Alcohol Use Disorders, Consumption Patterns, and Health-Related Quality of Life of Primary Care Patients

Robert J. Volk, Scott B. Cantor, Jeffrey R. Steinbauer, and Alvah R. Cass

This study examined the association of alcohol use disorders and consumption patterns with various dimensions of Health-Related Quality of Life (HRQOL) in primary care patients, as measured by the SF-36 Health Survey. A probability sample of 1333 primary care patients completed the Alcohol Use Disorder and Associated Disabilities Interview Schedule to determine the presence of alcohol abuse or dependence disorders, and answered questions about patterns of alcohol consumption. Physical and Mental Health Component Summaries and primary scales of the SF-36 were used as measures of HRQOL. Patients meeting criteria for alcohol dependence scored lower (poorer HRQOL) than patients from other consumption groups. Patients who drank in a Frequent, Low-Quantity pattern generally had better overall HRQOL than patients from other consumption groups. Frequent, High-Quantity Drinkers showed markedly lower scores in the areas of Role Functioning and Mental Health. In contrast to recent studies of mental health problems in primary care, alcohol use disorders and consumption patterns seem to have a modest impact on patients' HRQOL. These effects, though, vary by dimension of functioning, the presence of alcohol dependence rather than abuse, and pattern of alcohol consumption. Global measures of HRQOL such as the SF-36 Health Survey may provide important indicators of treatment effectiveness in primary care intervention studies for patients with drinking problems.

Key Words: Health-Related Quality of Life, Alcohol Abuse/Dependence, Primary Care.
and as most sensitive to treatment-related change in functioning. The developers of the SF-36 recommend it be used as a "generic core" battery of measures for comparison with other studies and patient populations, as opposed to serving as the principal outcome measure in treatment studies.

Few studies have examined SF-36 health profiles for alcohol use disorders, whether among patient or nonpatient populations.\textsuperscript{10,15} Such information is particularly important in planning outcome studies, because potential treatment effects must be considered against baseline functioning. Furthermore, because reductions in alcohol consumption are often the primary indicators of treatment efficacy in primary care-based intervention studies, the association of alcohol consumption with HRQOL should be more carefully explored. This study examined the impact of alcohol use disorders and patterns of alcohol consumption by primary care patients on their HRQOL, as measured by the SF-36 Health Survey.

**METHODS**

This study represents a secondary analysis of data from a study comparing the efficacy of alcoholism screening instruments when used with primary care patients. Subjects for this study included a probability sample of 1333 adult primary care patients presenting to the Family Practice Center of the University of Texas Medical Branch, located in Galveston, TX. Minority and female patients were oversampled, due to the lower prevalence of alcohol use disorders among women, and proportionately fewer minority patients in the clinic patient base. Details of the sampling plan and procedures can be found elsewhere.\textsuperscript{16} Before scheduled office visits, subjects completed self-administered questionnaires, including sociodemographic indicators, questions on cigarette use, and the SF-36 Health Survey. After office visits, subjects participated in a diagnostic interview, including questions on alcohol consumption over the past 30 days. Informed, written consent was obtained, and subjects were compensated $10 for participation. Characteristics of the sample are given in Table 1.

**Measures**

**SF-36 Health Survey.** As described previously, the SF-36 is a well-known, validated, and standardized general measure of HRQOL.\textsuperscript{13} The instrument measures the respondent's subjective impression of health-related functioning in eight areas. Scale labels and sample items are given in Table 2. Norms for many health conditions are available.\textsuperscript{14} The instrument is meant to be self-administered, as was done in this study. Recent scoring developments include derivation of the Physical Component Summary (PCS) and the Mental Health Component Summary (MCS), from orthogonal principal components analysis of the eight scales.\textsuperscript{17} The summary components have the advantage of higher reliability than the individual scales and are standardized as T-scores (mean of 50 and standard deviation of 10) to aid in interpretation. For each scale, a higher score indicates better functioning.

**Alcohol Use Disorders.** The Alcohol Use Disorder and Associated Disabilities Interview Schedule (AUDADIS) was used as the diagnostic schedule in this study. The AUDADIS is a structured diagnostic interview schedule developed for use in the National Longitudinal Alcohol Epidemiologic Survey (NLAES) initiated by the National Institute on Alcohol Abuse and Alcoholism in 1992, and is designed to be administered by nonclinicians.\textsuperscript{18} The test-retest reliability of the AUDADIS for alcohol use disorders is excellent.\textsuperscript{19} In this study, we used DSM-IV criteria for alcohol abuse and alcohol dependence in the past year.\textsuperscript{20}

**Alcohol Consumption Patterns.** A combined measure of quantity and frequency of alcohol use was adapted from definitions used by Cahalan et al.\textsuperscript{21} and Cherpitel\textsuperscript{22} as follows: *Abstainers*, never more than 12 drinks of any kind of alcohol in a given year; *Infrequent Drinkers*, did not drink in the past 30 days and did not meet criteria for an abstainer; *Less Frequent, Low-Quantity Drinkers*, drank <4 days in the past 30 days and drank between 1 and 4 drinks/episode; *Less Frequent, High-Quantity Drinkers*, drank <4 days in the past 30 days and drank 5 or more drinks/episode; *Frequent, Low-Quantity Drinkers*, drank >5 days in the past 30 days and drank between 1 and 4 drinks/episode; and *Frequent, Heavy Drinkers*, drank >5 days in the past 30 days and drank 5 or more drinks/episode.

**Psychiatric Comorbidity.** The Primary Care Evaluation of Mental Disorders (PRIME-MD) is a recently developed and validated diagnostic schedule for the diagnosis of common mental disorders in the primary care setting.\textsuperscript{23} We administered the Mood and Anxiety Disorder Modules in this study, each yielding diagnostic criteria consistent with DSM-III-R. Although the PRIME-MD was originally developed for administration by primary care physicians, we administered the modules using trained lay interviewers. The highly structured interview format, lack of physician judgment in assessment of mood and anxiety symptoms, and consistency of our prevalence estimates with those observed in the PRIME-MD 1000 study\textsuperscript{23} suggested this approach was acceptable.

**Data Analysis**

Conventions set forth in previous studies using the SF-36 were used to guide the analyses and presentation of the results.\textsuperscript{13,26,27} Results are presented first for alcohol use disorders and then for consumption pat-

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**Table 1. Sample Characteristics**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Males</th>
<th>399 (29.9%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females</td>
<td>934 (70.1%)</td>
<td></td>
</tr>
<tr>
<td>Age Range</td>
<td>18–86</td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>43.2 (15.7)</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>512 (38.4%)</td>
<td></td>
</tr>
<tr>
<td>African-American</td>
<td>471 (35.3%)</td>
<td></td>
</tr>
<tr>
<td>Mexican-American</td>
<td>350 (26.3%)</td>
<td></td>
</tr>
<tr>
<td>Daily cigarette use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Among all patients</td>
<td>382 (28.7%)</td>
<td></td>
</tr>
<tr>
<td>Among patients with an Alcohol Abuse Disorder</td>
<td>25 (52.1%)</td>
<td></td>
</tr>
<tr>
<td>Among patients with an Alcohol Dependence Disorder</td>
<td>54 (52.4%)</td>
<td></td>
</tr>
<tr>
<td>Alcohol Use Disorder (past year)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Disorder</td>
<td>1182 (88.7%)</td>
<td></td>
</tr>
<tr>
<td>Abuse</td>
<td>48 (3.6%)</td>
<td></td>
</tr>
<tr>
<td>Dependence</td>
<td>103 (7.7%)</td>
<td></td>
</tr>
<tr>
<td>Alcohol consumption patterns*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstainer</td>
<td>435 (32.6%)</td>
<td></td>
</tr>
<tr>
<td>Infrequent Drinker</td>
<td>349 (26.2%)</td>
<td></td>
</tr>
<tr>
<td>Less Frequent, Low-Quantity</td>
<td>242 (18.2%)</td>
<td></td>
</tr>
<tr>
<td>Less Frequent, High-Quantity</td>
<td>5 (2.8%)</td>
<td></td>
</tr>
<tr>
<td>Frequent, Low-Quantity</td>
<td>198 (14.9%)</td>
<td></td>
</tr>
<tr>
<td>Frequent, High-Quantity</td>
<td>72 (5.4%)</td>
<td></td>
</tr>
</tbody>
</table>

* See text for definitions of alcohol consumption groups.
The strategy was to consider initially the SF-36 components, because they represent summary measures of mental and physical health, and then examine in more detail the eight scales to identify domains of functioning impacted by alcohol use problems. First, analysis of variance was used to examine PCS and MCS scores for patients grouped by diagnosis: those not meeting criteria for an alcohol use disorder (No Disorder), those meeting criteria for Alcohol Abuse, and those meeting criteria for Alcohol Dependence. Means were adjusted for covariates, including age, sex, race, and daily cigarette use, using least-squares regression (least-squares means are reported in the tables). Daily cigarette use was included as a covariate due to the association of cigarette and alcohol use, and the potential health burden of regular cigarette use. Contrasts were specified, and significance tests reported. Analyses were rerun with physical comorbidity as an additional covariate and compared with the previous results.

Given the high co-occurrence of alcohol use disorders with mood and anxiety disorders, we used hierarchical linear regression to investigate how the effect of alcohol use disorders on MCS might be moderated by their co-occurrence with mood/anxiety disorders. Alcohol use disorders were entered first into the regression equation, followed by the relevant covariates, and then the mood and anxiety disorder variables. By modeling the relationship in this way, it was possible to examine change in the magnitude of the regression coefficients for the alcohol use disorder variables before and after adjustments for mental health disorders co-occurring with alcohol use disorders. We then plotted least-squares SF-36 scale means for the three diagnostic groups.

The second series of analyses examined the association of alcohol consumption patterns with SF-36 scores. Again, analysis of variance was used to estimate PCS and MCS means for each of the alcohol consumption groups, adjusted for the same covariates mentioned above. Contrasts with Lifetime Abstainers serving as the comparison group were specified and significance tests reported. We then used multiple linear regression to estimate average differences between Lifetime Abstainers and patients in the other alcohol consumption groups, for each SF-36 scale. These regressions were adjusted for the same covariates previously mentioned. Analyses were also rerun with physical comorbidity as an additional covariate and then compared with the previous results.

The SF-36 Health Survey is copyrighted by the Medical Outcomes Trust.

### Table 2. SF-36 Scales, Components, and Sample Items

<table>
<thead>
<tr>
<th>SF-36 Scales*</th>
<th>Physical Health Component Summary</th>
<th>Mental Health Component Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>PF</td>
<td>Physical Functioning (10 items)</td>
<td></td>
</tr>
<tr>
<td>RP</td>
<td>&quot;lifting or carrying groceries&quot;</td>
<td></td>
</tr>
<tr>
<td>BP</td>
<td>Role Functioning-Physical (4 items)</td>
<td>&quot;limited in the kind of work or other activities...&quot;</td>
</tr>
<tr>
<td>GH</td>
<td>Bodily Pain (2 items)</td>
<td>&quot;How much bodily pain have you had during the past 4 weeks?&quot;</td>
</tr>
<tr>
<td>VT</td>
<td>General Health (5 items)</td>
<td>&quot;In general, would you say your health is...&quot;</td>
</tr>
<tr>
<td>SF</td>
<td>Social Functioning (2 items)</td>
<td>&quot;Did you feel tired?&quot;</td>
</tr>
<tr>
<td>RE</td>
<td>&quot;health or emotional problems interfered with your normal social activities...&quot;</td>
<td></td>
</tr>
<tr>
<td>MH</td>
<td>Role Functioning-Emotional (3 items)</td>
<td>&quot;...problems with your work or other regular daily activities as a result of any emotional problems...&quot;</td>
</tr>
<tr>
<td></td>
<td>Mental Health (5 items)</td>
<td>&quot;...have you felt downhearted and blue?&quot;</td>
</tr>
</tbody>
</table>

The SF-36 Component Summaries†

<table>
<thead>
<tr>
<th>SF-36 Component Summaries†</th>
<th>Physical Health Component Summary</th>
<th>Mental Health Component Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCS</td>
<td>Physical Health Component Summary</td>
<td></td>
</tr>
<tr>
<td>MCS</td>
<td>Mental Health Component Summary</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 gives PCS and MCS adjusted means for the three alcohol use disorder groups: No Disorder, Alcohol Abuse, and Alcohol Dependence. PCS was not statistically significantly different across alcohol use disorder groups, whereas No Disorder and Alcohol Abuse patients scored significantly higher on MCS than Alcohol Dependence patients (a difference of slightly <1 SD). Including physical comorbidity as a covariate increased the magnitude of the differences for PCS, but the main effect did not reach statistical significance (p = 0.06). Physical comorbidity was not related to MCS.

### RESULTS

**Alcohol Use Disorders and SF-36 Component Summaries**

Table 3 gives PCS and MCS adjusted means for the three alcohol use disorder groups: No Disorder, Alcohol Abuse, and Alcohol Dependence. PCS not significant.

<table>
<thead>
<tr>
<th>Table 3. SF-36 Component Means, by Current Alcohol Use Disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Disorder</td>
</tr>
<tr>
<td>-------------</td>
</tr>
<tr>
<td>PCS</td>
</tr>
<tr>
<td>MCS</td>
</tr>
</tbody>
</table>

Note: Components are in units of T-scores, where the mean is 50 and SD is 10. Means are adjusted for sex, age, race/ethnicity, and cigarette use.

Contrast with Alcohol Dependence significant at p < 0.001. Main effect for PCS not significant.

**Alcohol Use Disorders and SF-36 Component Summaries**

Table 4 gives results from a linear regression analysis, where MCS was regressed on Alcohol Abuse and Alcohol Dependence (the No Disorder group thus served as the reference group). This table shows that patients meeting criteria for Alcohol Abuse were not significantly different from patients not meeting criteria for a disorder. There was a decrement in MCS scores of 8.4 points for patients meeting criteria for Dependence, compared with the No Disorder group, after adjustment for sociodemographic factors and daily cigarette use. When current mood and anxiety disorders were added to the model, the effect for Depen-
DISCUSSION

This study demonstrates a modest but potentially important association between alcohol use disorders and HRQOL of primary care patients as measured by the SF-36 Health Survey. Alcohol dependence was associated with poorer quality of life in the eight areas of functioning measured by the SF-36, compared with patients not meeting criteria for a disorder and those meeting criteria for Alcohol Abuse. These differences were particularly large for scales measuring role functioning and mental health. The magnitude of the decrement in the MCS for alcohol-dependent patients (after adjustment for comorbidity with physical illness) was 4.6 points, a reduction of 50%.

Alcohol Consumption Patterns and SF-36 Scales

Finally, Table 6 gives adjusted means for Lifetime Abstainers and then average differences from Lifetime Abstainers for each of the other alcohol consumption groups. A negative average difference indicates poorer HRQOL, whereas a positive difference indicates better HRQOL, compared with the Lifetime Abstainer group. Overall, Infrequent Drinkers and Frequent, High-Quantity Drinkers tended to score lower, and Frequent, Low-Quantity Drinkers tended to score higher than Lifetime Abstainers. Tests of statistical significance showed that Infrequent Drinkers scored lower on Bodily Pain, General Health, Vitality and Mental Health; Less Frequent, High-Quantity (Binge) Drinkers scored lower on Mental Health; Frequent, Low-Quantity Drinkers scored higher (better HRQOL) on Physical Functioning, Role Functioning-Physical and Social Functioning; and Frequent, High-Quantity Drinkers scored lower on Vitality and Mental Health, compared with Lifetime Abstainers. No other differences were statistically significant. Including physical comorbidity in the analysis did not change the pattern of the findings, with most differences from Lifetime Abstainers changing <2 points.

Alcohol Use Disorders and SF-36 Scales

Figure 1 gives SF-36 Health Survey profiles for the three diagnostic groups. The figure shows a modest decrement in HRQOL associated with Alcohol Dependence for each SF-36 scale. In contrast, patients meeting criteria for Alcohol Abuse were not significantly different from the No Disorder group. When physical comorbidity was added as a covariate, the magnitude of the observed differences increased slightly (the difference between the Alcohol Abuse and Alcohol Dependence groups reached statistical significance on the Bodily Pain scale).

Alcohol Consumption Patterns and SF-36 Component Summaries

Table 5 gives adjusted means for PCS and MCS by the alcohol consumption groups. Frequent, Low-Quantity Drinkers scored ~4 points higher than Lifetime Abstainers on the PCS. No other contrasts with Lifetime Abstainers were significant for PCS. Infrequent Drinkers and Less Frequent, High-Quantity (Binge) Drinkers scored ~2 and 5 points lower on MCS, compared with Lifetime Abstainers, respectively. Adding physical comorbidity as a covariate had a minimal effect on the component means.

Table 4. Results from Regression of SF-36 MCS on Alcohol Use Disorders

<table>
<thead>
<tr>
<th>Alcohol Use Disorder (No Disorder is reference group)</th>
<th>Unadjusted for covariates</th>
<th>Adjusted for sociodemographic factors and daily cigarette use</th>
<th>Adjusted for sociodemographic factors, daily cigarette use, and current Mood and Anxiety Disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abuse</td>
<td>-1.82 (-5.06, 1.43)</td>
<td>-0.76 (-4.02, 2.50)</td>
<td>-0.46 (-2.96, 2.05)</td>
</tr>
<tr>
<td>Dependence</td>
<td>-8.55 (-10.82, -6.27)*</td>
<td>-8.43 (-10.72, -6.15)*</td>
<td>-4.55 (-6.32, -2.77)*</td>
</tr>
<tr>
<td>R²</td>
<td>0.04</td>
<td>0.08</td>
<td>0.46</td>
</tr>
</tbody>
</table>

Note: Regression coefficients are in units of T-scores, where the mean is 50 and SD is 10. For example, a regression coefficient of -8.55 for alcohol-dependent patients represents an average difference of slightly <1 SD in MCS scores (i.e., poorer functioning), compared with patients not meeting criteria for an alcohol use disorder. The 95% confidence limits for regression coefficients are given in parentheses.

* Regression coefficient statistically significant at p < 0.05.
Table 5. SF-36 Component Means by Alcohol Consumption Groups

<table>
<thead>
<tr>
<th>Lifetime Abstainers (n = 435)</th>
<th>Infrequent Drinkers (n = 349)</th>
<th>Less Frequent, Low-Quantity Drinkers (n = 242)</th>
<th>Less Frequent, High-Quantity Drinkers (n = 37)</th>
<th>Frequent, Low-Quantity Drinkers (n = 198)</th>
<th>Frequent, High-Quantity Drinkers (n = 72)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCS</td>
<td>43.5</td>
<td>42.0</td>
<td>44.6</td>
<td>45.2</td>
<td>47.6*</td>
</tr>
<tr>
<td>MCS</td>
<td>49.6</td>
<td>47.7*</td>
<td>48.3</td>
<td>44.7*</td>
<td>49.0</td>
</tr>
</tbody>
</table>

Note: Components are in units of T-scores, where the mean is 50 and SD is 10. Means are adjusted for sex, age, race/ethnicity, and cigarette use.

* Contrast with Lifetime Abstainers significant at p < 0.05.

Average Difference from Lifetime Abstainers

<table>
<thead>
<tr>
<th>Alcohol Consumption Group</th>
<th>No. of Patients†</th>
<th>PF</th>
<th>RP</th>
<th>BP</th>
<th>GH</th>
<th>VT</th>
<th>SF</th>
<th>RE</th>
<th>MH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrequent Drinkers</td>
<td>349</td>
<td>-1.85</td>
<td>-2.94</td>
<td>-4.92*</td>
<td>-5.66*</td>
<td>-5.66*</td>
<td>-3.61</td>
<td>-3.38</td>
<td>-3.10*</td>
</tr>
<tr>
<td>Less Frequent, Low-Quantity Drinkers</td>
<td>242</td>
<td>4.24</td>
<td>0.72</td>
<td>-1.35</td>
<td>1.79</td>
<td>-3.26</td>
<td>0.64</td>
<td>-0.19</td>
<td>-2.22</td>
</tr>
<tr>
<td>Less Frequent, High-Quantity Drinkers</td>
<td>37</td>
<td>4.30</td>
<td>-3.74</td>
<td>1.64</td>
<td>-2.79</td>
<td>-4.17</td>
<td>-6.29</td>
<td>-12.28</td>
<td>-7.08*</td>
</tr>
<tr>
<td>Frequent, Low-Quantity Drinkers</td>
<td>198</td>
<td>11.53*</td>
<td>11.99*</td>
<td>4.32</td>
<td>2.70</td>
<td>1.52</td>
<td>7.06*</td>
<td>1.40</td>
<td>-0.43</td>
</tr>
<tr>
<td>Frequent, High-Quantity Drinkers</td>
<td>72</td>
<td>0.94</td>
<td>-2.13</td>
<td>-5.32</td>
<td>-4.48</td>
<td>-5.76*</td>
<td>-1.75</td>
<td>-1.94</td>
<td>-6.68*</td>
</tr>
</tbody>
</table>

Note: A positive difference implies better functioning, and a negative difference implies worse functioning, compared with Lifetime Abstainers. Differences are adjusted for sex, age, race/ethnicity, and cigarette use. SF-36 scales are: PF, Physical Functioning; RP, Role Functioning-Physical; BP, Bodily Pain; GH, General Health; VT, Vitality; SF, Social Functioning; RE, Role Functioning-Emotional; MH, Mental Health.

* Statistically significant at p < 0.05, compared with Lifetime Abstainers.

† Sample size varies slightly for each analysis due to missing data.

disorders are in contrast to several recent studies of mental health problems in primary care patients. The PRIME-MD 1000 Study examined the HRQOL of primary care patients with mental health disorders, including alcohol use disorders. An alcohol use disorder was associated with a modest decrement in HRQOL for each of the SF-20 scales (an abbreviated version of the SF-36), after adjustments for sociodemographic indicators and common physical disorders. Further adjustment for co-occurring mental health disorders decreased these effects considerably, and it was concluded that alcohol use disorders have a minimal effect of HRQOL. The same pattern was demonstrated in a second analysis of the same dataset, where decrements in HRQOL were observed only for those patients with co-occurring alcohol and mental health disorders. Patients without any mental health disorders (including alcohol use disorders) were not significantly different from patients with alcohol use disorders absent of psychiatric comorbidity. The investigators offered two explanations for the lack of effect: (1) alcohol disorders may be less severe in primary care patients, and (2) the PRIME-MD lacks specificity as a measure of alcohol use disorders. The PRIME-MD does not differentiate alcohol abuse from dependence in its diagnosis of “probable alcohol abuse or dependence.” Our findings support this concern about the lack of diagnostic specificity of the PRIME-MD regarding alcohol use disorders.

The association between alcohol consumption patterns and HRQOL offers a more complex picture. Drinking patterns characterized by high-quantity alcohol consumption were generally related to poorer HRQOL. In contrast, Frequent, Low-Quantity Drinkers (people who drank regularly, but in small quantities) had the highest overall HRQOL. It might be argued that these patients (compared with Abstainers, Infrequent Drinkers, and Frequent, High-Quantity Drinkers) are simply in better overall health than patients from the other alcohol consumption groups. Yet, these effects were adjusted for daily cigarette use in the analyses, and further adjustment for physical comorbidity as measured by chronic health problems did not change the results. Another alternative explanation is that some patients with lifetime alcohol use disorders may have cut back on their consumption (their current pattern might be Infrequent Drinkers), because they had begun to experience detrimental health effects from chronic alcohol use. Yet, when we re-estimated the association of consumption patterns with SF-36 scales, including a lifetime alcohol use disorder as a covariate, the effects changed minimally. It seems that higher HRQOL associated with this steady, low-quantity pattern is not explained by former drinkers with many health problems who currently drink infrequently or abstain from alcohol.

Better overall HRQOL for patients in the Frequent, Low-Quantity group is consistent with the potential beneficial effects of moderate alcohol consumption reported in many studies, including data from the 1992 NLAES. The NLAES study showed that abstainers relative to light to moderate drinkers had higher rates of many alcohol-related medical conditions (including circulatory disease). Furthermore, higher rates of alcohol-related medical conditions were observed for very heavy drinkers, compared with light to moderate drinkers. Although not suggesting a direct health benefit of adopting a moderate consumption pattern, the SF-36 data in the current study are supported by these findings from the NLAES regarding moderate alcohol consumption and medical morbidity.
This study helps clarify the role of HRQOL in planning intervention studies for primary care patients with alcohol problems. The findings seem quite consistent regarding the negative impact of alcohol dependence on many domains of health and functioning. Alcohol dependence seems to be related to poorer mental health and to a lesser extent poorer physical functioning. This effect on mental health functioning, though, is moderated by co-occurring alcohol dependence with mood/anxiety disorders. (~50% of the effect of alcohol dependence on the MCS of the SF-36 was explained by co-occurring mood/anxiety disorders.) The co-occurrence of such disorders is very high in primary care patients. These findings highlight the importance of considering psychiatric comorbidity in primary care treatment studies for patients with alcohol problems.

In contrast to dependence, alcohol abuse does not seem to be associated with poorer HRQOL. Alcohol abuse is a problem of particular concern in the primary care setting, where primary and secondary prevention is emphasized. The primary care setting is the point of first contact with the health care system for many individuals. There is an interesting paradox here: patients for whom primary care intervention can have its greatest impact may have not experienced a diminished quality of life related to their alcohol use. From a research perspective, primary care intervention studies with alcohol abusers may not identify treatment-related changes in global HRQOL, because the baseline functioning of these patients may be quite high.

Primary care intervention studies have largely focused on the drinking patterns of patients, rather than on patients meeting diagnostic criteria for an alcohol use disorder. For example, patients with a prior history of alcohol dependence were excluded from the cross-national trial of brief interventions with heavy drinkers by the World Health Organization Collaborative Project on Identification and Treatment of Persons with Harmful Alcohol Consumption. To be eligible, patients needed to drink at least 32 or 50 g of alcohol/day for women and men, respectively, or to drink heavily and thus place themselves at risk of negative occupational or social consequences. The current study suggests these heavy drinkers would experience a diminished quality of life related to their consumption patterns, and there is a potential health benefit from interventions to reduce their consumption.

The use of the SF-36 as a measure of treatment outcome effectiveness in primary care alcohol treatment research is supported by this study. The measure seems sensitive to the presence of alcohol dependence and patterns of consumption. For intervention studies with high quantity alcohol users, or studies of patients meeting diagnostic criteria for dependence, the SF-36 has the potential to detect meaningful change in quality of life as a result of treatment.

This study is limited by use of a cross-sectional design. Similarly, the duration of drinking problems and variation in quantity of alcohol consumed over the patient's life course were not available. In addition, the physical comorbidity measure did not differentiate problems possibly attributable to alcohol consumption from other problems.

This study supports an association between alcohol use disorders, consumption patterns, and patients' reported quality of life related to their physical and mental health. Functioning and quality of life may be the treatment outcomes of most interest to patients. As such, global measures of HRQOL, such as the SF-36 Health Survey, should be considered important outcome indicators in primary care alcohol treatment research.

ACKNOWLEDGMENTS

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