

Regular article

Prognosis of older patients in mixed-age alcoholism treatment programs

Sonne Lemke, Ph.D.^{a,*}, Rudolf H. Moos, Ph.D.^{a,b}

^aCenter for Health Care Evaluation and Program Evaluation and Resource Center, Veterans Affairs Health Care System, Menlo Park, CA 94025, USA

^bStanford University, Medical Center, Palo Alto, CA 94305, USA

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Abstract

Older patients were compared with matched groups of younger and middle-aged patients in inpatient alcohol treatment programs ($N=432$ in each age group). Compared with other patients, older patients had poorer physical health and lower cognitive status at treatment entry, but they were drinking less and reported fewer drinking-related problems, fewer psychological symptoms, more social support, more adaptive coping, and fewer barriers to abstinence. Older patients had positive views of the programs and, except for less family therapy and problem-focused counseling, received comparable treatment to that received by other patients. At discharge, older patients showed significant change in most areas targeted for treatment. Better initial status was the strongest predictor of better discharge functioning. Patients with higher cognitive functioning and stronger treatment motivation and those who experienced more interpersonal support and who received more specialized treatment services showed better-than-expected improvement. The age groups showed similar outcomes, prognostic factors, and response to different treatment orientations. © 2002 Elsevier Science Inc. All rights reserved.

Keywords: Alcohol treatment; Older adults; Older problem drinkers; Treatment orientation; Treatment prognosis

1. Introduction

It has been suggested that older adults with alcohol use disorders have treatment needs, risk factors for relapse, and overall prognoses that distinguish them from younger patients (Atkinson, 1995; Schonfeld & Dupree, 1995). It has also been argued that these older adults may be short-changed when competing for services with younger patients. Aside from general developmental trends and clinical impressions, however, there is little empirical evidence regarding the comparative treatment needs and prognoses of older and younger substance abuse patients (Schonfeld, Dupree, & Rohrer, 1995). There is also limited empirical evidence regarding possible treatment inequities.

We address these issues here by comparing older men who entered mixed-age alcohol treatment programs within the

Department of Veterans Affairs (VA) with their young and middle-aged counterparts. We focus on three main questions:

1. Do older patients in mixed-age treatment programs differ from middle-aged and younger patients in terms of behaviors and beliefs that may predict treatment outcome, such as patterns and consequences of substance use, alcohol expectancies, coping strategies, and psychological symptoms accompanying use? Do older patients differ in personal factors that may be related to treatment approaches and outcomes, such as health and cognitive functioning, motivation, and social resources?
2. Do older patients' treatment experiences in mixed-age programs differ from those of middle-aged and younger patients? We examine the types and amounts of treatment received and perceptions of program quality.
3. Do older patients experience different outcomes at discharge from an acute phase of treatment than do younger patients? We also focus on the personal and treatment-related predictors of discharge outcomes and whether any of these predictors differ by age group.

* Corresponding author. CHCE (152-MPD), Veteran Affairs Health Care System, 795 Willow Road, Menlo Park, CA 94025, USA. Tel.: +1-650-493-5000 x23422; fax: +1-650-617-2690.

E-mail address: sonne.lemke@med.va.gov. (S. Lemke).

1.1. Prognostic characteristics

1.1.1. Patterns of substance use and related functioning

Among those in treatment, older patients are similar to younger ones in their frequency of alcohol consumption, but older patients may less often drink to intoxication prior to treatment (Schonfeld et al., 1995). Criteria of alcohol dependence, such as those utilized in DSM-III-R, also appear fairly constant across age groups (Janik & Dunham, 1983).

In contrast with dependence measures, older patients generally have fewer social problems associated with alcohol use. Older alcoholics are less likely to experience disruptions in work and social relationships (Davis & Morse, 1987; Janik & Dunham, 1983) and have fewer arrests and legal problems (Janik & Dunham, 1983; Schachter, Negrete, & Ansari, 1990). Rather than social disruptions, increasing health problems may serve as a major impetus for older problem drinkers to enter treatment (Davis & Morse, 1987; Dunham, 1986).

1.1.2. Attitudes and beliefs

Although treatment often targets attitudes and beliefs, few direct comparisons have been made of the alcohol expectancies or belief systems of older and younger problem drinkers or their goals and motivations for treatment. Frustration, anger, and interpersonal conflict appear to be key issues for younger clients, whereas depression and loneliness may be more prominent issues for older ones (Schonfeld et al., 1995). However, the age groups do not appear to differ in alcohol expectancies or views of the likely consequences of drinking (Mulford & Fitzgerald, 1992; Schonfeld et al., 1995).

1.1.3. Social resources and coping

Older problem drinkers are expected to have poorer social functioning as a result of the additive impacts of their drinking histories and of aging. This expectation was not confirmed, however, in a study of individuals arrested for drunk driving. Compared with younger persons, those over age 55 were more likely to belong to a social organization and were equally likely to have someone with whom to share personal problems (Mulford & Fitzgerald, 1992).

1.2. Treatment experiences

Although clinical experience suggests that older patients may be more likely to drop out of treatment because of feelings of alienation (Blow, Walton, Chermack, Mudd, & Brower, 2000), direct comparisons have found that older problem drinkers receive treatment that is equivalent to or better than that received by their younger counterparts (Fitzgerald & Mulford, 1992; Janik & Dunham, 1983) and are at least as likely to complete treatment (Fitzgerald & Mulford, 1992).

1.3. Predictors of treatment outcome

1.3.1. Patient variables

Intake drinking patterns and history predict response to treatment, with more severe drinking problems generally related to a lower likelihood of success. This pattern has been confirmed for posttreatment substance use following inpatient treatment (McLellan et al., 1994), but among older participants in age-specific treatment, lifetime drinking history and alcohol symptoms were unrelated to drinking status after treatment (Blow et al., 2000).

Social stability, as indicated by marital and work status, support from family and friends, and family involvement in therapy, tends to predict better treatment outcome (Booth, Russell, Soucek, & Laughlin, 1992). However, this general pattern may vary for patient subgroups or outcome measures. In one comparison, being unmarried, living alone, and being unemployed predicted poorer outcome for older alcoholics but not for younger ones (Helzer, Carey, & Miller, 1984). Among older patients in age-specific outpatient treatment, being married and having one's spouse participate in treatment predicted program completion but not abstinence (Atkinson, Tolson, & Turner, 1993).

1.3.2. Treatment factors

Recent reviews have concluded that cognitive-behavioral and group interventions are effective with older substance abuse patients (Atkinson, 1995; Dupree & Schonfeld, 1998). In one of the few studies to examine the interaction between treatment approach and age group, Rice and colleagues (Rice, Longabaugh, Beattie, & Noel, 1993) found that middle-aged patients did best in relationship enhancement treatment and older patients did best in cognitive-behavioral treatment.

Availability and utilization of particular services may be related to variations among patients in treatment effectiveness. For example, more psychiatric, family, and employment services received during treatment predicted better social adjustment following treatment but did not predict substance use (McLellan et al., 1994). As was the case for treatment approach, there is suggestive evidence of an interaction between age and treatment services. In a comparison across treatment programs, the availability of family assessment and treatment, provision of social skills training, and emphasis on therapeutic community were related to a lower readmission rate for younger patients but not for middle-aged and older patients (Moos, Mertens, & Brennan, 1995).

Treatment climate may also impact program effectiveness. Among substance-abuse patients in a mixed-age treatment program, those who reported more attachment to the treatment setting tended to have a longer interval before readmission (Booth et al., 1992). When randomly assigned to a traditional program or to an age-specific treatment program that offered more support and less confrontation, older patients had higher rates of abstinence in the more

supportive program (Kashner, Rodell, Ogden, Guggenheim, & Karson, 1992).

1.4. Summary

Existing research suggests older patients with alcohol use disorders may have somewhat less serious problems, particularly in terms of their maximum level of consumption and the social consequences of their drinking. In terms of their alcohol dependence, however, their drinking may be just as problematic. Social isolation, depression, and health problems may be more central to the alcohol use of older rather than of younger persons, and these factors may therefore be more important foci in the treatment of older alcoholics. For example, older alcoholics are thought to be more negatively impacted by conflict in the treatment program and to be more responsive to the availability of social support. Because older alcoholics are a minority in most mixed-age programs and because staff may make negative assumptions about their therapeutic potential, these patients may receive fewer services or services that are less effective in meeting their needs.

2. Materials and methods

2.1. Sample

As part of a larger evaluation of VA services, information for this paper was obtained from alcoholic patients entering a targeted inpatient substance abuse treatment program in one of 12 VA medical centers drawn from different regions of the US. These programs were selected, based on program surveys and direct observation, to systematically reflect the variety of treatment orientations that are commonly used in working with individuals with substance use disorders.

The four programs designated as 12-step programs emphasized such treatment activities as 12-step meetings, targeted the patient's acceptance of an alcoholic identity and powerlessness over alcohol, and emphasized abstinence as a treatment goal. The four cognitive-behavioral programs emphasized participation in relapse-prevention groups and cognitive and behavioral skills training. The goals were to teach patients more adaptive ways of coping, to increase their self-efficacy to manage high-risk situations, and to help them develop more realistic expectations of the effects of alcohol. The four eclectic programs combined techniques and treatment philosophy drawn from both 12-step and cognitive-behavioral treatment approaches (See Ouimette, Finney, & Moos, 1997, for more details on the intake procedure and classification of programs¹).

In each program, consecutive admissions were approached, unless it was determined that the patient volume would be in excess of data collection capacity, in which case, a systematic sampling procedure was implemented. Informed consent was obtained; 88% of patients who were approached agreed to participate. The intake sample from these 12 programs consisted of a total of 3234 patients, of whom 2858 received an ICD-9 alcohol-related diagnosis. We divided these patients into three age groups: 1006 were younger men (ages 21–39), 1402 were middle-aged men (ages 40–54), and 450 were older men (ages 55–77).

2.2. Matching procedure

Compared with younger and middle-aged patients, older patients were more likely to be white and to be married and less likely to have graduated from high school. They were also less likely to be in a 12-step program and to have a psychiatric diagnosis in addition to their substance-use diagnosis (dual-diagnosis). In order to separate the age-group comparisons from the influence of these demographic, diagnostic, and treatment factors, a group of younger and a group of middle-aged patients were selected to match the older patients on these indices at the group level. This process resulted in a group of 432 older patients and equal-sized groups of younger and of middle-aged patients matched on these demographic and treatment-related factors. These 1296 patients are the focus of this paper.

In each of the three groups, 19% were currently married, 71% were white, and the average educational level was completion of 12 years of schooling. In each group, 31% were dual-diagnosis patients. Each age group has the same representation in the three treatment orientations: 26% of each age group were from 12-step programs, 40% were from cognitive-behavioral programs, and 34% were from eclectic programs.

2.3. Measures

Patients completed a Background Information Form (BIF) at intake to treatment; this survey required 30–45 minutes for completion. Questions focused on substance use and related attitudes, current functioning, and personal and life context factors. Patients also completed a Discharge Information Form (DIF), with similar completion rates (above 90%) for each age group. The DIF was completed shortly before or after program discharge and took approximately 20–30 minutes to complete. The DIF included questions about the amounts and types of treatment patients had received and their program perceptions, as well as about their substance use, functioning, and attitudes.

2.3.1. Substance use and related functioning

Measures of drinking quantity and frequency were drawn from the Health and Daily Living Form (Moos, Cronkite, & Finney, 1990). *Average alcohol consumption* is the average

¹ Although 15 programs were included in the original evaluation, the three programs that specialized in drug-abuse treatment, which included few older patients, were dropped from the present sample.

ounces of ethanol consumed per day during the preceding three months. *Maximum alcohol consumption* is the amount of ethanol consumed on the heaviest drinking occasion during this period. Such self-reports of drinking behavior provide reasonably valid information about alcohol consumption, particularly when there are no negative consequences of disclosure (Tucker, Vuchinich, Harris, Gavornik, & Rudd, 1991).

Patients also answered questions about symptoms and consequences of their substance use. *Alcohol Dependence* comprises nine items ($\alpha = .88$) that correspond with the criteria for alcohol dependence in DSM-III-R (American Psychiatric Association, 1987). Respondents indicated whether they had experienced each of the symptoms during the three months preceding treatment. *Substance Use Problems* reflects the presence during that three-month period of each of 15 possible problems resulting from substance use in areas such as health, employment, the legal system, and relationships ($\alpha = .84$).

Patients responded to items that tapped their attitudes toward continued use and quitting. *Positive Expectancies for Use* consists of 12 items adapted from the Alcohol Expectancy Questionnaire (Brown, Goldman, Inn, & Anderson, 1980) and reflects the expected effects of substance use on functioning and sense of well-being. It is scored in terms of the number of positive effects endorsed ($\alpha = .81$). Twelve items were adapted from the Outcomes Expectancies Scale (Solomon & Annis, 1989) to measure the potential consequences patients expected if they stopped using. Six items cover possible *Costs of Quitting* (e.g., loneliness, moodiness), and six items cover possible *Benefits of Quitting* (e.g., improved health, self-confidence). Scores are the number of items endorsed (α s = .66 and .76, respectively).

Items drawn from the Situational Confidence Scale (Annis & Davis, 1988) tapped patients' perceived ability to refrain from drinking and using drugs in tempting situations. The *Situational Confidence* score is the average response to these 14 items on a scale from 0 ("no confidence") to 100 ("100% confident") ($\alpha = .96$).

Substance-Specific Coping was assessed by 15-items adapted from the Processes of Change Scale (Prochaska, Velicer, DiClemente & Fava, 1988). Items include such coping strategies as stimulus control and reinforcement management. Five of the 10 original subscales were assessed with three items each; each item was rated on a 5-point scale from "never" to "often" ($\alpha = .88$).

We also examined the patient's typical pattern of handling a stressful situation based on items from the Coping Responses Inventory (Moos, 1993). Six items each were used to assess four coping strategies: positive reappraisal, problem solving, cognitive avoidance, and emotional discharge. Positive reappraisal and problem-solving action were combined into a measure of *Percent Approach Coping*; the score is the percentage of all coping responses that involved these proactive strategies.

Psychological Symptoms were measured with 22 items from the Brief Symptom Inventory (BSI) (Derogatis, 1993). Six items each from the depression and anxiety scales and five items each from the paranoia and psychoticism scales were included; items were rated on a 5-point scale of severity experienced during the preceding three months. Scores are the number of symptoms that bothered the patient at least moderately ($\alpha = .92$).

2.3.2. Personal factors

Health status was assessed by asking patients to list any physician-diagnosed medical conditions during the previous year; the *number of medical conditions* could range from 0 to 3 or more. *Cognitive Functioning* was assessed with the 20-item abstraction subscale of the Shipley Institute of Living Scale (Shipley, 1940).

Motivation for Treatment comprises eight items drawn from the Determination and Action subscales of the Stages of Change Readiness and Treatment Eagerness Scale (Miller & Tonigan, 1996), scored in terms of agreement ($\alpha = .70$).

To assess their level of social engagement, patients were asked about their number of close friends (ranging from 0 to 4 or more). For *Social Support*, 11 items were drawn from the Life Stressors and Social Resources Inventory (LISRES) (Moos & Moos, 1994) to reflect the availability of support and absence of stressors in close friendships. These items were rated on a 5-point scale ranging from "never" to "often," with the stressor items reverse scored ($\alpha = .80$). We also asked patients whether their friends had substance abuse problems.

Nine items were adapted from a measure of religious beliefs (Hoge, 1972). *Religiosity* taps the centrality of God and faith in the individual's daily life and is scored in terms of the number of items with which the individual agrees ($\alpha = .85$).

2.3.3. Amount and quality of treatment

A designated staff member reported the dates of intake to and discharge from the program, and from this, the patient's length of stay was computed. Information was obtained from patients about the numbers and types of therapy or counseling sessions they had attended during treatment. Specifically, we analyzed the number of *individual sessions*, scored as low (fewer than 3 sessions), average (3 to 4 sessions), or high (5 or more sessions). *Family therapy* was scored dichotomously for its presence or absence. Vocational counseling, legal assistance, help obtaining housing, help obtaining public assistance, and educational counseling were summarized as *practical problem treatment*; scores were low (none of these modalities present), average (1 or 2 of these modalities present), or high (3 or more of these modalities present).

Patients also reported the number of 12-step meetings they had attended since entering treatment (answered on a 5-point scale ranging from none to more than 12 meetings). All of these elements of the treatment programs were voluntary and varied, not only between programs but among

patients in programs, thus setting up the possibility of differential allocation of these resources based on age.

Patients described the treatment environment using the Community Oriented Programs Environment Scale (COPEs) (Moos, 1996), which taps the quality of relationships among patients and staff, the program's emphasis on specific treatment goals, and program organization and structure. Each of the 10 subscales includes 10 dichotomously scored items (alphas range from .58 to .78 for patients; see Moos, 1996). An additional 10-item scale measured the spiritual emphasis within the program ($\alpha = .78$). Finally, patients rated their satisfaction with the program on 11 items, each scored dichotomously (not satisfied/satisfied; $\alpha = .88$).

2.3.4. Discharge outcome status

In order to examine predictors of discharge outcome, we computed a summary outcome measure by counting the number of eight substance-abuse-related scales on which the patient was functioning better than the average for all patients at discharge. *Discharge outcome status* could range from 0 to 8, with higher scores reflecting better-than-average outcomes on more of these measures. The eight components tapped abstinence from alcohol use; lower positive expectancies for use and for costs of quitting; higher expected benefits of quitting, situational confidence, and substance-specific and approach coping; and lower levels of psychological symptoms.

2.4. Data analysis

We used analyses of variance to compare the intake means of the three age-groups on continuous variables and chi-square tests to compare them on nominal data. We used paired *t*-tests to examine improvement during treatment, and regression analyses to identify predictors of improvement, including testing for age-group differences in improvement and in factors that predict it. Finally, we used analysis of variance procedures to test whether older patients did better than expected in either 12-step or cognitive-behavioral programs.

3. Results

3.1. Substance use and related functioning

Despite their shared presence in these treatment programs and matching on background factors, the older patients showed some differences in the severity of substance use problems at treatment entry, both in terms of consumption patterns and psychosocial functioning (see Table 1). Perhaps reflecting reduced physiological tolerance, older patients' average and maximum ethanol intake were lower than those of middle-aged patients. Nevertheless, the older patients were similar to the younger and middle-aged patients in their level of alcohol dependence. The age groups differed,

Table 1

Means for substance use and related functioning at treatment intake for three age-groups

Functioning (range)	Younger (Ages 21–39) (<i>N</i> = 432)	Middle-aged (Ages 40–54) (<i>N</i> = 432)	Older (Ages 55+) (<i>N</i> = 432)	<i>F</i> -Ratio
Average alcohol consumption (oz/day)	10.7	13.5 ^b	11.2 ^b	8.0**
Maximum alcohol consumption (oz/day)	21.4 ^a	23.1 ^b	18.1 ^{a,b}	12.7**
Alcohol dependence (0–9)	6.6	6.8	6.4	ns
Substance use problems (0–15)	8.8 ^a	7.7 ^b	5.4 ^{a,b}	99.5**
Positive expectancies for use (0–12)	7.5 ^a	7.7 ^b	6.7 ^{a,b}	13.3**
Costs of quitting (0–6)	2.8 ^a	2.8 ^b	2.3 ^{a,b}	10.6**
Benefits of quitting (0–6)	4.9	4.6	4.7	ns
Situational confidence (0–100)	62 ^a	61 ^b	68 ^{a,b}	9.4**
Substance-specific coping (0–60)	29	29	29	ns
% approach coping (0–100)	52 ^a	55 ^b	60 ^{a,b}	25.2**
Psychological symptoms (0–22)	10.3 ^a	10.6 ^b	7.2 ^{a,b}	41.3**

^a Means for the younger and older patients differ significantly.

^b Means for the middle-aged and older patients differ significantly (Student-Newman-Keuls test).

** $p < .001$.

however, on the number of problems experienced as a result of drinking, with the oldest patients scoring lowest on the substance abuse problems scale.

The older patients also had some advantages in terms of their expectancies regarding alcohol. They were less likely to report positive social consequences of drinking or to identify costs of quitting. The older patients also had the highest level of confidence in their ability to abstain in various challenging situations.

The use of substance-specific coping was the same for all three groups. The older group was more likely than the others, however, to use approach coping to deal with a stressful situation (Table 1). Finally, despite the fact the age groups were matched on the percentage of dual diagnosis patients, the oldest group reported fewer psychological symptoms than did the two other groups.

3.2. Personal factors

As expected, older patients reported more medical conditions. Abstract reasoning skills declined with age for these patients; each successive age group scored lower on this measure of cognitive functioning, in spite of the matching on educational level (Table 2).

Table 2
Means for personal factors at treatment intake for the three age-groups

Personal factors (range)	Younger (Ages 21–39) (N = 432)	Middle-aged (Ages 40–54) (N = 432)	Older (Ages 55+) (N = 432)	F-Ratio
Number of medical conditions (0–3)	0.6 ^a	0.8 ^b	1.1 ^{a,b}	24.9**
Cognitive functioning (0–20)	12.1 ^a	9.7 ^b	7.6 ^{a,b}	98.3**
Motivation for treatment (0–8)	7.6 ^a	7.5 ^b	7.3 ^{a,b}	7.1**
Number of close friends (0–4)	2.0 ^a	2.1 ^b	2.4 ^{a,b}	10.7**
Social support (0–44)	25.5 ^a	25.2 ^b	27.5 ^{a,b}	13.2**
Religiosity (0–9)	4.0 ^a	4.2 ^b	4.8 ^{a,b}	8.3**
% friends have substance abuse problem	67 ^a	65 ^b	49 ^{a,b}	35.7**

^a Means of the younger and older patients differ significantly.

^b Means of the middle-aged and older patients differ significantly (Student-Newman-Keuls test; *t*-tests for categorical variables).

** *p* < .001.

Although all three age groups showed strong motivation for treatment, the older patients scored somewhat lower than did the others. On the other hand, the older patients were more socially engaged. Compared with younger and middle-aged patients, they reported having more friends and receiving more social support, and they were less likely to report their friends had substance abuse problems. Finally, the older patients scored highest on the measure of religiosity.

3.3. Treatment experience

Older patients had a slightly longer program stay but were less likely to have family therapy and counseling focused on practical problems, such as vocational counseling, finding a place to live, obtaining public assistance, and dealing with legal problems. On the other hand, older patients were equivalent to the other age groups in their participation in individual counseling and 12-step meetings while inpatients (see Table 3).

The older patient group had a somewhat more positive experience of the treatment climate. Compared with the other age groups, the older patients reported higher levels of support and lower levels of anger and aggression (Table 3). Compared with the youngest patients, they also saw the program as higher on order and organization. On the other hand, there were no significant group differences in perceptions of other aspects of the treatment climate, such as the treatment goals or organizational structure (for brevity, these results are not shown in Table 3). Although the age groups differed in religiosity, they reported similar levels of religious emphasis in the programs. Finally, the age groups

were similar in treatment satisfaction, averaging positive ratings on 10 of the 11 items.

3.4. Treatment response

Within-group paired *t*-tests showed that there were significant changes between intake and discharge on almost all of the outcome indices in each of the three age groups (Table 4). Specifically, older, middle-aged, and younger patients showed marked reductions in alcohol intake, saw increased benefits to quitting, reported substantial increases in situational confidence and improvements in coping, and experienced reductions in psychological symptoms.

3.5. Predicting treatment response

We conducted regression analyses in which we used age group, personal and treatment factors, and interactions between age group and these factors to predict outcome status at treatment discharge. On the basis of preliminary analyses, we selected a group of personal and treatment factors as predictors. These included the four variables used for matching (married status, nonwhite/white, educational level, and dual diagnosis), health and cognitive status,

Table 3
Means for treatment experiences for three age-groups

	Younger (Ages 21–39) (N = 432)	Middle-aged (Ages 40–54) (N = 432)	Older (Ages 55+) (N = 432)	F-ratio
<i>Treatment Quantity (range)</i>				
Length of stay (days)	23.0 ^a	23.1 ^b	24.7 ^{a,b}	6.7*
Level of individual sessions (0–2)	1.0	1.0	.9	ns
Family sessions (0–1)	.55 ^a	.35 ^b	.28 ^{a,b}	33.4**
Level of practical problem sessions (0–3)	1.2 ^a	1.1 ^b	.8 ^{a,b}	35.9**
Level of 12-step meetings (0–4)	2.5	2.5	2.4	ns
<i>Program Quality (range)</i>				
Support (0–9)	7.3 ^a	7.5 ^b	8.0 ^{a,b}	9.7**
Anger and aggression (0–9)	5.6 ^a	5.1 ^b	4.8 ^{a,b}	13.2**
Order and organization (0–9)	7.6 ^a	8.0	8.0 ^a	4.8*
Emphasis on spirituality (0–9)	5.8	5.7	5.8	ns
Satisfaction (0–11)	10.1	10.1	10.1	ns

^a Means of the younger and older patients differ significantly.

^b Means of the middle-aged and older patients differ significantly (Student-Newman-Keuls test).

* *p* < .01.

** *p* < .001.

Table 4
Intake and discharge mean scores on outcome variables for the three age groups

Outcome variable (range)	Younger (<i>N</i> = 395) (Ages 21–39)		Middle aged (<i>N</i> = 404) (Ages 40–54)		Older (<i>N</i> = 403) (Ages 55+)	
	Intake	Discharge	Intake	Discharge	Intake	Discharge
Alcohol consumption—oz per day	10.4	0.02**	13.4	0.15**	11.1	0.02**
Positive expectancies for use (0–12)	7.4	6.3**	7.8	7.2**	6.7	6.3
Costs of quitting (0–6)	2.7	2.7	2.8	2.7	2.3	2.4
Benefits of quitting (0–6)	4.9	5.1 *	4.7	4.9 *	4.7	5.0**
Situational confidence (0–100)	62	76**	61	76**	69	80**
Substance-specific coping (0–60)	29	45**	29	45**	29	44**
% approach coping (0–100)	53	73**	55	72**	61	72**
Psychological symptoms (0–22)	10.2	4.3**	10.6	4.9**	7.2	3.8**
Overall outcome status (0–8)	2.1	4.7**	2.0	4.6**	2.8	5.1**

* $p < .01$;

** $p < .001$ (significance level for difference between intake and discharge scores as determined by within-group, paired *t*-tests).

motivation for treatment, and religiosity. We used the LISRES social support measure as the measure of interpersonal relationships. The variety and intensity of specialized treatment were reflected in a summary score computed by combining scores for individual therapy, family therapy, and practical problem treatment. Treatment services also included the number of 12-step meetings attended while in the program. Program quality was tapped with the COPES dimension of support. As previously noted, the outcome status score is the number of the eight outcome measures on which the patient showed better-than-average functioning compared with all patients at discharge. Intake status reflects the patient's functioning in terms of these same criteria (i.e., discharge average) at intake.

Table 5
Personal and treatment factors as predictors of outcome status at discharge

Predictor	Beta in regression
<i>Matching factors</i>	
Married (0/1)	.08**
Nonwhite/white (0/1)	-.02
Educational level	.05
Dual diagnosis (0/1)	-.04
<i>Prognostic factors</i>	
Intake status	.45**
Number of medical conditions	-.05
Cognitive functioning	.08 *
Motivation for treatment	.09**
Social support	.04
Religiosity	.00
<i>Treatment experiences</i>	
Specialized treatment level	.07 *
12-step meeting level	-.05
Supportiveness	.15**
<i>Age group</i>	
Older (0/1)	.03
Overall R	.56**

* $p < .01$;

** $p < .001$.

As shown in Table 5, intake functioning was the strongest predictor of discharge outcome status. In addition, being married, having higher cognitive functioning, being more strongly motivated for treatment, receiving more specialized services, and experiencing more supportive social interactions in the program were independently associated with better discharge outcome. When these predictors were controlled, older patients did not differ from other patients in their treatment outcome.

In order to determine whether any of these predictors were of differential importance to the overall outcome of older patients, we computed regression equations in which we used intake status, age group (scored dichotomously for older/other), the predictor (one of the 12 personal or treatment factors in Table 5), and the interaction term (older status \times predictor) to predict discharge outcome status. The interaction term was not significant in any of the 12 regressions, indicating that the pattern of predictor-outcome relationships was the same for older and younger patients. This same pattern of results also applies to each of the individual outcome measures in Table 4.

Finally, we examined the possibility that the cognitive-behavioral or 12-step approach is better suited to older patients. We performed analysis of variance to predict outcome status with program orientation, age group, and an interaction term as the independent variables and intake status as the covariate. The main effects of age group and program orientation were not significant, and the interaction between them also was not significant. Older patients experienced similar outcomes in 12-step, cognitive-behavioral, and eclectic programs, and they experienced outcomes similar to those of younger patients, once intake differences in status were controlled.

4. Discussion

Overall, the findings indicate that older patients with alcohol use disorders being treated in age-integrated programs have good prognoses, receive treatment services

comparable to those provided matched middle-aged and younger patients, and respond similarly to treatment.

4.1. Prognostic factors

Except for poorer physical health and lower cognitive status, the older patients had a number of advantages over the other age groups at treatment entry. They were drinking less, experienced fewer negative social consequences of drinking, and reported fewer psychological symptoms. They were somewhat less strongly motivated to deal with their drinking problems, perhaps because their problems were less severe, but they saw fewer barriers to achieving abstinence. They also reported higher levels of social support and more adaptive coping patterns. This pattern of differences between younger and older patients in treatment appears to apply more generally to the current population of VA substance-abuse patients (Brennan, Nichol, & Moos, 2001).

These results are consistent with the view that older patients differ somewhat from younger and middle-aged patients in specific aspects of their presentation. Clinicians have been especially concerned that diagnostic criteria may not apply equally across the age range, in particular, that older people's reduced involvement in certain social spheres and lower alcohol consumption levels may result in failure to diagnose and treat some older problem drinkers (Atkinson, 1995). Our results indicate that older patients indeed experience fewer social consequences of drinking, whether because of reduced involvement in certain activities or a reduced propensity to act out, and that they may consume less alcohol, particularly in comparison with middle-aged patients. In contrast, dependence symptoms appear to be a relatively stable indicator of the seriousness of alcohol problems across the age range. Efforts to improve the detection of drinking problems in older persons should therefore focus on dependence symptoms and should probably lower consumption thresholds.

The better functioning of these older patients stands in contrast with the commonly held view of the older alcoholic as socially isolated and experiencing high levels of depression and anxiety. In fact, we found that older patients in these treatment programs were less socially isolated and less likely to show symptoms of depression or anxiety than were their younger counterparts. On the other hand, the finding of some advantage in social stability for older patients is consistent with age-group comparisons in other clinical samples (Brennan et al., 2001; Davis & Morse, 1987; Janik & Dunham, 1983).

4.2. Treatment experiences

These older patients appear to have been well integrated in these mixed-age treatment programs. Older patients received comparable or better treatment in terms of length of stay, 12-step meeting attendance, and par-

ticipation in individual treatment sessions. They were less likely to be involved in family sessions and sessions focused on practical problems, but these differences appear to be accommodations to their reduced family involvement and lower level of social problems. They viewed the programs in positive terms and expressed high levels of satisfaction. As a further indication of their treatment involvement, the older patients experienced significant change on nearly all of the measures of behavior and attitudes that are targeted for treatment, as did the younger and middle-aged patients.

Research has shown that older problem drinkers are less likely than are younger persons to be referred to specialized substance abuse treatment (Curtis, Geller, Stokes, Levine, & Moore, 1989; Moos, Mertens, & Brennan, 1993), but that, once in a treatment program, older and younger patients obtain essentially the same services and show similar rates of program completion and compliance (Brennan et al., 2001; Fitzgerald & Mulford, 1992; Janik & Dunham, 1983). The present findings support the view that, if age inequities in treatment services exist, they are more likely to occur prior to program admission.

4.3. Predictors of treatment response

Although initial status was by far the best predictor of the individual's discharge functioning, a number of personal and treatment factors contributed to predicting improvement following treatment. Married persons and those with higher cognitive functioning and stronger treatment motivation tended to function better following treatment than expected based on intake status. Those who received more specialized treatment services and who experienced more interpersonal support in their program also tended to show better-than-expected improvement.

On average, older patients in these mixed-age inpatient treatment programs differed from younger patients in these prognostic and treatment-related factors. Older patients entered with better functioning, the strongest predictor of good discharge functioning. In addition, older patients tended to experience the treatment program as more supportive. Insofar as they tended to have lower cognitive functioning, were somewhat less motivated for treatment, and received fewer specialized services, however, these assets were to some extent counterbalanced. Although the age groups differed in their assets and risk factors, our findings support the conclusion that age, per se, is not a risk factor for poor treatment response (Atkinson, 1995).

We found no evidence that predictors of discharge outcome varied in importance among the age groups. These findings differ from some previous research that has suggested that marital status and dual diagnosis might vary in prognostic significance for older and younger patients (Helzer et al., 1984). In particular, contrary to clinical impressions, older patients do not appear to be differentially sensitive to the quality of relationships in the treatment

program or to be better matched to either a 12-step or a cognitive-behavioral treatment orientation. Although much has been written about older patients' aversion to confrontation and the importance to their effective treatment of building a social network to support sobriety, these concerns appear to be shared by patients across the age range. Improvements tailored to the needs of older patients are likely to be of equal benefit to younger patients.

Our findings, which highlight the distinctiveness of the older patients and their positive response to mixed-age treatment, most likely reflect a combination of factors, including cohort effects, developmental changes, and selective attrition. This particular cohort of older persons was born prior to World War II. Because of their historical and social circumstances, their levels of alcohol consumption and problem behaviors may have been lower throughout life. The next generation of older drinkers may show quite different patterns of functioning in response to their distinctive life experiences.

Developmental processes, such as increased sensitivity to alcohol or reductions with age in the most severe psychiatric symptoms, may also contribute to the higher intake functioning and treatment responsiveness of the older cohort. These developmental processes, in contrast with cohort effects, can be expected to impact later generations in a similar manner.

Selection factors may play an important role in this pattern of results. Individuals with more serious drinking problems, social consequences, and psychological impairment are more likely to die. Given that the older cohort had more years for such selective attrition to operate, only the more intact may have survived to seek services.

In addition to these external forces, structural factors within the treatment system may contribute to eliminating lower-functioning older patients from this particular alcohol-treatment track. For example, because they have more medical problems, older alcoholics may be more likely than are younger alcoholics to be treated in medical units. Among those alcoholics with serious psychiatric symptoms, older patients may be more likely than are comparable younger alcoholics to be treated in psychiatric units, with the result that older patients in alcohol treatment units have fewer psychiatric symptoms than their younger counterparts. Similarly, older patients with unstable residences and poor social supports may be more likely than comparable younger patients to be placed in long-term care settings, such as nursing homes and domiciliaries. Some of these program selection factors may represent appropriate tailoring of services to patient needs and may optimize patient outcomes. Some may reflect unfounded assumptions that prevent some older patients from receiving the most appropriate treatment for their alcohol problems.

4.4. Limitations and conclusions

We have identified age-related differences in characteristics of men being treated in VA inpatient substance abuse

programs, and we have found evidence of equity in the services they receive, in their treatment experiences, and in their short-term outcomes. Although these findings are consistent with previous research using community samples, it will be important to investigate further whether these conclusions generalize to outpatient programs, community treatment programs, and programs serving women patients.

In particular, the past decade has seen a shift away from inpatient substance abuse treatment programs. Severely impaired patients, such as those described here, have been increasingly likely to be treated in hospital- or community-based residential programs or in intensive or long-term outpatient programs. Although inpatient programs are increasingly rare, the patient characteristics noted here, the treatment orientations utilized, and the processes involved in achieving changes in behavior are likely to generalize to the programs that have taken their place. In fact, the shift away from inpatient care was driven in part by the similarities between treatment outcomes in inpatient and outpatient programs, suggesting that similar processes occur in these different settings.

It will be important to ascertain, however, whether the distinctive characteristics of the older patients noted here do in fact apply to the types of settings that are currently being used and whether new barriers to treatment now exist for older patients. For example, the increased cognitive impairment and medical problems experienced by older patients may make access to residential or outpatient programs more challenging for older than for younger patients. If increasing health problems are a major factor motivating older patients to address their alcohol-use problems, then separating alcohol treatment from medical care may have a much greater impact on older than on younger patients.

This examination of treatment effectiveness is a naturalistic study and carries the attendant limitations and strengths. For example, patients were not randomly assigned to a particular treatment orientation but received the type of treatment offered by the target unit of the VA medical center where they sought care. We matched the age groups on background factors and on the numbers going into each treatment orientation in order to control these variables in the age comparisons, but other confounding factors may exist.

In addition, we have used proximal measures to compare the treatment process for older and younger patients. Although short-term change is important in its own right, as well as a strong predictor of long-term outcomes, it will be important to determine whether older patients are as likely as younger patients to sustain their treatment gains and whether similar factors predict the long-term outcomes of older and younger patients.

Although we have shown that older patients in age-mixed treatment programs do as well as their younger counterparts and respond in similar ways to aspects of the treatment experience, our data cannot address the question of whether these older patients might have done better in programs tailored to their needs. For example, in age-

specific programs, the resources being used to provide family therapy and practical problem interventions, which differentially go to younger patients, might be used to enhance treatment in areas that are more important to older patients. The findings do suggest, however, that there were no gross age inequities in these mixed-age treatment programs and that the treatment processes are very similar across the age range.

Our results suggest that some resources should be directed toward identifying effective outreach and treatment services for older alcoholics who are not currently being served, either because they self-select out of existing treatment programs or are not identified as appropriate candidates for these programs. Our results also provide support for programs that offer specialized services to address family issues and practical problems in areas such as housing, finances, and the legal system. Although they have fewer such problems, older patients appear to derive equal benefit from these services, which can be provided in inpatient or in outpatient settings. Patients across the age range also appear to benefit from a cohesive, emotionally supportive treatment environment. Creating such cohesion in the newer community residential and intensive outpatient programs may present a significant challenge but may be key to engaging older patients in this type of program.

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