Age-Related Psychiatric Comorbidities and Level of Functioning in Alcoholic Veterans Seeking Outpatient Treatment

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The relationship of age and of level of adaptive functioning to comorbidity of mental disorders among alcoholics was studied in a survey of all alcoholics seeking outpatient mental health treatment in the Veterans Affairs mental health care system during a one-month period in 1986 (N=22,463). More than half of the alcoholic outpatients had one or more comorbid psychiatric diagnoses. Rates for comorbid substance abuse disorders, posttraumatic stress disorder, schizophrenia, and personality disorders peaked in younger alcoholics and then decreased with age. Age-related increases were observed for major depression, anxiety disorders, and organic brain syndrome or dementia. DSM-III axis V ratings of poor to grossly impaired functioning were consistent across age groups. More than half of alcoholics with a comorbid psychiatric disorder were rated as severely impaired, compared with less than a third of those with no comorbid mental disorder.

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The co-occurrence of mental disorders with alcoholism has important implications for both treatment and prevention of serious health and social consequences (1). Recent studies of the prevalence of psychiatric comorbidity, or dual diagnosis, have reported high rates of mental disorders among alcoholics and other substance abusers drawn from community populations or from various treatment settings (1–4).

Community studies of combined alcoholism and psychiatric disorders have shown a high lifetime prevalence of comorbidity (4,5). Based on the most recent data from the National Institute of Mental Health Epidemiologic Catchment Area (ECA) study, Regier and colleagues (4) estimated a lifetime prevalence of alcohol dependence or abuse of 13.5 percent for the general population. Almost 37 percent of persons with an alcohol-related diagnosis were estimated to have at least one comorbid mental disorder, with rates of 19.4 percent for anxiety disorders, 13.4 percent for affective illnesses, 14.3 percent for antisocial personality disorder, and 3.8 percent for schizophrenia.

For persons with an alcohol-related diagnosis who were seen in specialty alcohol and drug treatment centers or mental health treatment settings, comorbidity rates dramatically increased (4). Fifty-five percent of substance abusers seeking drug or alcohol treatment in the previous six months had a comorbid mental disorder, compared with 24.4 percent of those who had not sought treatment in the past six months. Similarly, using a structured diagnostic interview, Ross and colleagues (1) found that in a large sample of patients seeking treatment in a specialized alcohol and drug rehabilitation program, 78 percent had a lifetime psychiatric disorder in addition to a substance abuse diagnosis, and 65 percent had a current comorbid mental disorder. Of those with a current primary alcohol disorder, 78.1 percent had a comorbid psychiatric disorder, with highest rates for generalized anxiety (50.7 percent), antisocial personality (41.9 percent), phobias (30.5 percent), psychosexual dysfunctions (30.3 percent), major depression (22.6 percent), dysthymia (13.4 percent), cognitive impairment (10 percent), and schizophrenia (8.2 percent).

Neither the study by Ross and associates (1) nor that by Regier and colleagues (4) reported specific age-related differences in rates of psychiatric comorbidity among alcoholics. Although Ross and colleagues did not explicitly present comorbidity data by age in decades, they reported that the prevalence of alcohol disorders substantially increased with age, as did the prevalence of cognitive impairment. Among younger patients, those with schizophrenia and those with antisocial personality had the highest rates of alcohol disorders. The severity of alcohol or other drug problems was the best predictor of the co-occurrence of psychiatric disorders in the treatment-seeking sample studied (1).

Previous research has thus demonstrated high rates of comorbid alcohol and mental disorders among patients seeking treatment. However, no studies of comorbidity have specifically and carefully examined the co-occurrence of psychiatric illness among alcoholics seeking outpatient treatment. We were interested in whether alcoholic patients with certain comorbid mental disorders would be more likely to seek outpatient treatment. Furthermore, age-specific rates of comorbidity have not been determined for either inpatient or outpatient alcoholism treatment settings. It is also unclear whether comorbid mental disorders dramatically reduce adaptive functioning, a proxy measure for severity of impairment.

Information about the age and severity of impairment of alcoholic patients seeking treatment would be useful to mental health professionals in their efforts to target resources and match patients to appropriate types of treatment. The study presented here was based on data from a population survey of patients seeking outpatient mental health treatment. The purpose was to assess the age and severity of impairment in alcoholics with coexisting psychiatric disorders.

Methods

Subjects. Data in this report are a subset of a systemwide mental health outpatient survey of all Veterans Affairs (VA) facilities conducted by the VA chief medical director's special committee on posttraumatic stress disorder. The study included every veteran who received outpatient mental health services in all 172 VA medical centers and freestanding outpatient clinics from September 8, 1986, through October 3, 1986.

During this period, data were collected on 339,705 visits made by 107,107 veterans. Of these veterans, 22,463 had a presenting diagnosis of alcoholism and were included in this study. For the purposes of the study, each patient was counted only once, regardless of the number of mental health outpatient visits made; duplicate observations were dropped from the sample, and the separate diagnoses for each individual from all mental health visits during the month of the study were included for each patient.

Data collection. Information about the patients was obtained during each of their outpatient mental health visits. A visit was defined as any scheduled or unscheduled contact between a patient and his or her mental health counselor. Counselors included psychologists, psychiatrists, social workers, nurses, readjustment counselors, and mental health trainees. Treatment programs included mental hygiene clinics, day hospitals, day treatment centers, and alcohol and drug dependency treatment programs. A more detailed description of the sampling methodology, data collection procedures, and other methodological information is published elsewhere (6).

Measures. A brief questionnaire was completed by the treatment provider each time a veteran was seen. It was estimated that questionnaires for 88.4 percent of all visits were returned, with overall rates of missing data for individual items ranging from .3 percent to 5.2 percent. The one-page questionnaire included items about the veteran's demographic characteristics (for example, age and gender), wartime experiences (for example, period of wartime service or experience with combat), treatment program and provider (for example, day hospital and social worker), and clinical characteristics, including psychiatric diagnoses and highest level of adaptive functioning.

Diagnoses and level of adaptive functioning were based on *DSM-III* criteria (7). Adaptive functioning was measured by *DSM-III* axis V, a composite rating that includes three areas of functioning: social relations, occupational functioning, and use of leisure time. For purposes of this study, ratings of 5 were considered poor, 6 very poor, and 7 grossly impaired; these ratings were combined to give an overall measure of impairment in adaptive functioning. As such, the highest level of adaptive functioning can be regarded as a proxy measure for severity of impairment in everyday life.

Data analysis. Because patients could be included in more than one diagnostic category, the assumption of independent observations for statistical analysis was violated. Furthermore, chi square tests would have indicated that all comparisons were significant because of the extremely large sample sizes. Therefore, statistical tests of significance were not done. To interpret the findings, we relied instead on the clinical importance of the differences.

Results

Subjects. Given the demographics of the population served by VA medical centers, it is not surprising that the vast majority of alcoholic patients included in this study were men (98.7 percent). Their involvement in the military covered all recent eras of wartime service, with 20.1 percent from World War II and before; 26.3 percent from post-World War II, the Korean War, and the post-Korean War era; 44.4 percent from the Vietnam era; and 9.7 percent from the post-Vietnam era. Two-thirds of the subjects (65.2 percent) had some type of military-related physical or mental disability, and 39.6 percent were exposed to combat or hostile fire sometime during their service. Only 1.1 percent of these veterans were former prisoners of war.

Treatment location and type. The majority of outpatients sought treatment in alcohol and drug dependency treatment programs (53.7 percent). An additional 36.3 percent sought treatment at mental hygiene clinics, 4.4 percent at day treatment centers, 2 percent at day hospitals, and 14.9 percent at other VA clinics. Reasons for these visits included group therapy (40.3 percent), individual therapy (35.6 percent), medication check (19.5 percent), intake evaluation (16.2 percent), emergency visit (7.4 percent), and family therapy (3.2 percent).

Current comorbid psychiatric disorders. As shown in Table 1, more than half of this outpatient sample of alcoholic patients (55.3 percent) had one or more comorbid psychiatric diagnoses. The mean number of comorbid mental disorders, excluding alcoholism, was 1.7. The number of diagnoses, however, varied with age. The overall rates of comorbidity were

Table 1
Veterans with a presenting diagnosis of alcoholism (N=22,463) who sought outpatient psychiatric treatment during one month in 1986, by age group and additional diagnosis, in percentages

Diagnosis and N with diagnosis[1]	Overall %	Age group ≤29 (N=1,322)	30–39 (N=7,143)	40–49 (N=4,502)	50–59 (N=4,967)	60–69 (N=3,986)	≥70 (N=543)
Any psychiatric diagnosis not an alcohol disorder (N=12,432)	55.3	59.4	65.8	53.0	47.1	48.2	54.5
Substance abuse other than alcohol (N=3,663)	16.3	38.2	30.1	13.5	5.6	2.7	3.3
Schizophrenia (N=2,760)	12.3	13.8	15.1	11.6	11.4	9.2	8.1
Affective disorders (N=4,496)	20.0	12.6	19.2	20.1	22.1	21.0	20.8
Bipolar disorder[2] (N=1,108)	4.9	4.5	4.8	5.0	5.4	4.5	4.4
Major depression (N=1,862)	8.3	4.4	7.7	8.3	9.3	9.0	11.8
Dysthymia (N=1,526)	6.8	3.7	6.7	6.8	7.4	7.5	4.6
Anxiety disorders (N=1,730)	7.7	3.3	7.1	6.9	8.4	10.0	9.8
Posttraumatic stress disorder (N=1,765)	7.9	.9	14.9	9.3	2.1	3.9	2.4
Organic brain syndrome or dementia (N=948)	4.2	.8	1.8	2.5	4.8	9.0	18.4
Personality disorders (N=2,558)	11.4	12.9	15.8	12.3	8.6	6.4	3.9
All other diagnoses (N=3,540)	15.8	12.6	17.1	14.5	14.9	16.3	19.5

[1] Some patients had more than one comorbid diagnosis.
[2] Includes cyclothymia

substantially higher for persons age 39 or younger (62.6 percent) than for those age 40 or older (50.7 percent).

Most frequently identified as comorbid diagnoses were affective disorders, substance abuse disorders other than alcoholism, schizophrenia, personality disorders, posttraumatic stress disorder (PTSD), anxiety disorders, and organic brain syndrome or dementia. The affective disorders included major depressive disorder, dysthymia, and bipolar disorder and cyclothymia combined. Anxiety disorders included generalized anxiety (5.8 percent), panic disorder (1 percent), obsessive-compulsive disorder (.5 percent), and agoraphobia (.4 percent). A comorbidity rate of 15.8 percent was found for all other diagnoses combined; these other diagnoses included adjustment disorder (4 percent), paranoid disorder (2.3 percent), psychic factors associated with diseases classified elsewhere (1.7 percent), other psychotic disorders (1.5 percent), and other psychiatric disorders (6.3 percent).

As shown in Table 1, substance abuse disorders, PTSD, schizophrenia, and personality disorders were more likely to be comorbid diagnoses among younger patients, with rates decreasing with age. Age-related differences were particularly dramatic for substance abuse disorders other than alcoholism, which were found relatively frequently in those 29 and younger and very infrequently in those over age 50. The rates for PTSD, schizophrenia, and personality disorders, however, peaked among patients between the ages of 30 and 39 and decreased considerably in successive age groups.

In contrast, rates of affective disorders increased with age, remaining stable across the older age groups after reaching a rate of approximately 20 percent among those between the ages of 30 and 39. Of the affective disorders, rates for major depression showed the most dramatic increase with age, rates of bipolar disorder remained relatively stable across age groups, and rates for dysthymia doubled after age 29 and then remained stable until age 70 and older. The presence of anxiety disorders also increased with age. Finally, and not surprisingly, substantial increments in comorbidity rates with advancing age were observed for organic brain syndrome or dementia. Relatively few patients under age 50 had this comorbidity.

Level of adaptive functioning. Percentages of severe impairment, measured by ratings of poor to grossly impaired levels of adaptive functioning, were calculated for the various psychiatric comorbidities and

Table 2
Alcoholic veterans with various comorbid psychiatric diagnoses who were rated severely impaired in adaptive functioning[1], by age group, in percentages

Diagnosis and N severely impaired[1]	Overall %	Age group ≤29 (N=379)	30–39 (N=2,311)	40–49 (N=1,445)	50–59 (N=1,467)	60–69 (N=1,145)	≥70 (N=155)
Any psychiatric diagnosis not an alcohol disorder (N=4,547)	52.7	46.7	53.0	54.1	52.6	53.2	48.7
No comorbid psychiatric diagnosis (N=2,355)	30.0	29.6	32.5	33.2	29.2	25.6	22.3
Substance abuse other than alcohol (N=1,514)	42.0	39.6	43.8	42.2	37.6	27.4	41.2
Schizophrenia (N=1,850)	67.6	63.5	67.1	66.9	68.6	70.5	65.9
Affective disorders (N=1,981)	44.6	46.4	48.1	46.3	40.7	43.0	35.9
Bipolar disorder[2] (N=515)	47.0	50.8	49.4	47.1	41.6	48.3	54.2
Major depression (N=852)	46.3	55.2	50.6	46.2	44.5	42.2	37.5
Dysthymia (N=614)	40.6	33.3	44.2	45.6	35.9	38.4	16.0
Anxiety disorders (N=729)	42.6	32.6	47.2	43.3	40.4	41.6	30.2
Posttraumatic stress disorder (N=888)	51.1	33.3	53.2	52.7	46.2	37.1	46.2
Organic brain syndrome or dementia (N=633)	67.3	60.0	59.7	61.1	67.4	74.6	58.6
Personality disorders (N=1,290)	51.0	51.5	53.8	52.7	44.8	46.5	33.3
All other diagnoses (N=1,535)	43.8	38.9	45.3	44.7	44.7	41.6	34.0

[1] Severe impairment was defined as a DSM-III axis V rating of poor to grossly impaired adaptive functioning in the past year.
[2] Includes cyclothymia

by age. As shown in Table 2, more than half of all patients with at least one coexisting psychiatric diagnosis were rated as severely impaired. In contrast, only 30 percent of alcoholic outpatients with no psychiatric comorbidity were rated poorly in adaptive functioning. Rates of severe impairment for both those with a comorbid diagnosis and those without an additional psychiatric diagnosis were consistent across age groups.

The highest overall rates of severe adaptive impairment were found in alcoholic veterans with the comorbid diagnoses of schizophrenia and organic brain syndrome or dementia. In fact, the rates of poor to severe impairment were high for schizophrenic patients in all age groups, with the highest rates for those between the ages of 30 and 39 as well as 60 and 69 and the lowest rates for patients age 29 and younger and age 70 and older. Similarly, the proportion of alcoholic outpatients with concurrent organic brain syndrome or dementia who had considerable impairment was large regardless of age. Significant impairments in adaptive functioning were found in nearly half of the veterans with each of the remaining comorbid diagnoses.

Among patients with substance abuse diagnoses other than alcohol disorders, the proportion of those with poor to severe impairment increased between the youngest age group (age 29 and under) and the 30 to 39 age group and then steadily decreased to about one-fourth of patients between age 60 and 69; however, the proportion grew to more than 40 percent in the oldest age group. On the other hand, more linear age-related decreases in rates of poor functioning were found for major depression, dysthymia, and personality disorders. While approximately half of all patients with PTSD had ratings that were indicative of severe adaptive impairment, substantially lower rates of impairment were observed for those age 29 and younger and for those between age 60 and 69.

Rates of poor adaptive functioning generally increased with age for organic brain syndrome, with the highest rate of dysfunction for any comorbid diagnosis found in patients between age 60 and 69. Unexpectedly, however, the rate of severe

impairment for organic brain syndrome decreased by about 15 percent among patients age 70 and older.

Discussion

The high rate of comorbid psychiatric illness (55.3 percent) in this group of alcoholic patients seeking mental health outpatient treatment was remarkably similar to the rate reported by Regier and associates (4) for alcoholics in the general population who had sought treatment in the previous six months (55 percent). However, the rate of comorbidity in our study was somewhat lower than that reported by Ross and colleagues (1) for a sample of patients seeking substance abuse treatment (78.1 percent). One explanation for the high concentration of comorbid diagnoses among alcoholics seeking treatment may be Berkson's bias (8): patients with multiple disorders are more inclined to seek treatment, so that true comorbidity rates are more likely to be elevated in treatment settings.

More than half of the patients in our sample who had one or more comorbid psychiatric diagnoses were rated from poor to grossly impaired in adaptive functioning; in contrast, fewer than one-third of alcoholic patients with no comorbid disorder were similarly rated in adaptive functioning. From these data it is clear that alcoholic patients seeking outpatient treatment who have at least one concurrent psychiatric illness are substantially more likely to be severely impaired in their everyday functioning.

Clinicians should be vigilant in their assessment and treatment of patients with comorbid disorders because they may be at high risk for treatment failure or serious adverse outcomes. Treatment personnel should recognize that the likelihood that substance-abusing patients will have a comorbid psychiatric disorder increases as alcohol or other drug problems become more severe (1).

Not surprising for a treatment setting, rates for individual comorbid diagnoses were consistently higher than those reported in the community-based ECA study (9). However, rates for individual comorbid disorders were more consistent with those reported in numerous previous studies of comorbidity among alcoholics in treatment (1, 10–12). The mean of 1.7 comorbid diagnoses among the alcoholic patients in this study is also consistent with those found in previous studies (1). The overall comorbidity rate among younger patients was 20 percent higher than among those over age 40. This higher rate is probably a result of the higher concentration of coexisting substance abuse (34.2 percent), schizophrenia (14.5 percent), and personality disorders (14.4 percent) among patients in early adulthood—that is, under age 40. All three disorders are more prevalent among young adults than among middle-aged or older adults and therefore may be more likely to co-occur with alcoholism among younger patients. In addition, these comorbid disorders may place alcoholic patients at higher risk for morbidity and premature death, resulting in lower prevalence rates with increasing age (13). Clinicians should be especially aware of the increased risk of comorbidity among alcoholic patients under age 40 who seek treatment.

Certain comorbid diagnoses showed overall increases in rates across age groups. The most dramatic increase was seen for organic brain syndrome or dementia, which would be expected to increase in prevalence with advancing age. However, a greater than threefold increase was also found for both major depressive disorder and anxiety disorders. All three diagnoses are more common among older persons (9), which may account for the high rates of comorbidity among older patients in our study.

Regardless of age group, the highest rates of severe adaptive impairment were found in alcoholic veterans with comorbid diagnoses of schizophrenia and organic brain syndrome or dementia. These two diagnostic groups may be at highest risk for adverse clinical consequences at any age because their level of adaptive functioning is most likely to be severely impaired.

Posttraumatic stress disorder peaked in patients between the ages of 30 and 39; rates decreased considerably with increasing age. This finding is probably due to the high concentration of Vietnam veterans suffering from PTSD among the younger age cohort. Although veterans from earlier wars may also experience symptoms of PTSD, they may not receive this diagnosis since it is most often associated with the Vietnam conflict. Approximately half of the alcoholic patients with PTSD were rated as severely impaired in adaptive functioning, suggesting that alcoholics with PTSD should be carefully assessed for level of social and occupational functioning. Both may play prominent roles in long-term recovery from alcohol problems and from PTSD.

The overall rate of psychiatric comorbidity in this study, as well as rates for individual diagnoses, should be interpreted with caution. First, it is important to note that because diagnoses were made by clinicians and not through systematic structured interviews, diagnoses may be differentially under- or overreported for specific age groups (12). Severity of impairment may also have been differentially rated. Expectations by clinicians that certain patients were more likely to have particular disorders because of, for example, their age or combat experience, may have resulted in biased prevalence estimates.

Second, variations among regions or among hospitals in diagnostic patterns may have distorted prevalence rates of specific diagnoses and ratings of adaptive functioning. Third, because many alcoholics during detoxification or early in treatment regularly have symptoms of depression, anxiety, confusion, or psychosis, it is often difficult to make accurate diagnoses of these disorders among alcoholics in early treatment for their alcoholism (14,15). It is critically important that clinicians differentiate between the symptoms and syndromes that represent underlying psychopathology and those that are part of a transient state of alcohol withdrawal (16–18).

It is important to recognize the limitations of a cross-sectional research design when interpreting results of studies examining age ef-

fects. As mentioned earlier, the cohort effect may be responsible for a bias in prevalence of PTSD among younger patients. Similarly, historical trends in the use and abuse of illicit substances may result in a preponderance of substance abuse disorders in younger age cohorts. Longitudinal studies would help clarify whether comorbidity rates are specifically related to age differences or to cohort effects.

Because of the extensiveness of this nationwide population survey, the length of the study instrument was limited to one page. Unfortunately, such a brief instrument did not make it possible to determine either the sequence of diagnoses (primary versus secondary) or their recency (current versus lifetime). Future research on psychiatric comorbidity among alcoholics should be directed at exploring both of these important issues.

Although this study included only veterans, which may limit generalizability—especially to female alcoholics because of differences in concomitant psychopathology—it represents the first major national study of the outpatient mental health treatment population in the nation's largest health care system. The findings in this study are consistent with community studies and previous studies of treatment facilities. Because many VA medical centers actually function as general outpatient community mental health clinics, this study contributes to our knowledge of the nature and extent of comorbid psychiatric disorders among alcoholics seeking treatment.

Conclusions

These findings confirm and extend results of earlier studies of psychiatric comorbidity among alcoholics seeking treatment. Rates of certain comorbid disorders showed age-related trends, with rates of some disorders higher among younger patients and others higher among older patients. Adaptive functioning was rated as poor to grossly impaired in a substantially larger proportion of alcoholic patients with at least one comorbid disorder, irrespective of age, indicating the critical importance of careful evaluation and specialized treatment for these patients (19).

Further research and training should focus on developing innovative approaches to the treatment of alcoholic patients who have comorbid psychiatric diagnoses (20,21). Finally, future research should also be directed toward a better understanding of impairment in adaptive functioning and of severity of illness to better provide for the special needs of patients with combined alcoholism and mental disorders.

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