Decreased Alcohol Consumption in Outpatient Drinkers Is Associated with Improved Quality of Life and Fewer Alcohol-related Consequences

Kevin L. Kraemer, MD, MSc, Stephen A. Maisto, PhD, Joseph Conigliaro, MD, MPH, Melissa McNeil, MD, MPH, Adam J. Gordon, MD, MPH, Mary E. Kelley, MS

This study’s objective was to determine whether changes in alcohol consumption are associated with changes in quality of life and alcohol-related consequences in an outpatient sample of drinkers. Two hundred thirteen subjects completed the Short Form 36-item (SF-36) Health Survey and the Short Inventory of Problems at baseline, 6 months, and 12 months. Subjects who sustained a 30% or greater decrease in drinks per month reported improvement in SF-36 Physical Component Summary (P = .058) and Mental Component Summary (P = .037) scores and had fewer alcohol-related consequences (P < .001) when compared to those with a <30% decrease. These findings suggest another benefit of alcohol screening and intervention in the primary care setting.

KEY WORDS: alcohol drinking; alcohol dependence; alcohol abuse; quality of life; health status

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Understanding how changes in alcohol consumption affect quality of life is important because primary care providers are now asked to screen and intervene for a broad spectrum of alcohol use behaviors in their practices.1,2 Although brief counseling interventions can reduce alcohol consumption and health care services utilization,3–5 it is not known if such interventions result in fewer adverse consequences and improved quality of life.6–8 Certainly, the potential for improved quality of life and fewer consequences may motivate patients to change their behavior and encourage busy primary care providers to improve alcohol screening and intervention practices.

This report describes a preliminary study to determine whether changes in alcohol consumption are associated with changes in health-related quality of life and alcohol-related consequences in outpatient drinkers. The post hoc analysis is based on a cohort of primary care subjects from the Early Lifestyle Modification (ELM) Study, a randomized, controlled, clinical trial of 2 types of brief intervention for alcohol use.

METHODS

The methods for the ELM study have been described in detail9 and are briefly summarized here. In the ELM study, subjects identified as at-risk and/or problem drinkers were randomized to 1 of 3 treatment conditions: 1) motivational enhancement; 2) brief advice; and 3) standard care. Enrolled subjects were followed for 12 months.

Study Sites and Subject Selection

Subjects were recruited between October 1995 and December 1997 from 12 primary care clinics in Pittsburgh, Pennsylvania. The study protocol was approved by the Institutional Review Boards of the University of Pittsburgh, the Department of Veterans Affairs, and of all participant sites. Potential subjects were screened in the clinic waiting areas with a survey that included the Alcohol Use Disorder Identification Test (AUDIT)10 and quantity-frequency (QF) of alcohol use. Subjects who met age and a minimal drinking threshold were invited for a baseline assessment. Subjects 21 years and older were eligible if they were current (past year) drinkers and were men who drank 16 or more standard drinks per week or women who drank 12 or more standard drinks per week or had a score of 8 or greater on the AUDIT.11 Consentig subjects who met entry criteria were enrolled and randomized to 1 of the 3 treatment arms.

Data Collection

Research assistants blinded to treatment assignment conducted face-to-face interviews with study subjects at baseline, 6 months, and 12 months. Telephone assessments were done at 1, 3, and 9 months. Sociodemographic data, the Alcohol Dependence Scale, and the Psychiatric Subscale of the Addiction Severity Index were completed at baseline. The alcohol component of the Diagnostic Interview Schedule – Revised was used to determine lifetime and past-year Diagnostic and Statistical Manual of Mental Disorders – 4th Edition diagnoses of alcohol abuse or alcohol dependence.12 The 19-item version of the Stage of
Change Readiness and Treatment Eagerness Survey\textsuperscript{12} was administered at baseline. Alcohol intake was assessed at baseline and at each follow-up by the Timeline Followback (TLFB) method.\textsuperscript{14} The number of standard drinks (0.6 oz. ethanol) per month, standard drinks per drinking day, and abstinent days per months were calculated using a TLFB time frame of 30 days.

Health-related quality of life was evaluated by administering the Short Form 36-item (SF-36)\textsuperscript{15} at baseline, 6 months, and 12 months. Two SF-36 summary measures, the Physical and Mental Health Component Summary (PCS and MCS)\textsuperscript{16,17} scores, were calculated. Alcohol-specific adverse consequences in 5 domains (interpersonal, intrapersonal, social, physical, and impulsive behavior) were evaluated by administering the Short Inventory of Problems (SIP)\textsuperscript{18} questionnaire at baseline, 6 months and 12 months. Higher SIP scores indicate increased levels of alcohol-related consequences.

**Methods of Analysis**

A dichotomous independent variable was created to indicate whether or not a subject sustained a 30% or greater decrease in drinks per month from baseline through the 6- and 12-month follow-ups. The cutoff of 30% was chosen to reflect the expected average decrease in alcohol consumption from a brief intervention.\textsuperscript{4,5} Differences in baseline variables between subjects who did and did not sustain a 30% decrease in consumption were tested using Student’s t test for normally distributed continuous variables, the Wilcoxon test for non-normally distributed continuous variables, and \( \chi^2 \) or Fisher’ Exact tests for categorical variables.

The primary outcome measures were the SF-36 PCS score, the SF-36 MCS score, and the total SIP score at baseline, 6 months, and 12 months. SIP scores were log transformed for the analysis because of a skewed distribution. Repeated measures analysis of variance (ANOVA) over the 3 time points (baseline, 6 months, 12 months) was used to test for differences in the 3 dependent variables between the alcohol consumption change groups. Additional repeated measures ANOVA analyses were performed with alternative alcohol consumption decrease cutoffs of “20% or greater” and “40% or greater” to determine if PCS, MCS, and SIP score changes were sensitive to the choice of cutoff level.

To determine whether the main analysis should be adjusted for covariates, independent variables that differed significantly between alcohol consumption change groups at baseline were tested for their association with changes in quality of life and adverse consequences. Treatment group assignment (motivational enhancement, brief advice, standard care) was not used as a covariate in this analysis because the main clinical trial revealed improvement for all treatment groups, with no significant difference in drinking outcomes. SF-36 scores, or SIP scores between groups.\textsuperscript{9}

**MAIN RESULTS**

**Patient Eligibility**

A total of 13,273 individuals were screened for study eligibility. Of these, 1,388 subjects (10.5% of total; 19.7% of current drinkers) screened positive by QF and/or AUDIT criteria. Three hundred forty-three (24.6% of positive screens) subjects consented to baseline assessment and 301 (21.7% of positive screens) subjects were randomized in the main intervention study.\textsuperscript{9} No significant differences in demographics, AUDIT scores, and QF were found between subjects with positive screens who did and did not assent to baseline assessment. Two hundred thirteen subjects completed the SF-36 and the SIP at each time point (baseline, 6 months, 12 months) and were included in this analysis. No significant differences in race, age, gender, and alcohol diagnosis were found between the 301 subjects in the main clinical trial and the 213 subjects used for this analysis.

**Alcohol Consumption Change Groups**

Seventy-seven (36%) subjects sustained a 30% or more decrease in alcohol intake from baseline through the 6- and 12-month follow-ups. Subjects able to sustain this change were significantly older, less likely to be employed, and more likely to have a diagnosis of alcohol dependence or abuse (Table 1). Subjects who sustained a 30% or greater decrease averaged 85.5 drinks per month at baseline (SD 77.3), 29.7 drinks per month (SD 40.2) at 6 months, and 22.5 drinks per month (SD 29.0) at the 12-month follow-up. On the other hand, subjects who had a less than 30% decrease in alcohol intake were steady at 66.0 (SD 61.2), 65.5 (SD 59.3), and 65.3 (SD 59.1) drinks per month at baseline, 6 months, and 12 months, respectively.

**Changes in Quality of Life and Alcohol-related Consequences**

Differences in health-related quality of life and alcohol-related consequences were observed during follow-up between subjects who did and did not sustain a 30% or greater decrease in drinks per month (Fig. 1). PCS and MCS rose from baseline to 12 months in subjects who sustained a decrease (Group \( \times \) time interaction: \( F = 2.86, P = .058 \) for PCS; \( F = 3.33, P = .037 \) for MCS) (Figs. 1a and 1b). SIP scores decreased steadily from baseline to 12 months in subjects who sustained a 30% decrease in consumption but changed little in subjects with less than a 30% decrease (Group \( \times \) time interaction: \( F = 11.67, P < .001 \)) (Fig. 1c). The trends of these curves were unchanged when the analyses were repeated with the 67 alcohol-dependent and/or abuse subjects excluded. With these subjects removed, the group \( \times \) time interaction effect on PCS became nonsignificant (\( P = .73 \)) but remained significant for the MCS and SIP outcomes (\( P = .002 \) for both).

The SF-36 and SIP analyses were repeated using alternative cutoffs of “20% or greater” and “40% or greater”