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Does readiness to change predict subsequent alcohol consumption in medical inpatients with unhealthy alcohol use?

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ABSTRACT

We studied whether readiness to change predicts alcohol consumption (drinks per day) 3 months later in 267 medical inpatients with unhealthy alcohol use. We used 3 readiness to change measures: a 1 to 10 visual analog scale (VAS) and two factors of the Stages of Change Readiness and Treatment Eagerness Scale: Perception of Problems (PP) and Taking Action (TA). Subjects with the highest level of VAS-measured readiness consumed significantly fewer drinks 3 months later [Incidence rate ratio (IRR) and 95% confidence interval (CI): 0.57 (0.36, 0.91) highest vs. lowest tertile]. Greater PP was associated with more drinking [IRR (95%CI): 1.94 (1.02, 3.68) third vs. lowest quartile]. Greater TA scores were associated with less drinking [IRR (95%CI): 0.42 (0.23, 0.78) highest vs. lowest quartile]. Perception of Problems' association with more drinking may reflect severity rather than an aspect of readiness associated with ability to change; high levels of Taking Action appear to predict less drinking. Although assessing readiness to change may have clinical utility, assessing the patient's planned actions may have more predictive value for future improvement in alcohol consumption.

1. Introduction

Consequences resulting from excessive alcohol consumption are responsible for considerable disease burden (Rehm et al., 2003). Consequently, interventions aimed at reducing excessive alcohol consumption are viewed as beneficial from a public health point of view. In 2004, the US Services Preventive Task Force recommended the use of brief counseling intervention in primary care, where its efficacy has been confirmed; this practice is among the most effective and cost-effective of preventive care services (Bertholet, Daeppen, Wietlisbach, Fleming, & Burnand, 2005; Solberg, Maciosek, & Edwards, 2008). Assessment of patients' readiness-to change provides a self-report index of patient motivation to alter their drinking patterns that may be used to tailor advice and counseling to patients and determine treatment dispositions. Indeed, health care providers have been encouraged to see increases in readiness-to-change as a desirable intermediate goal on the path to behavior change (Samet, Rollnick, & Barnes, 1996).

The focus on readiness is based in large part on the assumption that there is a clear association between readiness-to-change and outcome (e.g., decreases in drinking). However, there is conflicting evidence regarding the relationship between readiness to change and outcome (Forsberg, Ekman, Halldin, & Ronnberg, 2004; Isenhart, 1997; Reed et al., 2005; Rollnick, 1998). These equivocal findings may have a number of explanations. First, a family of concepts is included under the term "readiness." These concepts may include importance of change, problem recognition, confidence, and actions reflecting a commitment to change. These concepts, especially importance of change (sometimes related to or understood as problem or consequence recognition) or confidence in ability to change (also known as self-efficacy), could operate differently. In particular, confidence seems to predict better outcomes (Maisto, Conigliaro et al., 1999). Initiation of behavior change appears to be associated with the expectancy to cope successfully (Demmel, Beck, Richter, & Reker, 2004). However, other indices of motivation to change, such as Problem recognition, do not appear to be associated with better outcomes. Miller and Tonigan developed a questionnaire (the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES)) aimed at capturing stages of change as described by Prochaska and DiClemente. After examining the psychometric properties of the questionnaire, it appeared that items about negation of the problem (precontemplation) and recognition of the problem (determination) formed a single factor.

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This factor was named "Recognition" (Miller & Tonigan, 1996). Problem recognition is linked to one's capacity to attribute the cause of a health or social problem to alcohol and to the existence of such a problem. As such, problem recognition is considered to be an important component of readiness-to-change drinking (Nye, Agostinelli, & Smith, 1999). However, in addition to suggesting greater awareness of problematic alcohol use patterns, problem recognition may also indicate higher levels of alcohol consequences and thus serve as a marker of alcohol use disorder severity (Maisto, Conigliaro et al., 1999; Williams, Horton, Samet, & Saitz, 2007).

The differing associations between readiness measures and outcomes may also be explained by patient populations and by the assessment instrument. For example, the development of the SOCRATES questionnaire was designed to assess readiness among a treatment seeking population. The structure and validity of these measures may be quite different among non-treatment seeking problem drinking samples (Maisto, Conigliaro et al., 1999).The role of readiness to change is of particular interest in patients with unhealthy alcohol use (i.e., the spectrum from risky consumption to alcohol dependence) identified by screening in general health settings, such as hospitals. In this circumstance, patients are not necessarily help-seeking, unlike patients in specialty treatment. Such a population is less homogeneous than a treatment seeking population, which may be responsible for differences in the potential associations between readiness to change and drinking.

Therefore we studied whether readiness to change predicts subsequent alcohol consumption in medical inpatients with unhealthy alcohol use. We studied this association using three different measures of readiness to change based on two instruments—a visual analog scale (VAS) for the simple question "how ready are you to change your drinking habits?" and two factors from the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES), level of perception of the drinking problem and taking action towards change/commitment to making a change. The use of two different instruments covering a more global readiness concept and more specific constructs, is of interest since we expect to capture various aspects of readiness. There is currently no gold standard in readiness to change measurement and so the use of two different instruments will also give additional information on their respective predictive values. We hypothesized that a high level of taking action towards change/commitment to change would be associated with less drinking, and that greater problem perception, reflecting severity, would be associated with more drinking, based on what has been observed in a primary care population (Williams et al., 2007).

2. Methods

We studied a prospective cohort of medical inpatients at an urban academic hospital who were drinking risky amounts (>14 drinks/wk or ≥5 drinks/occasion for men, >11 drinks/wk or ≥4 drinks per occasion for women and persons aged 66 and over). The general medical inpatient service we studied was internal medicine and it did not include intensive care unit beds. Subjects were participants in a randomized trial of brief intervention to reduce alcohol use (Saitz et al., 2007) and were recruited from the inpatient medical service of an urban teaching hospital. Research associates approached all patients aged 18 or older whose physicians did not decline patient contact. Individuals fluent in English or Spanish who gave consent were asked to complete a screening interview. Eligibility criteria included the following: currently drinking risky amounts, 2 contacts to assist with follow-up, no plans to move from the area for the next year, and a Mini-Mental State Examination score of ≥21 (Smith, Horton, Saitz, & Samet, 2006). Eligible subjects were randomized to receive usual care or a brief intervention to reduce alcohol use. The study population was used as a cohort in the present analyses. Assessments took place before group allocation.

2.1. Assessments

Demographics were assessed at study entry, as well as medical diagnoses by medical record review to identify those that were alcohol related (see Table 1), and alcohol use disorder diagnosis based on the Diagnostic and Statistical Manual on Mental Disorders, 4th edition and determined by the Composite International Diagnostic Interview (CIDI) Alcohol Module (Robins et al., 1988; WHO, 1996). More details on assessment and enrollment were previously published (Saitz et al., 2007).

At study entry in the hospital and 3 months later, alcohol consumption was assessed using a validated calendar method (Timeline Followback) (Sobell & Sobell, 1995). Readiness to change was assessed with a 1–10 visual analog scale (VAS) and with the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES). The VAS measure was a response to: "How ready are you to change your drinking habits?" The VAS has not been extensively validated but is attractive for clinical use in busy settings because of its brevity (LaBrie, Quinlan, Schiffman, & Earleywine, 2005; Williams et al., 2007). The SOCRATES is a 19 item questionnaire developed to assess readiness to change alcohol use (Miller & Tonigan, 1996). Based on a factor analysis in this sample (Bertholet, Dukes, Hortton, Palfai, Pedley, & Saitz, 2009), we used a 2 factor structure for analyses on 16 items: 1—"Perception of Problems" (PP), and 2—"Taking Action" (TA). These two factors had good internal consistency (Cronbach's alpha 0.94 and 0.88, respectively). PP represents problem awareness and recognition of the need for additional help to address the drinking problem and TA denotes the concrete steps a person is taking or has already taken towards a decrease in drinking and commitment to change.

Table 1
Baseline characteristics of the 267 medical inpatients with unhealthy alcohol use ($n = 267$).

Demographics	
Women, no. (%)	81 (30.3)
Age, mean (SD)	45.0 (10.5)
Race/Ethnicity:	
Black, no. (%)	129 (48.3)
White, no. (%)	96 (36.0)
Hispanic, no. (%)	23 (8.6)
Other, no. (%)	19 (7.1)
Alcohol related diagnosis at hospital admission, no. (%)‡	129 (48.3)
Alcohol diagnosis (past year)†	
No diagnosis, no. (%) (risky drinking)	46 (17.2)
Alcohol abuse, no. (%)	13 (4.9)
Alcohol dependence, no. (%)	208 (77.9)
Alcohol consumption (past 30 days)	
Drinks per day, mean (SD), median	6.9 (9.0) 4.0
# of days with binge drinking, no. (%), median	12.8 (10.7) 9
Drug use (last 30 days)	
Heroin or cocaine use, no. (%)	68 (25.5)
Marijuana use, no. (%)	81 (30.6)
Readiness to change measures	
Visual analog scale*, mean (SD), median (IQR)	6.9 (3.5), 8(5, 10)
SOCRATES**:	
Perception of Problems, mean (SD), median (IQR)	35.6 (10.8), 39 (28, 44)
Taking Action, mean (SD), median (IQR)	21.2 (5.8), 22 (18, 26)

‡ Includes any of the following: acute alcoholic cirrhosis, alcoholic cardiomyopathy, alcoholic gastritis, alcoholic hepatitis, alcohol intoxication, alcoholic liver damage, alcoholic fatty liver, alcoholic pellagra, alcoholic polyneuropathy, alcohol withdrawal, alcohol withdrawal convulsion, alcohol withdrawal delirium, alcohol withdrawal hallucinosis, other alcoholic psychosis, alcoholic amnesic syndrome, other alcoholic dementia, alcoholic pancreatitis, or other diagnoses thought to be alcohol-attributable by the investigator (for example "holiday heart", alcoholic ketoacidosis, alcohol related rhabdomyolysis).
† Determined with the Composite International Diagnostic Interview (CIDI) Alcohol Module.
* How ready are you to change your drinking habits?" 1 to10.
** Perception of Problems, possible score: 10–50; Taking Action (commitment to change), possible score 6–30.
IQR: interquartile range (25th, 75th percentile).