Articles

Program Characteristics and Readmission Among Older Substance Abuse Patients: Comparisons With Middle-Aged and Younger Patients

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Abstract

Older substance abuse patients were compared to middle-aged and younger patients before, during, and after an index episode of inpatient care in 1 of 88 substance abuse treatment programs. Associations between program characteristics and readmission rates adjusted for key differences in the types of patients in different programs varied by age group. Among older patients, more structured program policies, more flexible rules about discharge, more comprehensive assessment, and more outpatient mental health aftercare were associated with lower casemix-adjusted readmission rates. More intensive treatment was associated with higher-than-predicted readmission. By contrast, among younger patients, more family involvement in assessment and treatment, community consultation, and treatment emphasizing the development of social and work skills were associated with lower casemix-adjusted readmission rates. The findings suggest that intensive, directed treatment may be more effective for younger substance abuse patients, whereas a more supportive treatment regimen in a well-organized program and prompt outpatient aftercare may be especially helpful for older patients.

Late-middle-aged and older individuals with alcohol and drug dependence problems represent up to 20% of the patients seen in substance abuse treatment programs.[1] Researchers have begun to learn more about these patients' prior history of treatment, patterns of diagnoses, and use of inpatient and outpatient health care services.[1,2] However, very little is known about the treatment experiences and outcomes of older inpatients who receive treatment that targets their substance abuse problems specifically. Even less is known about how characteristics of substance abuse programs affect these patients' outcomes and whether specific program factors have differential effects on older patients compared to those on younger patients.

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This study compares older patients to middle-aged and younger patients treated in a sample of 88 inpatient substance abuse programs. After describing these patients' diagnostic characteristics and prior care, the study focuses on their length of inpatient care and on their outpatient mental health care and readmission following an index episode of treatment. Then, for each age group, program casemix is controlled and connections are examined between program characteristics and patients' 1-year readmission for inpatient substance abuse or psychiatric care.

Diagnoses and Prior Care

Only a few studies have examined the prevalence of different diagnoses and the history of prior care among older substance abuse patients.[3,4] In a comparison of patients drawn from a wide range of treatment settings, age differences were found in diagnoses and chronicity of substance abuse problems.[1] Older substance abuse patients were more likely than younger patients to have only alcohol-related diagnoses, including alcohol psychoses, and were somewhat less likely to have psychiatric diagnoses.[5] A much higher percentage of older patients than middle-aged or younger patients had concomitant medical disorders.[6]

About 40% of the older patients studied in an earlier project had had inpatient substance abuse or psychiatric care during the year before an index episode of inpatient care.[7] When a 4-year interval was considered, about 60% of older patients had had a prior episode of inpatient substance abuse or psychiatric care.[2] This study focuses on patients treated in programs that specifically target substance abuse and compares the diagnoses and prevalence of prior treatment among older, middle-aged, and younger patients.

Length of Treatment, Outpatient Mental Health Aftercare, and Readmission

Some prior studies have suggested that older patients have better outcomes of substance abuse treatment than do their younger counterparts,[2,8,9] but others have not.[10] In fact, Janik and Dunham[11] found that older patients had somewhat worse treatment outcome than did younger patients; this may reflect older patients' more chronic disorders and the fact that many substance abuse programs use an intensive, confrontational treatment style that may not be as well suited for older patients as it is for younger patients. Here, the focus is on older and younger patients treated in the same programs and comparing age-group readmission rates for additional inpatient care.

The length of the inpatient episode and outpatient mental health aftercare are two key aspects of substance abuse treatment that are often associated with better outcome. Among mixed-age groups of substance abuse patients, longer episodes of inpatient treatment are associated with better drinking-related and functioning outcomes[8,12,13] and lower readmission rates.[14,15] Longer episodes of care are also associated with lower readmission rates among late-life substance abuse patients treated in a diverse set of substance abuse and other programs.[2,7] Because of their more complex and chronic problems, older patients may need longer episodes of specialized inpatient care than do younger patients.[16,17]

More use of outpatient mental health aftercare is also associated with better posttreatment functioning.[8,9,18-20] For example, mixed-age groups of substance abuse patients who were more likely to obtain two or more outpatient mental health visits during the month after discharge from inpatient care had lower-than-expected readmission rates.[14,15] Because many older patients have a history of relapse after treatment and lack family and community resources, they may have an especially strong need for continuing outpatient aftercare. The focus here is on the length of inpatient care and outpatient mental health aftercare and on their associations with readmission among older patients versus middle-aged and younger patients.

Program Characteristics and Patients' Outcomes

Specialized programs for older patients are often described as an essential service for supporting recovery in late-life substance abuse, and there is some anecdotal evidence to support this idea.[21,22]

More important, some studies have suggested potential "active ingredients" of treatment that may promote older patients' recovery. These aspects of treatment include (1) structure as reflected by firm and consistent policies and a regular schedule of activities, (2) flexibility in allowing patients to stay in the program even if they do not immediately maintain abstinence, (3) an orientation toward self-management and the development of social and problem-solving skills, and (4) a low-key approach to treatment with relatively little emphasis on confrontation and self-disclosure.[17,21-24]

Here, three sets of program factors are identified that may influence patients' outcomes: (1) *program size and staffing*; (2) *program policies and services* such as rules governing patients' behavior, patient assessment, available treatment modalities, and the amount or intensity of treatment; and (3) *treatment orientation* such as social skills training, rehabilitation, and a family systems approach.[8,25]

PROGRAM SIZE AND STAFFING

Research with mixed-age groups shows that patients in smaller, better-staffed programs tend to experience more positive treatment outcomes,[26] but the findings are not strong or consistent.[14] Because of their associations with a more supportive and active treatment environment,[27,28] however, smaller size and richer staffing may contribute to better outcome by motivating patients to engage in treatment, including outpatient follow-up care. Studies of older substance abuse patients also imply that smaller, better-staffed programs foster social attachments that encourage more positive outcomes.[17,23,29]

POLICIES AND SERVICES

With respect to program policies, mixed-age substance abuse patients seem to do better in relatively well-structured programs with clear rules and well-defined expectations.[30,31] Moreover, older patients may have a stronger need for organization and structure than do younger patients.[17,23] Because it is important to keep patients in treatment, however, flexible rules that enable patients to remain in the program even if they fail to abstain from substance use may be associated with lower relapse and readmission rates.[15]

Comprehensive assessment and the inclusion of family members and community agencies in the process of treatment planning should be associated with better outcome among both older and younger patients. In an analysis of mixed-age substance abuse patients, more emphasis on including information obtained from patients' family members and friends in treatment planning was associated with lower than expected program readmission rates.[14] Similarly, Atkinson, Tolson, and Turner[29] suggest that spouse and family involvement in treatment promotes more treatment compliance among older substance abuse patients. By contrast, an intensive and demanding treatment regimen, especially in the context of age-integrated groups that have only a small minority of older patients, may be associated with worse outcomes.[17]

TREATMENT ORIENTATION

Studies of mixed-age groups show that an orientation toward learning practical skills and preparing patients for community living is associated with better patient morale and longer tenure in the community.[32] Programs that have more open interactions between patients and staff, qualities that tend to characterize therapeutic community programs, also have better patient outcomes.[33] Descriptions of successful programs for older patients also emphasize the importance of social and problem-solving skill development. In contrast to the intensive, directed treatment that often characterizes a therapeutic community, however, these descriptions point to the value for older patients of a gentler, nonconfrontational treatment style and general emotional and social support.[17,21-24,29]

In summary, after comparing the diagnostic characteristics and prior care of older, middle-aged, and younger substance abuse patients, this study examines these patients' length of inpatient

treatment, involvement in outpatient mental health aftercare, and readmission. Then the focus is on the associations between specific program characteristics intended to foster patient improvement and casemix-adjusted rates of readmission for inpatient substance abuse or psychiatric care among the three age groups.

Sample and Methods

Sample of Patients

The sample is composed of 33,323 substance abuse patients discharged from 88 Department of Veterans Affairs (VA) substance abuse treatment programs in fiscal year 1991 (FY91). These 88 programs were selected from a sample of 101 programs[14] because they discharged a minimum of 10 substance abuse patients during FY91 who were 55 years of age or older. The programs provide medical and support services for patients with substance abuse problems who require 24-hour supervision in a hospital setting.

The sample was divided into 18- to 34-year-old patients ($N = 6{,}798$), 35- to 54-year-old patients ($N = 20{,}904$), and patients 55 years of age or older ($N = 5{,}621$). These age groups are comparable with those used in several earlier studies that have examined the associations between patients' age and substance abuse treatment processes and outcomes.[1,2,6,7,10,11] On average, the older patients were 62 years of age compared to 42 years for the middle-aged group and 31 years for the youngest group (Table 1). In all three age groups, 97% or more of the patients were men. A larger proportion of the older patients were Caucasian and married, and a smaller proportion were African-American.

The data were obtained from the VA nationwide computerized inpatient discharge (Patient Treatment File [PTF]) and outpatient (Outpatient Clinic [OPC]) databases. In addition to demographic characteristics, information was obtained from these databases on four sets of variables.

First, *diagnostic characteristics* are based on ICD-9-CM[34] diagnoses for the index episode of inpatient care (i.e., the first episode of care during FY91) and any other inpatient episodes during the prior 4 years. Specifically, the focus is on alcohol and drug dependence (ICD-9-CM categories 303-305), alcohol and drug psychoses (ICD-9-CM categories 291 and 292), psychiatric diagnoses (ICD-9-CM categories 290, 293-302, and 306-319), and medical diagnoses.

Second, *prior inpatient and outpatient care* includes (1) the number of episodes of inpatient care in which patients had either an ICD-9-CM substance abuse diagnosis or an ICD-9-CM psychiatric diagnosis or both, or only a medical diagnosis, during the 4 years before the index episode; and (2) whether patients had outpatient visits during the prior year for mental health or medical care and, if so, the number of visits for such care. Outpatient mental health care includes visits for specialized substance abuse and psychiatric care.

Third, *postdischarge outpatient mental health care* was examined for the 1-month interval after the index episode of inpatient care. Because of prior findings with mixed-age patients,[14,15] the focus is specifically on whether patients obtained two or more visits for outpatient mental health care prior to any readmission for inpatient substance abuse or psychiatric treatment.

Fourth, *readmission rates* for substance abuse or psychiatric disorders were obtained for the 1-year interval after discharge from the index episode of inpatient care. Readmissions were into any of the 172 VA inpatient facilities nationwide.

Survey of Program Characteristics

As part of a multifaceted evaluation, coordinators in the 88 programs completed two surveys of their programs' characteristics. The coordinators were sent an introductory letter explaining the project and two surveys that covered program staffing, policies, services, and treatment orientations. After extensive mail and telephone follow-up, complete data were obtained on all 88 programs.

Table 1
Substance Abuse Patients' Demographic Characteristics, by Age

Demographic Characteristic	Age Group			
	Younger (age 18-34)	Middle-Aged (age 35-54)	Older (age 55+)	
Average age (years)	30.6	42.3	61.8	—
Percentage men	97.1[a]	99.2[b]	99.7[a,b]	247.2*
Percentage Caucasian	54.1[a,b]	63.6	79.4[a,b]	872.0*
Percentage African-American	39.3[a]	29.4	14.5[a,b]	927.0*
Percentage married	20.5[a]	24.3	30.8[a,b]	179.8*

Note: Means that share a common superscript differ significantly ($p < .05$) according to chi-square or the Student-Newman-Keuls test.
*$p < .01$.

The first survey was composed of the Drug and Alcohol Program Structure Inventory (DAPSI),[35] which focuses on characteristics of the staff and patients in substance abuse programs and on aspects of program policies and services. The second survey was composed of adapted versions of two subscales from the Policy and Service Characteristics Inventory (PASCI)[36] and of the Drug and Alcohol Program Treatment Inventory (DAPTI).[37]

PROGRAM STRUCTURE

To focus on this area, two indexes were drawn from the DAPSI: (1) *size* of program as reflected by the total number of patients ($\bar{X} = 32.5$, $SD = 14.2$) and (2) *staff/patient ratio* ($\bar{X} = 0.57$, $SD = 0.20$).

POLICIES AND SERVICES

Using items from the DAPSI and PASCI, the focus was on two aspects of program policies: (1) *Structured Policies* (11 items rated on 4-point scales, alpha = .69, $\bar{X} = 23.8$, $SD = 4.0$), which reflect how much program policies shape patients' patterns of daily living, such as rules about when to eat meals and how to decorate their rooms, and (2) *Flexible Discharge Rules* (10 items rated on 3-point scales, alpha = .75, $\bar{X} = 16.2$, $SD = 2.6$), which reflect program policies that reduce the likelihood of patients' premature discharge, such as allowing patients to remain in the program even when they do not fully comply with program rules or treatment plans.

To focus on program diagnostic and treatment services, seven indexes were drawn from the DAPSI and DAPTI: (1) *Comprehensive Assessment* (five items; $\bar{X} = 45.1$, $SD = 33.8$) is the average percentage of program patients who receive structured assessments, such as a diagnostic clinical interview and standardized assessments of intellectual functioning, psychopathology, mood, and personality; (2) *Family or Friend Interviews* (one item; $\bar{X} = 33.1$, $SD = 29.8$) is the percentage of program patients whose treatment planning includes interviews with family members or friends; (3) *Family Treatment* (one item; $\bar{X} = 21.5$, $SD = 20.5$) is the percentage of program patients seen in couple or family treatment; (4) *Community Consultation* (one item; $\bar{X} = 28.0$, $SD = 27.2$) is the percentage of program patients for whom treatment planning includes consultation with community service agencies or courts; (5) *Psychoeducational Emphasis* (one item; $\bar{X} = 38.2$, $SD = 24.1$) is the number of educational classes and lectures about substance abuse that patients attend while in the program; (6) *Group Treatment* (one item; $\bar{X} = 8.6$, $SD = 6.5$) is the number of different kinds of groups (excluding self-help groups) program patients typically attend each week; and (7) *Intensity of Treatment* (two items; $\bar{X} = 30.7$, $SD = 20.2$) is the total number of individual and group therapy sessions patients typically attend while in the program.

TREATMENT ORIENTATION

The DAPTI was used to consider four treatment orientations. Each of these four scales is composed of eight items rated on 4-point scales varying from *none or very little* (0) to *primary focus* (3) of treatment: (1) *Social Skills* (alpha = .85, $\bar{X}$ = 15.3, *SD* = 4.4) measures the emphasis on teaching patients how to enhance assertiveness and communication skills; (2) *Rehabilitation* (alpha = .86, $\bar{X}$ = 10.4, *SD* = 4.7) assesses the focus on developing better work habits and acquiring new job skills; (3) *Therapeutic Community* (alpha = .71, $\bar{X}$ = 15.1, *SD* = 3.8) reflects the emphasis on accepting personal responsibility for decisions and behavior and assigning patients chores or duties as part of treatment; and (4) *Family* (alpha = .89, $\bar{X}$ = 12.7, *SD* = 5.0) reflects the emphasis on strengthening marital and family systems and involving the spouse and other family members in treatment.

Results

The analyses focus first on age group differences in diagnostic characteristics and in inpatient care during the 4 years before the index episode and outpatient care during the year before the index episode. Next, in program-level analyses (*N* = 88), the three age groups are compared on the length of the index episode, outpatient mental health care during the month after discharge from the index episode, and readmission during the year after discharge from the index episode; intercorrelations among these variables are also examined. Then, after controlling for differences in the types of patients seen in different programs (program casemix), associations are examined between program characteristics and 1-year readmission rates for each of the three age groups.

Diagnostic Characteristics and Prior Care

First, one-way analyses of variance and Student-Newman-Keuls tests were conducted for continuous variables, and chi-square tests were conducted for categorical variables to compare the three age groups on diagnostic characteristics and prior treatment. Compared to younger patients, older patients were less likely to have only an alcohol or a drug dependence diagnosis and were more likely to have an alcohol or a drug psychosis diagnosis (Table 2). For example, 23.6% of older patients had alcohol or drug psychosis diagnoses compared to 10.1% of the younger patients. A substantial proportion of all three groups of patients had medical diagnoses; the percentage was higher among older patients than it was among younger and middle-aged patients.

Older patients were more likely to have had prior inpatient care for a substance abuse or psychiatric disorder and for a medical disorder (Table 2). Specifically, almost 60% of the older patients had had one or more episodes of inpatient substance abuse or psychiatric care during the prior 4 years as compared to 46% of the younger patients. With respect to outpatient care, older patients were somewhat less likely to have received outpatient mental health care during the year before the index episode than were younger and middle-aged patients; they also received less intensive care than did the middle-aged patients. By contrast, older patients had more intensive outpatient medical care than did the other two groups of patients.

Length of Index Episode, Mental Health Aftercare, and Readmission

Program-level analyses (*N* = 88) showed that older patients received the same length of inpatient care in the index episode as did younger and middle-aged patients. However, they were less likely to obtain mental health aftercare (Table 3). Specifically, only 25% of older patients had two or more mental health visits during the month after discharge from the index episode, as compared to more than 30% of patients in each of the other two age groups. As shown in Table 3, all three groups had relatively high 1-year readmission rates; older patients' readmission rates were higher than those of younger patients.

Table 2
Substance Abuse Patients' Diagnostic Characteristics and Prior Treatment, by Age

	Age Group			
	Younger (age 18-34)	Middle-Aged (age 35-54)	Older (age 55+)	
Diagnostic characteristic				
Alcohol or drug dependence only	54.8[a]	40.7	41.0[a]	435.1*
Alcohol or drug psychosis	10.1[a]	14.5[b]	23.6[a,b]	455.2*
Psychiatric diagnosis	35.1	44.8[b]	35.3[b]	298.3*
Medical diagnosis	71.4[a]	83.5[b]	93.8[a,b]	1,107.0*
Inpatient treatment				
With a substance abuse or psychiatric diagnosis	46.2[a]	57.1[b]	59.9[a,b]	304.6*
With only a medical diagnosis	9.5[a]	14.2[b]	27.5[a,b]	837.4*
Outpatient treatment				
Mental health				
Percentage of patients	61.7[a]	66.4[b]	59.2[a,b]	123.5*
Average number of visits (for those with one or more visits)	7.7	11.6[b]	8.7[b]	34.4*
Medical				
Percentage of patients	97.4[a]	98.7	98.8[a]	59.1*
Average number of visits (for those with one or more visits)	8.3[a]	12.1[b]	17.3[a,b]	243.7*

Note: Means that share a common superscript differ significantly ($p < .05$) according to chi-square or the Student-Newman-Keuls test.

Table 3
Substance Abuse Patients' Length of Index Episode, Mental Health Aftercare, and Readmission Rates, Program Level by Age

	Age Group			
	Younger (ages 18-34)	Middle-Aged (ages 35-54)	Older (age 55+)	F
Average length of index episode (days)	22.3	22.7	22.7	0.18
Two or more mental health visits during 1 month (percentage of patients)	30.8[a]	32.2[b]	25.0[a,b]	5.76*
Readmitted within 1 year (percentage of patients)	34.8[a]	41.8	39.0[a]	7.36*

*$p < .01$.
Note: Means that share a common superscript differ significantly ($p < .05$) according to chi-square or the Student-Newman-Keuls test.

The next analysis examined program-level associations ($N = 88$) between the length of the index episode of care, number of sessions of outpatient mental health care, and readmission separately for each age group (not shown). Among older patients, those who had longer episodes of inpatient care and those who obtained two or more sessions of outpatient mental health care during the month after discharge from the index episode were less likely to be readmitted ($r = -.33$ and $-.25$, $p < .01$ and $.05$, respectively). By contrast, among middle-aged and younger patients, longer index episodes were linked to lower readmission ($r = -.44$ and $p < .01$ in both cases), but there was no significant association between outpatient mental health aftercare and readmission.

Program Characteristics and Readmission

The final set of analyses focused on specific program characteristics associated with variations in program readmission rates after adjusting for the characteristics of the patients in each program (program casemix). Logistic regression analyses indicated that seven patient characteristics tended to predict readmission in each of the three age groups: (1) unmarried status, more prior inpatient episodes for treatment of (2) substance abuse or psychiatric disorders and (3) medical disorders, more prior outpatient (4) mental health and (5) medical care, and (6) an alcohol or drug psychosis diagnosis or a (7) psychiatric diagnosis in the index episode or a prior inpatient episode. These seven characteristics were used to obtain a predicted readmission status for each patient.

This predicted readmission status was aggregated to the program level separately for older, middle-aged, and younger patients, and a predicted readmission rate was obtained for each age group of patients in each program. Predicted readmission accounted for 50%, 44%, and 56% of the variance in actual readmission among older, middle-aged, and younger patients, respectively. To obtain casemix-adjusted readmission indexes for each age group (i.e., readmission indexes that take into account the key differences in patients' characteristics across programs), the actual readmission rate was divided by the predicted readmission rate. Higher scores on these readmission indexes reflect worse program performance, that is, a higher readmission rate than that predicted on the basis of the types of patients in the program. The final step was to examine the associations between program characteristics and these casemix-adjusted readmission indexes.

As shown in Table 4, three program characteristics were associated with lower-than-predicted readmission among older patients: more structured program policies, more flexible rules about discharge, and more comprehensive assessment. Programs in which older patients had longer index episodes and were more likely to obtain outpatient mental health aftercare also had lower-than-predicted readmission rates. By contrast, programs with more emphasis on psychoeducational activities, group treatment, and more intensive treatment were associated with higher-than-predicted readmission (Table 4).

Except for the emphasis on comprehensive assessment, several different program characteristics were associated with lower-than-predicted readmission among younger patients. Younger patients in programs with more focus on family assessment and treatment, community consultation in treatment planning, and more intensive treatment had lower-than-predicted readmission rates (Table 4). Readmission rates were also lower than predicted in programs more oriented toward social skills development, rehabilitation, and a therapeutic community approach. The program characteristics associated with lower-than-predicted readmission among middle-aged patients were similar to those identified for younger patients except that social skills, therapeutic community, and family treatment orientations did not predict readmission.

To summarize how well the program characteristics predicted casemix-adjusted readmission rates, regression analyses were conducted in which the program characteristics that were significantly ($p < .10$) associated with readmission in each age group were entered. As shown in the bottom row of Table 4, these program characteristics accounted for 25% of the variance in casemix-adjusted readmission among older patients, 29% of the variance among middle-aged patients, and 39% of the variance among younger patients.

Table 4

Correlations Between Program Characteristics and Casemix-Adjusted Readmission Indexes, Program Level by Age

	Younger (age 18-34)	Middle-Aged (age 35-54)	Older (age 55+)
Program structure			
Size	.15	.07	.02
Staff/patient ratio	.12	.03	–.16
Policies and services			
Structured policies	–.16	–.13	–.21**
Flexible discharge rules	.03	–.11	–.25**
Comprehensive assessment	–.24**	–.16	–.21*
Family/friend interviews	–.43***	–.38***	–.15
Family treatment	–.28***	–.19*	.09
Community consultation	–.30***	–.26***	–.10
Psychoeducational activities	.07	.16	.19*
Group treatment	.03	–.01	.18*
Treatment intensity	–.22*	.04	.20*
Treatment orientation			
Social skills	–.29***	–.10	.03
Rehabilitation	–.29***	–.23**	–.05
Therapeutic community	–.30***	–.17	.12
Family	–.33***	–.13	–.03
Program Use			
Average length of index episode	–.39***	–.40***	–.25**
Two or more mental health visits	–.11	–.22**	–.17*
R^2	.39	.29	.25

Note: Due to missing data, program *N*s vary between 73 and 88.
$^{*}p < .10$; $^{**}p < .05$; $^{***}p < .01$.

Discussion

This study compared older substance abuse patients to middle-aged and younger patients treated in 88 specialized substance abuse programs and identified program characteristics associated with casemix-adjusted readmission rates. The findings highlight the fact that older substance abuse patients are a distinct group whose characteristics, service use, and treatment needs merit specific attention.

Diagnoses and Prior Care

Consistent with results on patients drawn primarily from nonspecialized programs,[1] older patients had more complex and chronic substance abuse problems than did their younger counterparts. Specifically, older patients had more alcohol or drug psychoses and medical diagnoses and had a history of heavier past use of inpatient substance abuse, psychiatric, and medical services. In fact, confirming the idea that standard treatment approaches do not work well for older patients, more than 60% of these patients had had recent prior inpatient care for their substance abuse disorders.

The prevalence of acute alcohol-related psychoses may be higher among older patients because of a decreasing tolerance to alcohol and greater severity and duration of withdrawal symptoms.[16]

It is unclear why the prevalence of psychiatric diagnoses is somewhat lower in the older group (but see Finlayson et al.[3]). One possibility is that there is a reduction in overt psychiatric disturbance with age[5] or that some psychiatric symptoms are attributed to normal aging. Alternatively, older substance abuse patients may receive less thorough psychiatric assessments, or more attention may be paid to medical disorders associated with their substance abuse. A higher premature death rate among more severely disturbed patients may also account for this finding.[38]

Length of Inpatient Care, Mental Health Aftercare, and Readmission

Consistent with Janik and Dunham,[11] older patients showed somewhat poorer outcomes than did younger patients. This finding may reflect program staff's insufficient responsiveness to the needs of older patients, who often have more long-standing and recalcitrant substance abuse problems than do younger patients. It may also reflect older patients' minority status in programs that are oriented primarily toward intensive, confrontational treatment, averaging more than 30 treatment sessions in more than eight different types of groups each week.

Despite the heightened complexity and chronicity of their substance abuse disorders, older patients' average length of stay in the index episode was the same as that for younger patients. Moreover, consistent with earlier findings,[1] older patients were less likely to receive outpatient mental health aftercare. On average, only 25% of older patients received two or more outpatient mental health visits during the month after discharge. Given many older patients' relatively isolated situation in the community and their long-standing substance abuse problems and lack of social resources, these findings imply that health care providers underestimate older patients' needs for continued supportive residential and outpatient care.

The importance of such support is highlighted by the fact that older patients who received longer episodes of inpatient care and more mental health aftercare had lower casemix-adjusted readmission rates. This is consistent with a growing body of evidence that continued engagement in treatment is beneficial for older patients[2,7] as well as for mixed-age groups of patients.[8,12,14] One important area for future research is to identify the extent to which less expensive community residential care can contribute to maintaining older patients' involvement in treatment and substitute for high-cost acute inpatient care.[39]

In prior work, postdischarge outpatient mental health care was associated with lower readmission rates among mixed-age substance abuse patients.[14,15] Here, the association between outpatient mental health aftercare and lower readmission was stronger among middle-aged and older patients than it was among younger patients. Perhaps middle-aged and older patients have fewer personal and social resources than do younger patients and therefore benefit more from continuing mental health aftercare services. More broadly, more research is needed on the optimum timing and intensity of outpatient mental health aftercare among both older and younger patients.

Program Characteristics and Readmission

Program size and staff/patient ratio were not directly related to readmission. These findings are similar to earlier results on mixed-age groups of patients.[14] However, by creating a cohesive and well-organized treatment environment,[30,32] smaller program size may facilitate continuity of care and thereby contribute to better treatment outcome. In support of this idea, the data showed that smaller program size was associated with a higher percentage of program patients in mental health aftercare.

POLICIES AND SERVICES

Older patients in programs that had more structured policies, more flexible rules about early discharge, more comprehensive assessment, and less intensive treatment had lower-than-expected readmission rates. These findings suggest that older patients may do better in programs that place less emphasis on self-disclosure and confrontation.[17,23] More intensive, directed treatment may be overly demanding for older patients in that it often reflects a variety of somewhat discrepant

treatment orientations. Older patients' cognitive impairments may limit their ability to integrate and benefit from divergent treatment approaches. Similar to substance abuse patients with psychiatric disorders,[15] older patients may do better in programs that have fewer treatment components and a more integrated, conceptually consistent treatment orientation.

The findings also suggest that older patients may be more likely to improve where more order is imposed, but there is also some room to overstep behavioral bounds without being discharged from the program. This is consistent with prior research showing that desirable treatment outcomes are promoted by more structured, directive programs,[30,31,40] and, where patients have more chronic problems, by some leniency of behavioral expectations.[15] A well-organized program may be especially helpful for older patients because, due to retirement and social isolation, they have less structure built into their daily routine and such a program teaches them how to maintain a regular pattern of activities.

In general, more comprehensive assessment and inclusion of family members and community agencies in treatment planning is associated with better treatment outcome;[14] this was the case for younger and middle-aged patients here. The structured assessment procedures used in many substance abuse programs, such as standardized scales to measure cognitive, affective, and personalty characteristics, appear to be helpful in formulating specific treatment and discharge plans for all age groups. In addition, such activities reflect a program's orientation toward understanding each patient's disorder and reintegrating the patient into family and community life.

Among older patients, however, family and community involvement in treatment planning were not associated with lower readmission. Older, chronic patients may have eroded their family and community support due to their long history of substance abuse. Even after 4 years of stable remission, older problem drinkers still have less spousal support than do non-problem drinkers.[41] For older patients, more intensive, long-term interventions may be needed to reestablish relationships with family members and friends and for these individuals to see that the patient's remission is maintained over time.

TREATMENT ORIENTATION

Treatment orientation was an important influence on readmission for middle-aged and younger patients but had almost no effect on older patients. A stronger orientation toward learning work skills was associated with lower readmission in the middle-aged group. In addition, programs with more emphasis on social skills training, personal responsibility as reflected by a therapeutic community program, and family treatment were associated with lower readmission among younger patients. The deterioration or loss of work, family, and other community roles may make these components less relevant for older patients. In addition, because younger patients have less chronic substance abuse disorders, the treatment environment may have more influence on them than it does on older patients. In this respect, substance abuse problems may be somewhat less responsive to social influences among individuals with long-standing problems than it is among individuals with recent-onset alcohol problems.[41]

It is also likely that there is a better match between these treatment approaches and the developmental needs of younger patients compared to older patients. As already mentioned, older substance abuse patients may have eroded their family support or have family issues different from those that are typically the focus of family therapy sessions for younger patients. Social skills and work-oriented rehabilitation training may also be geared more closely to younger patients' needs, such as the development of job-seeking and parenting skills.

Implications for Mental Health and Substance Abuse Services Delivery

This study confirms that older substance abuse patients are a distinct group whose complex diagnoses and heavy service use warrant closer examination. One issue to pursue is the formulation

of program policies and staff education to ensure that these patients will receive care commensurate with the severity of their substance abuse and psychiatric problems.

The findings imply that supportive, well-organized, less intensive treatment approaches may be especially important for older patients' treatment outcomes. Program staff probably should develop more flexible expectations for older patients' treatment participation and specialized program components that emphasize problems common in late-life substance abuse. One promising idea involves elder-specific groups oriented toward harm reduction and the promotion of healthy lifestyles, learning how to solve current problems, and the provision of support that is not contingent on abstinence.[42] In addition, more emphasis can be placed on standardized diagnostic and psychosocial assessment and on policies that structure patients' daily living activities; these program components contribute to better outcomes among older patients and may benefit younger patients as well.

This study also highlights the importance of longer episodes of inpatient care and postdischarge outpatient mental health care in preventing readmission. Program managers can use these findings to help educate insurers and managed care providers about the value of appropriate inpatient care and timely outpatient care for substance abuse patients. By exerting some control over these two aspects of care, program coordinators and policymakers can help to reduce older substance abuse patients' readmission rates. Program staff can clarify for patients the rationale for longer treatment, prevent situations associated with early dropout, and place patients in responsible roles that integrate them into the life of a program. Further, they can use written contracts, telephone follow-up, and case management to ensure that patients enter and remain in outpatient aftercare. In this respect, an immediate aftercare visit improves compliance with ongoing aftercare.[43] Another way to enhance participation in aftercare is for patients to enter group treatment in an aftercare clinic while they are still in an inpatient program.[44]

The specific characteristics of the sample and database also raise issues for further research. The sample was composed entirely of VA programs and almost entirely of men; thus, to estimate the generality of the findings, these issues should be examined in samples of community programs that include representative groups of women and men. Although the data needed to make precise comparisons are not readily available, VA inpatient substance abuse programs' core services and treatment orientations are roughly comparable with those of other substance abuse programs in the public and private sector.[35] However, there is little or no information about the extent to which the content of treatment or the quality of care differs across sectors. In any case, in future studies, it is important to obtain more precise estimates of program services actually provided to older patients as compared to middle-aged and younger patients and to obtain information about patient characteristics, such as family involvement and motivation for aftercare, that may influence the allocation of specific services and treatment outcome.

This study has focused on program-level analyses; individual-level analyses will enable us to learn more about how program policies, services, and treatment orientations influence specific patients' treatment experiences and outcomes. Most important, future research should examine the idea that intensive, directed treatment may be more effective for younger patients, whereas a less demanding treatment regimen in a well-organized program and supportive outpatient mental health aftercare may be especially helpful for older patients. More generally, additional work is needed to identify the most effective within-program treatment tracks for different patient age groups and how best to coordinate inpatient, community residential, and outpatient treatment modalities. Longitudinal research in this area is essential to make more precise estimates of age-related and cohort effects and to clarify the treatment needs of the next generation of older patients.

Acknowledgments

We thank Matt Paradise, Keith Peterson, and Ralph Swindle for their help in coordinating the data collection and organizing the data files, and we thank John Finney, Kathleen Schutte, and

Christine Timko for their comments on an earlier draft of the article. Preparation of the article was supported by the Department of Veterans Affairs Mental Health and Behavioral Science Service and Health Services Research and Development Service as well as by NIAAA Grants AA02863 and AA06699.

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