CLINICAL ASPECTS

Alcohol Use and Health-Related Quality of Life among Hospital Outpatients in South Africa

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Abstract — Aims: This study examined the association of alcohol use and health-related quality of life (HRQOL) in a clinic population in South Africa. Methods: A probability sample of 1532 (56.4% men and women 43.6%) patients from different hospital outpatient departments completed the Alcohol Use Disorder Identification Test and the social functioning (SF)-12 Health Survey. Physical and Mental Health Component Summaries and primary scales of the SF-12 were used as measures of HRQOL. Results: The study did not find a significant association between alcohol-use disorders and HRQOL. [Physical Component Summary (PCS) and Mental health Component Summary (MCS)] in this clinic population. However, probable alcohol dependence was associated with poorer quality of life in three areas of functioning measured by the SF-12 (physical functioning, general health and mental health) compared with patients not meeting the criteria of alcohol dependence. The magnitude of the decrement in the PCS and MCS for daily or almost daily tobacco use, severe psychological distress and the number of other chronic conditions was significantly greater than for alcohol abuse or dependence. Conclusion: It appears that hospital outpatients in this study did not experience a diminished quality of life related to their alcohol use compared with other attenders at these clinics. Also, intervention studies with hazardous drinkers may not be able to identify treatment-related changes in global HRQOL.

INTRODUCTION

Poor health-related quality of life (HRQoL) has been found to be associated with alcohol use (frequency, intensity), in particular alcohol dependence, in various settings (Welsh et al., 1993; Foster et al., 1999; Okoro et al., 2004; Chen and Storr, 2006). In the health care setting, where alcohol problems are common, the association of HRQoL and alcohol use problems is often associated with comorbidity with other mental disorders (Volk et al., 1997). Research in screening and early intervention of alcohol problems has focused on the use of prevalence data in opportunistic settings where individuals with alcohol-related problems can be identified and helped before they reach alcohol dependence (Welsh et al., 1993). Studying the alcoholic at an early stage of addiction can provide information concerning the quality of life experienced by problem drinkers before treatment. The aim of this study was to study alcohol use and HRQoL in a clinic population in South Africa.

METHODS

Sample and procedure

The sample included 1532 hospital out-patients consecutively recruited from five different out-patient departments: family practice (159, 10.4%), general out-patient department (735, 48.0%), cardiology (160, 10.5), diabetes (297, 19.4%), ear nose and throat department (108, 7.1%) and from a dispensary (72, 4.7%). All out-patients were interviewed by four trained research assistants (qualified nursing assistants) in private rooms as they waited for their medical visit or at the dispensary throughout all hours of clinic operation for a period of 3 months in one tertiary hospital. The latter serves a large urban predominantly Black African population in Gauteng Province. Because of the stigma associated with alcohol consumption, individuals may feel defensive when responding to questions about their drinking and answer inaccurately. The study protocol was approved by the Research Ethics Committee of The University of Limpopo, Medunsa Campus and the Hospital Chief Executive Officer. Informed consent was obtained from the participating patients. Patients were not paid for participation.

Measures

Demographic characteristics

A researcher-designed questionnaire was used to record information on participants’ age, gender, educational level, marital status, income and residential status.

Alcohol consumption

The 10-item Alcohol Disorder Identification Test (AUDIT) (Babor et al., 2001) assesses alcohol consumption level (three items), symptoms of alcohol dependence (three items) and problems associated with alcohol use (four items). Heavy episodic drinking is defined as the consumption of six standard drinks (10 g alcohol) or more on a single occasion (Babor et al., 2001). In South Africa, a standard drink is 12 g alcohol. Because AUDIT is reported to be less sensitive at identifying risk drinking in women (Freeborn et al., 2000), the cut-off points of binge drinking for women (four units) were reduced by one unit when compared with men (five units), as recommended by Freeborn et al. (2000). For the purposes of this survey, the assessment time frame for the use of alcohol beverages was 6 months. Responses to items on the AUDIT are rated on a 4-point Likert scale from 0 to 4, for a maximum score of 40 points. Higher AUDIT scores indicate more severe levels of risk; scores 8 or more indicate a tendency to problematic drinking. The AUDIT score results are categorized and presented in four levels according to their clinical significance: Zone I (scores 0–7) refers to low-risk drinking or abstinence. The second level, Zone II (scores 8–15), consists of alcohol use in excess of...
low-risk guidelines. A brief intervention using simple advice and patient education materials is the most appropriate course of action for these patients. In the third level, Zone III (scores 16–19), harmful and hazardous drinking can be managed by a combination of simple advice, brief counseling and continued monitoring, with further diagnostic evaluation indicated if the patient fails to respond or is suspected of possible alcohol dependence. Patients with the fourth risk level (Zone IV: scores 20–40) should be referred to a specialist for diagnostic evaluation and possible treatment for alcohol dependence (Babor et al., 2001). It should be borne in mind that the AUDIT is a screening test for alcohol abuse and dependence, hence, higher scores simply indicate that it is more likely that the subject is alcohol abusing or dependent rather than that he or she has been diagnosed as having a serious problem of abuse or dependence. The AUDIT was developed by the World Health Organization as an effective screening instrument for alcohol use problems among patients seeking primary care for other medical problems in international settings including African countries (Kenya and Zimbabwe) (Saunders et al., 1993; Babor et al., 2001). Cronbach alpha for the AUDIT in this present study was 0.88, indicating excellent reliability.

Tobacco use
Two questions were asked about the use of tobacco products. (a) Do you currently use one or more of the following tobacco products (cigarettes, snuff, chewing tobacco, cigars, etc.)? Response options were ‘yes’ or ‘no’. (b) In the past month, how often have you used one or more of the following tobacco products (cigarettes, snuff, chewing tobacco, cigars, etc.)? Response options were once or twice, weekly, almost daily and daily.

The social functioning (SF)-12 is a measure of general health functioning. The 12 items reflect eight sub-domains: self-perceived general health (1 item); bodily pain (1 item); physical functioning (2 items, Cronbach α: 0.81); physical role (2 items, α: 0.95); vitality (1 item); SF (1 item); mental health (2 items, α: 0.82) and emotional role (2 items, α: 0.95). For each respondent, the SF-12 scoring algorithm generates a Physical health Component Summary (PCS-12) score and a Mental health Component Summary (MCS-12) score. These scores are created by weighting and then summing the SF-12 item responses using two separate sets of weights (a physical weight and a mental weight) and then by normalizing the weighted sums to be comparable with a population mean score of 50 with a standard deviation of 10 (Ware et al., 1995). The lower the physical health score (PCS-12) or mental health score (MCS-12), the more activity limitations a person has.

The Kessler Psychological Distress scale (K-10): was used to measure global psychological distress, including significant pathology which does not meet formal criteria for a psychiatric illness (Kessler et al., 2002). This scale measures the following symptoms over the preceding 30 days by asking: In the past 30 days, how often did you feel: nervous; so nervous that nothing could calm you down; hopeless; restless or fidgety; so restless that you could not sit still; depressed; that everything was an effort; so sad that nothing could cheer you up; worthless; tired out for no good reason? The frequency with which each of these items was experienced was recorded using a 5-point Likert scale ranging from 1 = none of the time to 5 = all the time. This score was then summed with increasing scores reflecting an increasing degree of psychological distress. We examined the K-10 scale as binary variable comparing scores of 0–29 versus 30 or more (Andrews and Slade, 2001). The internal reliability coefficient for the K-10 in this study was α = 0.89.

Patients were also asked about a list of 14 chronic conditions they had been diagnosed with such as hypertension, diabetes and arthritis.

Data analysis
Data were analysed using Statistical Package for the Social Sciences (SPSS) for Windows software application program version 18.0. Frequencies, means and standard deviations were calculated to describe the sample. Data were checked for normality distribution and outliers. For non-normal distribution non-parametric tests were used. Associations of HRQoL were identified using linear regression analyses. P < 0.05 was regarded as statistically significant.

RESULTS
From the 1713 approached hospital out-patients 1532 agreed to participate, 89.4% response rate. The final sample comprised 56.4% men and 43.6% women; the mean age was 36.1 years (SD = 11.6), range 18–77 years. Almost all (99.4%) belonged to the Black African population group, while 0.6% were coloured or white. The majority (60%) were general and 40% chronic hospital outpatients. 24.2% used tobacco products daily or almost daily and 17.1% scored 30 or more on the psychological distress scale, indicating severe psychological distress. Migraine headache, followed by lower back pain, hypertension, stomach ulcer and arthritis were the five major chronic conditions in this hospital outpatient population. The average number of chronic conditions affecting clinic patients was 1.5; this average was similar for the four different alcohol use levels (abstainers, low-risk, high-risk and probable dependent drinkers; see Table 1).

Alcohol use, chronic conditions and SF-12 component summaries
Table 2 gives PCS and MCS for the four alcohol use groups: abstinence low-risk, high-risk and probable dependent alcohol use. PCS and MCS were not statistically significantly different across alcohol use groups, while the more chronic conditions reported the lower the PCS and MCS became (see Table 1).

Alcohol use and SF-12 sub-scales
Independent Kruskal–Wallis tests found significant effects of drinking status on physical functioning (P < 0.001), general health (P = 0.036), mental health and physical role functioning (P = 0.015), with low- and high-risk drinkers scoring significantly better than abstainers but probable dependent drinkers scoring significantly worse than low- and high-risk drinkers on physical functioning and general health, abstainers and low- and high-risk drinkers significantly better than dependent drinkers on mental health, and drinkers...
significantly better than abstainers on physical role functioning (see Fig. 1).

**Associations between alcohol use and HRQoL**

In univariate analysis, hazardous or harmful drinking (with no tobacco use) and binge drinking were significantly positively associated with PCS and MCS. Daily or almost daily tobacco use was significantly inversely associated with PCS and not associated with MCS. Severe psychological distress was strongly associated with poor physical and mental health. Greater number of chronic conditions was also increasingly highly associated with poor physical and mental health. In multivariate analysis high-risk drinking was found to be associated with PCS, while probable alcohol dependence was associated with poorer but not significantly poorer physical and mental health (see Table 3).

**DISCUSSION**

The study did not find a significant association between alcohol use and HRQoL (physical and mental health) of hospital outpatients in South Africa as measured by the SF-12 Health Survey. However, probable alcohol dependence was associated with poorer quality of life in three areas of functioning measured by the SF-12 (physical functioning, general health and mental health) compared with patients not meeting the criteria of alcohol dependence. The finding that alcohol dependence was associated with poorer physical functioning, general health and mental health is in concordance with other studies (Volk et al., 1997). Alcohol abuse or
Chronic conditions

Severe psychological distress

− Hazardous or harmful drinking
− (almost) daily tobacco use

Binge drinking (monthly or more) 1.84 (0.53

Hazardous or harmful drinking

Abstainer 1.00 1.00
Low-risk 1.54 (−0.26 to 3.35) 0.39 (−1.26 to 2.05)
High-risk 1.36 (−0.003 to 2.73) 0.50 (−0.75 to 1.76)
Probable dependent −1.25 (−4.51 to 2.01) −0.99 (−3.98 to 1.99)
Hazardous or harmful drinking (no tobacco use) 1.64 (0.12−3.16)* 1.46 (0.17−2.95)*
Hazardous or harmful drinking (AUDIT score 8 or more)− no tobacco use and no chronic condition 2.21 (−0.44 to 4.86) 1.49 (−0.93 to 3.92)

Probable dependent

Hazardous or harmful drinking

− (almost) daily tobacco use
− severe psychological distress
− number of other chronic conditions

Adjusted for age, gender, education, main household income, (almost) daily tobacco use, current anxiety or depression (severe psychological distress) and chronic condition.

0 Ref 1.00 1.00
1 −3.69 (−5.18 to −2.20)** 1.00 (−0.73 to 2.74)**
2 −5.24 (−6.90 to −3.58)** 1.00 (−3.21 to −0.34)**
3 or more −11.35 (−13.01 to −9.70)** 1.00 (−3.53 to −1.84)**

Adjusted* coefficient estimates, β (95% CI)

Abstainer 1.00 1.00
Low-risk 1.19 (−0.54 to 2.92) 0.30 (−1.92 to 1.33)
High-risk 1.80 (0.39−3.21)* 0.23 (−1.10 to 1.56)
Probable dependent −0.39 (−3.61 to 2.83) −0.56 (−3.59 to 2.47)

R² 0.13 0.09

*Adjusted for age, gender, education, main household income, (almost) daily tobacco use, current anxiety or depression (severe psychological distress) and chronic condition.

**P < 0.05.

***P < 0.001.

Table 3. Estimated relationships between alcohol use and HRQoL; estimated regression coefficients were based on linear regression models

<table>
<thead>
<tr>
<th>Condition</th>
<th>PCS</th>
<th>MCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstainer</td>
<td>Unadjusted coefficient estimates, β (95% CI)</td>
<td>Unadjusted coefficient estimates, β (95% CI)</td>
</tr>
<tr>
<td>Low-risk</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>High-risk</td>
<td>1.54 (−0.26 to 3.35)</td>
<td>0.39 (−1.26 to 2.05)</td>
</tr>
<tr>
<td>Probable dependent</td>
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<td>Hazardous or harmful drinking</td>
<td>1.64 (0.12−3.16)*</td>
<td>1.46 (0.17−2.95)*</td>
</tr>
</tbody>
</table>

The magnitude of the decrement in the PCS and MCS for daily or almost daily tobacco use, severe psychological distress and the number of other chronic conditions was significantly greater than for alcohol abuse or dependence. This seems in line with another study where the largest negative impact on HRQoL was from among others depressive disorders and chronic conditions such as asthma and back problems rather than from alcohol disorders (Saarni et al., 2006). It is possible that these other phenomena (tobacco use, severe psychological distress and number of other chronic conditions) are simply better measured rather than the underlying phenomena being inherently more related to the PCS and MCS scores. Our findings related to the health burden of alcohol-use disorders seem to be in contrast with most studies of poorer HRQoL in relation to alcohol use (Welsh et al., 1993; Foster et al., 1999; Okoro et al., 2004; Chen and Storr, 2006). It is concluded that alcohol-use disorders have no or only minimal effect on HRQoL in this study. Similar results were found by Spitzer et al. (1995) in the PRIME-MD 1000 study. The latter and this study can be criticized on the lack of diagnostic specificity of the assessment regarding alcohol-use disorders (Volk et al., 1997). The global SF-12 HRQoL measure seems not to be sensitive to the presence of alcohol dependence and alcohol abuse in the South African study setting. It appears that hospital outpatients in this study may not have experienced a diminished quality of life related to their alcohol use and intervention studies with hazardous drinkers may not identify treatment-related changes in global HRQoL (Volk et al., 1997).

This study has several limitations. First, since the study was cross-sectional, cause and effect could not be established. A further limitation was that all variables were assessed by self-report and desirable responses may have been given. Other examples of limitations include: no drug screening, no standardized psychiatric measures (such as the Structured Interview for DSM-IV Axis I disorders) and the duration of drinking problems and variation in the quantity of alcohol consumed over a patient’s life course were not included. Former drinkers were found to score the worst on HRQoL in a population-based survey in Finland (Saarni et al., 2008).

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