic and Health-related Characteristics of Program Participants and Refusers

	Program Participants (n=177)		Program Refusers (n=94)		Sign
	N (%)	M (SD)	N (%)	M (SD)	P
Age		67.80 (8.20)		68.80 (8.50)	.34
Gender (female)	59 (33.33)		35 (37.23)		.52
Ethnicity/Race					.02*
Non-Hispanic Black	41 (54.70)		34 (45.33)		
Hispanic and Other	33 (61.11)		21 (38.90)		
Non-Hispanic White	98 (73.70)		35 (26.32)		
Marital Status					.28
Never married/single	69 (61.61)		43 (38.40)		
Married	39 (68.42)		18 (31.60)		
Separated/divorced	42 (63.64)		24 (36.40)		
Widowed	24 (80.00)		6 (20.00)		
Cognitive Status					.34
No Impairment	132 (76.74)		69 (75.82)		
Moderate Impairment	36 (20.93)		17 (18.70)		
Severe Impairment	4 (2.32)		5 (5.50)		
PHQ-9 (no depressive symptoms)	152 (85.90)		83 (89.25)		.59
Social Support during Stay (yes=1)	132 (74.60)		72 (76.60)		.71
Behavioral Symptoms (yes=1)	5 (2.82)		5 (5.32)		.30
Pain (present=1)	100 (56.82)		63 (68.50)		.06
Number of High Dependence ADLs		5.60 (1.80)		5.34 (2.00)	.35
Comorbidities Count		5.02 (2.44)		5.71 (2.40)	.03*
Number of Substance Misuse Issues		1.21 (.50)		1.14 (.40)	.18
Average Length of Stay (days)		27.73 (22.60)		28.00 (19.72)	.92

Note.

* $p < .05$ indicates significant group differences as analyzed by t -tests [$df=267$] and chi-square analysis

Table 2.

Logistic Regression Analysis for Program Participation

	B	SE	Wald χ^2	df	OR (95% CI)	p
<i>Predisposing</i>						
Age	-.04	.02	4.17	1	.96 (.92 – 1.00)	.04*
Gender (male=1)	.10	.33	.09	1	1.11 (.58 – 2.13)	.76
Race/Ethnicity (Reference: White)						
Non-Hispanic Black	-.86	.36	5.65	1	.43 (.21 – .86)	.02*
Hispanic and Other	-.92	.40	5.23	1	.40 (.18 – .88)	.02*
Marital Status (Reference: single)						
Married	.52	.41	1.64	1	1.70 (.76 – 3.71)	.20
Separated/divorced	.23	.37	.40	1	1.30 (.61 – 2.60)	.53
Widowed	1.44	.60	6.01	1	4.22 (1.34 – 13.35)	.01*
<i>Enabling</i>						
Cognitive Status (Reference: intact)						
Moderate Impairment	.65	.41	2.43	1	1.91 (.85 – 4.30)	.12
Severe Impairment	-.94	.90	1.13	1	.39 (.07 – 2.21)	.30
PHQ-9 (Reference: No depression)						
Mild Depression	-.12	.52	.05	1	.90 (.32 – 2.50)	.83
Moderate or Severe Depression	.01	.92	.00	1	1.01 (.17 – 6.07)	.99
Social Support during Stay (yes=1)	-.32	.36	.77	1	.73 (.36 – 1.48)	.38
<i>Need-Related</i>						
Behavioral Symptoms (yes=1)	-.30	.77	.15	1	.74 (.16 – 3.40)	.74
Pain (present=1)	-.61	.32	3.51	1	.55 (.30 – 1.03)	.06
Number of High Dependence ADLs	.06	.008	.47	1	1.06 (.90 – 1.24)	.50
Co-Morbidities Count	-.09	.06	2.29	1	.91 (.81 – 1.03)	.13
Number of Substance Misuse Issues	.42	.36	1.33	1	1.52 (.75 – 3.06)	.25

Note. OR= Odds Ratio; Nagelkerke $R^2=.16$; Omnibus test of model coefficients $\chi^2= 30.61^*$ [$df=17$];

* $p < .05$.