Readiness to Change and to Accept Help and Drinking Outcomes in Young Adults of Mexican Origin

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ABSTRACT. Objective: The purpose of this study was to assess whether readiness to change drinking (RCD) and readiness to accept help (RAH) improve short- and longer term drinking outcomes. **Method:** Data from a randomized controlled trial of screening and brief intervention (SBI) conducted in a U.S. emergency department at the U.S.–Mexico border are reported. A total of 620 at-risk and dependent Mexican-origin drinkers (56% male), ages 18–30, received either an assessment only or intervention (SBI). Drinking outcomes included drinking days per week, average and maximum drinks per drinking day, heavy drinking (5+ drinks) days per week, and negative consequences. Random effects longitudinal models predicted baseline, 3-month, and 12-month drinking outcomes from baseline RCD and RAH. Models tested if (a) outcomes were significantly reduced at follow-ups and (b) differential reduction occurred by RCD, RAH, and post-intervention

changes in readiness among those receiving SBI. **Results:** For both study groups, outcomes improved from baseline to each follow-up across RCD and RAH status. RCD was not associated with differential improvement in outcomes for either group. In the SBI group, those RAH reported larger reductions at 3 months in average and maximum quantity than those not RAH but did not differ from those not RAH at 12-month outcomes. Among the SBI group, changing from not ready to ready (RTC or RAH) post-intervention was not associated with greater reductions in drinking compared with remaining not ready or ready post-intervention. **Conclusions:** Baseline RCD is not associated with drinking outcomes. Baseline RAH may facilitate greater reductions in drinking for those receiving SBI and should be further examined as a possible mediator of SBI effects for young adults of Mexican origin. (*J. Stud. Alcohol Drugs*, 76, 602–606, 2015)

READINESS TO CHANGE DRINKING (RCD) is expected to help reduce drinking following brief interventions. Evidence from research studies is mixed, with findings ranging from higher readiness leading to reduced drinking (Vaca et al., 2011), low to moderate readiness resulting in lower consumption at follow-up (Barnett et al., 2010), higher readiness increasing alcohol-related consequences (Collins et al., 2010), to no association between RCD and drinking outcomes (Korcha et al., 2012). Thus, we may conclude that the relationship between RCD and brief intervention is poorly understood.

These mixed findings suggest that RCD may not suffice to reduce alcohol consumption. The health beliefs model (Rosenstock, 1990) underscores the role of help-seeking in improved health. Readiness to seek help is documented to be independent of RCD and predicts formal help-seeking

for alcohol problems (Freyer-Adam et al., 2009). A drinker's readiness to accept help (RAH) could affect the impact of the brief intervention but has not yet been examined in studies.

Hispanics of Mexican origin constitute the largest minority group in the United States (United States Census Bureau, 2012). The importance placed on maintaining harmony in relationships and on respect and obedience for authority figures, especially among those less acculturated (Marín & Marín, 1997), suggests that this group may be more likely to report RCD and RAH and that readiness may potentiate the efficacy of brief intervention in this population.

There is very little research on RCD, and none on RAH, in Hispanics of Mexican origin. Skewes et al. (2011) found that RCD was associated with reduced drinking only for the heaviest drinkers in a Hispanic college student sample. Because of limited healthcare access, Hispanics in the United States use the emergency department (ED) more than any other ethnic group (de Cosío & Boadella, 1999). ED visits provide a crucial opportunity to address preventable injury and other consequences of unhealthy alcohol use. Alcohol problems disproportionately affect Mexican-origin adults (Caetano & Tam, 1995). Thus, understanding the impact of RCD and RAH on drinking outcomes among

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young adults of Mexican origin not only can help improve the cultural translation of screening, brief intervention, and referral to treatment (SBIRT) but also can enhance delivery of brief interventions in the ED and reduce disparities in care.

Young Mexican-origin adults living on the U.S.–Mexico border have higher rates of heavy drinking and alcohol problems than those in other parts of the United States (Vaeth et al., 2012). The present study examined associations between RCD and RAH among young American adults of Mexican origin living on the U.S.–Mexico border. Study hypotheses were that significant portions of drinkers would report RCD and RAH and that among those receiving brief intervention, RCD and RAH versus not ready would be associated with better outcomes.

Method

Sample

Data are reported from a randomized controlled trial of screening and brief intervention (SBI) at an ED at the Texas Tech Health Science Center in El Paso. Patients ages 18–30 presenting to the ED were screened for participation. Eligible participants were those who self-identified as of Mexican origin, spoke either Spanish or English, lived in the local county, and reported either 15 or more drinks per week (men, 8 or more for women) or 5+/4+ drinks in a day for men/women, or screened positive on the Rapid Alcohol Problems Screen (Cherpitel, 2000) for possible alcohol dependence. Participants were randomized into one of three study conditions: screened only with 3-month contact (to update contact information) and 12-month assessment (S), assessed with 3-month and 12-month follow-up assessments (A), or assessed and received the intervention with 3-month and 12-month follow-up assessments (I). Those admitted for inpatient treatment, in police custody, currently in alcohol treatment, having a psychiatric condition, or planning to leave the El Paso metropolitan area in the next year were excluded.

Recruitment occurred from November 2010 to April 2012. A total of 3,176 individuals were screened (88% of study eligible approached); 26% ($n = 824$) screened positive, and of these, 85% ($n = 698$) were recruited into the study, with 78 randomized to the screened condition and 310 each to the assessment and intervention conditions. Data are reported only for the latter two groups, because screened-only participants did not complete the 3-month assessment. Just over half of the sample was male (56%); 80% were born in the United States. Participants averaged 24 years in age ($SD = 3.5$). Follow-up rates were 76% ($n = 237$) and 72% ($n = 223$) at 3 months, 78% ($n = 243$) and 75% ($n = 231$) at 12 months, for the assessment and the intervention conditions, respectively.

Measures

Participants completed standardized instruments administered during follow-up assessments conducted via telephone by an interviewer blinded to study group status. At baseline, participants receiving the intervention completed the assessment before receiving the intervention. All instruments were translated into Spanish, verified by either back-translation (Breslin, 1986) or expert attestation, and have been used with Mexican-origin patients in the 14-site Academic Emergency Medicine Collaborative (AEMC) SBIRT study (Emergency Medicine Research Collaborative, 2004). Of the 620 assessments, 462 were conducted in English, 64 in Spanish, and 94 partially in English and partially in Spanish.

The Timeline Followback (Sobell & Sobell, 1992) assessed the number of drinks consumed on each of the last 28 days. This was the source for obtaining number of drinking and heavy drinking days, and the average and maximum number of drinks per drinking day.

The Short Inventory of Problems (Miller et al., 1995) assessed negative consequences related to drinking over the last 12 months (and over the last 3 months). This 21-item inventory is a brief version of Project MATCH's 45-item Drinking Inventory of Consequences. It includes alcohol-related physical, social responsibility, intrapersonal, impulse control, and interpersonal consequences and six additional items from the original instrument on injury and drinking and driving.

RCD was assessed using the readiness ruler, a linearization of the stages of change model (Prochaska & DiClemente, 1992), developed and validated for use in general medical settings (Rollnick et al., 1992). After completing the baseline assessment, participants rated their readiness to make any changes in their current drinking behavior on a scale of 1 to 10 using a simple ruler image. Scores of 8–10 on this scale indicate “ready,” loosely corresponding to the post-contemplation “preparation” stage of change (Prochaska & DiClemente, 1986), with scores of 1–7 indicating those not ready. Participants receiving the intervention completed the ruler both before and after completing the intervention.

RAH was also assessed following the baseline assessment, in an item that we adapted from the RCD item. Participants used a readiness ruler, like that used to measure RCD (i.e., a visual ruler with a scale of 1 to 10), to report how ready they were to accept help. Scores of 1–7 and 8–10 were coded as *not ready* and *ready* to accept help, respectively. Participants receiving the intervention provided both a pre- and post-intervention RAH score.

The intervention (SBI), a brief motivational intervention in English or Spanish, generally occurred while the patient was waiting for treatment and took about 20 minutes to complete. It was tailored for adolescents and young adults (Bernstein et al., 2010) and integrated elements of motiva-

TABLE 1. Predicting baseline (B) to 3-month (3M) changes in drinking outcomes from baseline readiness to change and to accept help^a

Drinking outcome	Readiness to change				Readiness to accept help			
	Assessment only		Intervention		Assessment only		Intervention	
	Not ready (3M – B)	Ready (3M – B)	Not ready (3M – B)	Ready (3M – B)	Not ready (3M – B)	Ready (3M – B)	Not ready (3M – B)	Ready (3M – B)
No. of heavy drinking days	-0.33 (0.10)	-0.49 (0.09)	-0.54 (0.09)	-0.58 (0.09)	-0.57 (0.08)	-0.69 (0.09)	-0.69 (0.08)	-0.86 (0.08)
Average quantity	-0.54 (0.10)	-0.57 (0.09)	-0.65 (0.10)	-0.81 (0.10)	-0.50 (0.09)	-0.64 (0.10)	-0.56 (0.10)*	-0.89 (0.10)*
Maximum quantity	-0.59 (0.11)	-0.70 (0.11)	-0.80 (0.11)	-0.94 (0.11)	-0.57 (0.10)	-0.75 (0.12)	-0.68 (0.11)*	-1.06 (0.11)*
No. of drinking days	-0.59 (0.08)	-0.66 (0.08)	-0.78 (0.08)	-0.77 (0.08)	-0.33 (0.09)	-0.53 (0.10)	-0.53 (0.09)	-0.61 (0.09)
No. of negative consequences	-0.46 (0.10)	-0.68 (0.10)	-0.76 (0.10)	-0.70 (0.10)	-0.49 (0.09)	-0.69 (0.11)	-0.71 (0.10)	-0.75 (0.10)

Notes: Findings for 12-month outcomes showed no significant differences and are not shown in table. No. = number. ^aAnalyses adjust for age, gender, U.S.-born nativity; all outcome variables were log transformed before analysis.

* $p < .05$; these indicate a significant difference in reduction in drinking between not ready and ready groups.

tional interviewing and readiness to change (Prochaska & DiClemente, 1992).

The intervention was delivered by *promotores* trained in the Brief Negotiation Interviewing protocol (Bernstein et al., 1997). Promotores are community-based Mexican-origin peer health promotion advocates reported to successfully provide low-cost, culturally appropriate prevention services (Ramos & Ferreira-Pinto, 2006). Promotores were trained by the project team using training materials from the AEMC SBIRT study (Bernstein et al., 2007). The 3-day training included practice interventions in the ED and two booster training sessions. To assure fidelity, interventions were initially observed with patient consent, later taped for feedback from experts. Last, adherence was assessed using a tested and validated scoring system (Pantalon et al., 2012).

Analysis

Group differences in descriptive data were tested using *t* tests and chi-square tests of independence. The effect of readiness status variables (RCD and RAH) on changes in log outcomes over time (because of large skewness and kurtosis of untransformed outcomes) was estimated using a random effects model.

The model analyzing baseline and 3-month follow-up data, for the *i*th respondent at interview *t* was defined as: $\ln(1 + y_{i,t}) = \alpha_i + \beta_1 \cdot G_i + \beta_2 \cdot R_i + \beta_3 \cdot G_i \cdot R_i + \theta_1 \cdot G_i \cdot t_j + \theta_2 \cdot R_i \cdot t_j + \theta_3 \cdot G_i \cdot R_i \cdot t_j + \varepsilon_{i,t}$ where α_i is a normal random variable with mean 0 and within-individual correlation over time of τ , $G_i = 0, 1$ is the group assignment indicator (0 = assessment, 1 = intervention), $R_i = 0, 1$ represents RCD or RAH status (0 = not ready, 1 = ready), and t_j is an indicator variable for the 3-month follow-up interview (with the baseline interview as the reference). Estimates of the reduction in outcomes between baseline and the 3-month and, in separate models, the 12-month follow-up interview for those ready versus not ready (assessed separately for the intervention and assessment conditions) were formed from simple linear contrasts of the estimated β and θ parameters in the above model. Cross-condition tests of differential reductions were con-

ducted along with condition-specific tests of reductions in outcomes.

Random effects models have a key advantage in analysis of data from randomized trials as they allow for data to be missing at random (Little & Rubin, 1987) (i.e., assume the probability of missingness depends only on observed data [here baseline drinking measures]), under which use of a maximum-likelihood-based estimation approach generates unbiased effect estimates (Schafer & Graham, 2002). With no missing data, the specific contrast of interest corresponds to post–pre differences (i.e., 3-month or 12-month minus baseline) in outcomes for those in the intervention condition (analogous estimates are formed separately for the assessment condition) between those ready and those not ready (i.e., a difference in differences). As all respondents drank at baseline, drinking status was precluded as an outcome to avoid model degeneracy.

For the intervention group only, associations of changes in pre-to-post readiness and drinking outcomes both for RCD and RAH were also tested. Similar models were used as specified above, where the condition assignment and readiness variables were entered together. Specific contrasts tested whether those in the intervention condition who went from not ready pre-intervention to ready post-intervention had differential reductions in drinking outcomes compared with those who remained either not ready or ready post-intervention.

Results

Descriptive findings and data on group comparisons are detailed in this section in text, followed by findings from the random effects models presented in Table 1 and text.

Baseline differences in readiness groups

Demographics and drinking measures compared between those ready versus not ready indicated the following: For both study conditions, those RCD were more likely to report more alcohol-related consequences than those not ready (not

shown in table). This difference by RAH was only found for the assessed condition. No other differences were found for baseline drinking measures for either study condition by RCD or RAH.

Readiness measures

Half ($n = 311$) of the study participants were ready to change their drinking (RCD). RCD did not differ by study condition (assessment only: 52.3%; intervention: 48.2%). Post-intervention readiness was similar at 58.3% ($n = 165$).

Nearly half of all participants were ready to accept help (RAH) before (46.4%, $n = 287$) and after the intervention (52.2%, $n = 145$). Correlations of RCD and RAH pre- and post-intervention were moderate (pre-intervention: 0.58, $n = 619$; post-intervention: 0.60, $n = 283$), supporting the separate examination of RCD and RAH.

Among those receiving SBI, pre- and post-intervention, RCD and RAH scores remained consistent (pre-post intervention difference, RCD: $M = 0.43$; $SD = 1.64$; RAH: $M = -0.08$, $SD = 2.54$). Post-intervention, 23.4% of participants ($n = 34$ of 118) changed from not ready to ready to change their drinking; 16.9% ($n = 23$ of 133) changed from not ready to RAH.

Readiness and drinking outcomes

Significant reductions in drinking were found from baseline to both 3- and 12-month outcomes, both overall as well as for those ready and not ready to change drinking and to accept help ($p < .001$ for all comparisons). Baseline RCD was not associated with differential reductions in drinking at either the 3-month (Table 1) or 12-month follow-up (results not shown) for either group.

Baseline RAH was associated with greater reductions at 3 months in average and maximum drinking quantity for the intervention versus assessment-only group (Table 1) but not with differential reductions at 12 months in any drinking outcome (results not shown). All findings for pre-to-post-intervention changes in readiness for the intervention group were also nonsignificant.

Discussion

This is the first study to examine RCH and RAH in an ED sample with a population in which sociocultural values play an important role in communication with medical professionals. Consistent with study hypotheses, higher rates of RCD (46%) were found compared with those for other groups (e.g., 22% in Korcha et al., 2012).

The high rates of readiness likely reflect cultural values of *simpatia* (kindness), *personalismo* (relationship), and *respeto* (respect) reported as key considerations in providing appropriate patient care for Latinos (Juckett, 2013).

Through *simpatia*, individuals show their ability to interact with dignity and respect to others (*respeto*) and work toward harmonious relationships (*personalismo*). Higher readiness may reflect acquiescence and a greater willingness to adhere to advice of medical staff (Field & Caetano, 2010). Understanding how readiness may influence drinking outcomes in young Hispanic adults is particularly important because they represent an increasing portion of those presenting for emergency care but have lower healthcare access than other ethnic groups. Data on readiness can be used to improve delivery and effectiveness of brief interventions in the ED and reduce disparities in alcohol treatment.

The data indicate no support for RCD differentially affecting reductions in drinking across study condition at either short- or longer term follow-ups. These results contribute to the mixed findings in the literature and suggest the need to examine how RCD works for those groups that have shown positive associations between RCD and reduced drinking.

Another unique contribution of the present study is the data on RAH, which were consistent with hypotheses that this specific type of readiness may influence the effectiveness of brief interventions in young adults of Mexican origin. Within the intervention group, larger reductions were found for those RAH versus not ready at the 3-month but not 12-month follow-up. This suggests that although RAH may potentiate benefits from brief interventions, its impact could be relatively short-lived. Recent data (Rice et al., 2014) support the finding that trajectories of readiness change over time among drinkers. Despite the complexity and diversity in these trajectories, these recent data also demonstrate that taking steps to change drinking increases days of abstinence and reduces drinking.

Study limitations should be noted. Because we assessed RAH using a measure we developed on our own, these provisional findings indicate the need for further study of RAH and its measurement. Few participants changed their RCD or RAH following SBI. This limited our power to examine the impact of SBI-related changes in readiness. We were also unable to assess post-SBI treatment, which could affect outcomes studied. Future studies with larger, ethnically diverse samples may clarify whether our RCD and RAH findings are unique to young adults of Mexican origin.

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