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Assessment of Alcohol Use Patterns Among Spanish-Speaking Patients

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Abstract

Objective—To assess drinking patterns of Spanish-speaking patients using a bilingual Computerized Alcohol Screening and brief Intervention (CASI) tablet computer equipped with the Alcohol Use Disorders Identification Test (AUDIT).

Methods—This retrospective study was conducted in a tertiary university hospital emergency department (ED) between 2006 and 2010. Data from 1,816 Spanish-speaking ED patients was analyzed using descriptive statistics, the chi-square test for independence, and the Kruskal-Wallis rank sum test for comparisons using quantitative variables.

Results—Overall, 15% of Spanish-speaking patients were at-risk drinkers, and 5% had an AUDIT score consistent with alcohol dependency (> 20). A higher percentage of Spanish-speaking males than females were at-risk drinkers or likely dependent. Spanish speaking males exhibited higher frequency of drinking days per week and higher number of drinks per day compared to females. Among older patients, non-drinking behavior increased and at-risk drinkers decreased. The majority of males and females were ready to change their behavior after the CASI intervention; 61% and 69% respectively scored 8-10.

Conclusions—This study indicated that CASI was an effective tool for detecting at-risk and likely dependent drinking behavior in Spanish-speaking ED patients. The majority of patients were ready to change their drinking behavior. More alcohol screening and brief intervention tools should be tested and become readily accessible for Spanish-speaking patients.

Introduction

Alcohol abuse is one of the leading causes of morbidity and mortality in the United States, contributing to over 100,000 deaths per year (US Department of Health and Human Services, 2002). There are over eight million alcohol-related visits to the emergency department (ED) per year in the US (McDonald et al, 2004). Thus, the ED offers a unique and vital opportunity to address the burden of alcohol-use disorders since ED patients are more likely to report alcohol use problems (Cunningham et al, 2009). EDs encounter a spectrum of alcohol-related injuries, which allows the opportunity for early intervention for

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those patients suffering from alcohol's short-term effects, as well as offering referral to treatment for patients with long-term alcohol use (Aseltine et al., 2007; Lotfipour et al., 2011a).

Alcohol use among Latino population

Latinos constitute the largest ethnic minority group in the US and also compose the largest group of foreign-born immigrants (US Census 2003). Few alcohol-screening tests have been evaluated for use and acceptability in Latinos or Spanish-speaking patients (Saitz, 1999). Rates of alcohol consumption have remained stable among whites but have increased among the Hispanic populations (Caetano and Clark., 1998; Zemore et al., 2009). The rapid growth of the Latino population in the US requires increased attention to prevention, screening, and treatment of dependent and at-risk alcohol consumption. Prevention and treatment of alcohol-use disorders are focused on the general populations but Spanish speakers are not a homogeneous group; acculturation, sex, social norms, and customs may influence the perception of harmful drinking (Saitz et al., 1999). This is an important research gap because consequences of alcoholism in the Spanish-speaking community have physical, social and economic manifestations.

CASI Administration

Since June 2006, we have been screening and providing brief intervention to English and Spanish-speaking patients for alcohol consumption patterns in the ED, using a computerized alcohol screening and brief intervention (CASI) program. Bilingual Computerized screening is an innovative approach to consistently screen large pools of at-risk and dependent patients in the ED, with minimal resources, thus allowing ED resources to be allocated more appropriately (Vaca et al., 2010; Vaca et al., 2011; Lotfipour et al., 2011b). In addition, computers have shown promise as a useful tool to limit alcohol's social desirability bias and help increase patient anonymity and self-disclosure (De Leeuw et al., 2003, Vaca 2010, Vaca 2011, Lotfipour et al., 2011). Since very few studies have been conducted regarding alcohol-use in the Latino community, we wanted to analyze our data for significant findings specific to this population.

The goal of this study is to assess drinking patterns, readiness-to-change score reported by patients taking CASI, and an AUDIT score using a bilingual computerized alcohol screening, brief intervention, and referral to treatment tablet in the ED Spanish-speaking population. We expected that CASI would detect differences in at-risk drinking, dependent drinking, and readiness-to-change score by age and gender.

Methods

Study Design

This is a retrospective observational descriptive study of a convenience sample of Spanish-speaking patients in the ED participating in CASI from 2006 to 2010 in one tertiary care university hospital ED with an average of 34,084 total visits and 5,348 Spanish-speaking patient visits per year.

Participants

Patients were recruited by emergency medicine research associates, undergraduate students trained in clinical research methods, which were present in the ED from 8am to midnight each day. All adult Spanish-speaking ED patients who are medically stable, not in custody or on a psychiatric hold, and not suspected to be intoxicated were eligible for CASI. The study was reviewed and approved by the University's Human Subjects Research Institutional Review Board.

CASI tablet

CASI consists of a bilingual (English and Spanish) audio-graphical interface software program uploaded into a portable tablet and administered at bedside. CASI provides questions and messages on a touch screen monitor with the capability for spoken words through speaker or Bluetooth® headphones to allow privacy. A personalized alcohol-reduction plan and counseling referral information was wirelessly printed on the ED printers.

The alcohol-screening questions in CASI were constructed based on the Alcohol Use Disorders Identification Test (AUDIT) used by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) in the US (NIAAA, 2005). The AUDIT portion uses logic branching to differentiate screening interview for nondrinkers and drinkers whose alcohol consumption was within recommended limits established by NIAAA. These limits are defined as no more than four drinks in a day and no more than 14 drinks in a week for men age 64 years and younger and no more than three drinks in a day and no more than seven drinks in a week for women and men age 65 years and older.

At-risk patients, defined as drinking more than NIAAA recommended limits and having an AUDIT score of 19 or less received a computer-guided brief negotiated interview that includes personalized feedback, readiness to change, reasons for cutting down, goal setting, and a printed personal alcohol reduction plan. CASI automatically asked patients exhibiting “at risk” drinking behavior above NIAAA recommendations how ready they are to change their drinking behavior using a scale from 1 to 10 (1 means “not at all ready” and 10 means “extremely ready”). Patients with AUDIT score of 20 or more were classified as likely dependent and did not receive a brief negotiated interview.

Data Analysis

Data was downloaded from tablet as a comma-delineated text file. The data was analyzed using Stata (version 10.1; StataCorp, College Station, TX). We used descriptive statistics, including mean responses and interquartile ranges, to assess screening results of CASI.

Results

A total of 14,487 ED patients were screened from July 13, 2006, through September 30, 2010. 1,816 selected the Spanish-language option when taking CASI. Their characteristics are shown in Table 1. Their median age was 43. There were approximately an equal number of Spanish-speaking males and Spanish-speaking females. Overall, 66% were nondrinkers, 14% drank within recommended limits, 15% were at risk, and 5% had an AUDIT score consistent with alcohol dependency.

Age differences in alcohol use

As shown in Figure 1, overall 48% of screened underage drinking patients (ages 18-20) did not drink, 31% of this age group was at risk, and 10% screened with AUDIT scores consistent with alcohol dependency, the highest of all age groups. Furthermore, 51% of screened patients aged 21-24 did not drink, 26% of this age group was at risk, and 8% were likely dependent. Non-drinking behavior increased with age and at-risk drinking behavior decreased. Subjects aged 65 or older consisted of 87% non-drinkers, and 5% at risk drinkers, while less than 1% were likely dependent. Although at-risk drinking decreased with age, 7% of patients of 30-39 years old and 6% of patients 40-49 years old exhibited likely dependency, a very similar percentage compared to ages 18-20 and ages 21-24.

Gender differences for alcohol use

Patients screened in Spanish exhibited considerable gender differences: 25% of males and 7% of females screened in the at-risk group (Figure 1). Males had a higher percent of AUDIT scores consistent with alcohol dependency (10%). Less than 1% of Females screened in Spanish had likely dependent AUDIT scores. Females also exhibited the higher percent of non-drinkers (81%).

Age group differences

The general trend for at-risk and likely dependent drinking in both genders decreased with age. Males and females however reported a significant difference ($p < .05$) in drinking patterns within each age group. At-risk drinking was highest in males aged 18-20 (48%), while females reported highest at-risk drinking within the 21-24 age group (18%). Likely dependent drinking was reported highest for males aged 21-24 (16%) and highest for females aged 18-20 (6%). Men aged 65+ reported an 11% at-risk drinking for males and few were likely dependent. No females in this age group were likely dependent.

Differences in alcohol use frequency

Significant differences ($p < .05$) in drinking frequency were observed by gender and age, in that 15% of males declared drinking one or more days a week and 2% of females declared the same frequency (Figure 3). In addition, 5% of males revealed drinking above the NIAAA recommendation limit daily or almost daily compared to less than 1% in females. Frequency of drinking over NIAAA recommendation limit varied by age both Spanish-speaking men and women. Eight percent of men ages 21-24 and 8% of men ages 40-49 expressed drinking daily or almost daily above the NIAAA the recommended limit, the highest frequency in all age groups (Figure 4). Females in those age groups expressed lower frequency, with 1% of ages 40-49 revealing drinking daily or almost daily above NIAAA recommendation (Figure 4).

Differences in alcohol drinks per drinking day

There were significant differences ($p < .05$) in terms of amount of drinks per drinking day in Spanish-speaking patients by gender and age. Twenty percent of males reported drinking above NIAAA recommendation in the amount of drinks in a typical drinking day compared to 3% of females. Drinking more than the NIAAA recommended limit on a typical day was highest for both genders between 21-24 years of age: 28% of males and 16% of females (Figure 5). The 65 and over age group exhibited the lowest amount of drinks in a typical drinking day for both genders.

No significant difference ($p > .05$) was observed by gender and age in the readiness to change response (Figure 6). Overall, both genders were ready to change after receiving CASI information, females had a slightly higher readiness to change (69% scored 8-10) compared to males (61% scored 8-10).

Discussion

This study was conducted to assess the drinking patterns and readiness-to-change response using a CASI modality in ED Spanish-speaking patients. Few alcohol Screening and Brief Intervention (SBI) studies have focused on the Latino population, and fewer have assessed Spanish-speaking patient data in the ED using a computerized interface to administer alcohol SBI.

As hypothesized, the results of the study indicated that CASI was able to detect significant differences in drinking behaviors between age and gender in the ED Spanish-speaking

patients. As patients' age increased, non-drinking increased and at-risk behavior slightly decreased. Previous studies have found young adults aged 18-24 may feel intense social pressure to drink as they transition from adolescence to adulthood (Schulenberg et al., 2002). Similarly, we found younger respondents within the same range, exhibited the highest likely dependency and at-risk behavior across all age groups. Given this finding, Spanish-speaking adolescents and young adults put themselves at risk for long-term alcohol dependency, risky behaviors, emotional distress and other negative consequences that originate from drinking.

Our study was consistent with previous studies, which look at gender difference in Latino men and women. Overall Spanish-speaking males had the highest AUDIT scores consistent with alcohol dependency and higher at-risk levels compared to females. Spanish-speaking males also exhibited highest frequency of drinks per week, and highest number of drinks per day. The significant gender differences in alcohol can be influenced by social economic factors, access to alcohol, marital status (Treno et al., 1999), education and biological factors (Diehl et al., 2007). Previous studies have also found that high levels of abstinence, low levels of heavy drinking and alcohol-related problems characterize Latino women (Treno et al., 1999, Vaca 2010, Vaca 2011, CDC 2011).

Our study suggests that Spanish-speaking males revealed greater alcohol consumption compared to their female counterpart. This could be attributed to known gender differences that exist in Latino cultures. A study conducted by the Hispanic Americans Baseline Alcohol Survey (HABLAS) found that Latino males had more liberal attitudes towards drinking behaviors than Latina females (Caetano et al., 2010). Spanish-speaking males may also encounter a greater set of stressors compared to females, which can trigger alcohol dependency or at-risk behaviors (Blume et al., 2009). Stressors combined with liberal attitudes toward drinking can have a strong influence in the difference in drinking patterns between Spanish-speaking males and females. In addition, cultural stigmas and negative attitudes towards female drinking may influence drinking patterns of Spanish-speaking females (Treno et al., 1999).

Behavior modifications are influenced by patients' readiness to change, and readiness to change increases as the level of alcohol problems increase (William et al., 2006). We found Spanish-speaking females responded to having a slightly higher readiness to change score after taking CASI, compared to the Spanish-speaking males. This finding is inconsistent with previous studies, because women exhibited lower likely drinking dependence than men in our study, but have a slightly higher readiness to change score (Vaca et al., 2010; Vaca et al., 2011). Currently there is minimal information describing the differences in readiness to change that exist within the ED Spanish-speaking patients. Greater attention and focus needs to be given to these populations to increase the efficiency of prevention, screening and intervention due to rapid growth in the Spanish-speaking population.

Limitations

The external validity of our findings to the general population or to other EDs is limited, given that ours was a convenience sample of ED patients in a tertiary care university hospital. Since we do not know which patients refused CASI or were not approached by research associates, the possibility of selection bias cannot be excluded. CASI is an instrument that does not provide a diagnosis but is able to identify those who might benefit a brief intervention or referral to treatment.

Patients who responded to the survey in Spanish were referred to as Spanish-speakers. Therefore, Spanish speakers cannot be generalized to the Latino population because not all

Latinos may have chosen to take the survey in Spanish, indicating a generational difference or cohort difference within the Latino community.

Conclusion

Our study indicated significant drinking differences among Spanish-speaking genders. Spanish-speaking males had the highest AUDIT scores consistent with alcohol dependency and higher at risk levels compared to females. Spanish-speaking males also exhibited highest frequency of drinks per week, and highest number of drinks per day. Overall, patients were ready to change their drinking behavior. More alcohol screening and brief intervention tools should be tested and become readily accessible for Spanish-speaking patients.

Despite its limitations, our study indicated that the use of a bilingual computerized tablet in Spanish-speaking patients for delivery of alcohol screening, brief intervention, and referral to treatment in the ED shows promise. CASI was able to identify if patients exhibited hazardous drinking behavior and provide personalized feedback in Spanish. Further studies should be conducted to confirm the feasibility and acceptability of computerized alcohol screening in Spanish speaking patients.

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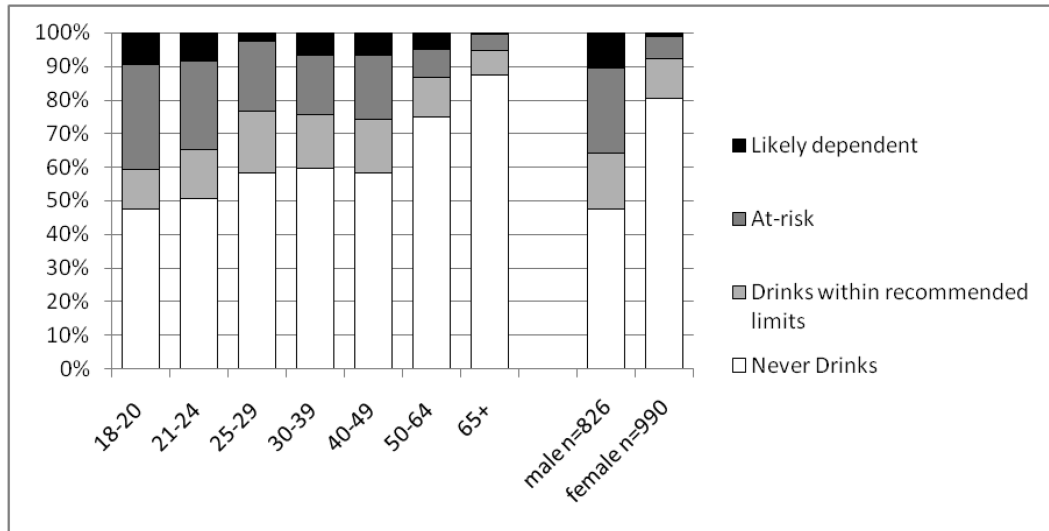


Figure 1. Screening results of Spanish-speaking patients by age and gender, n = 1,816

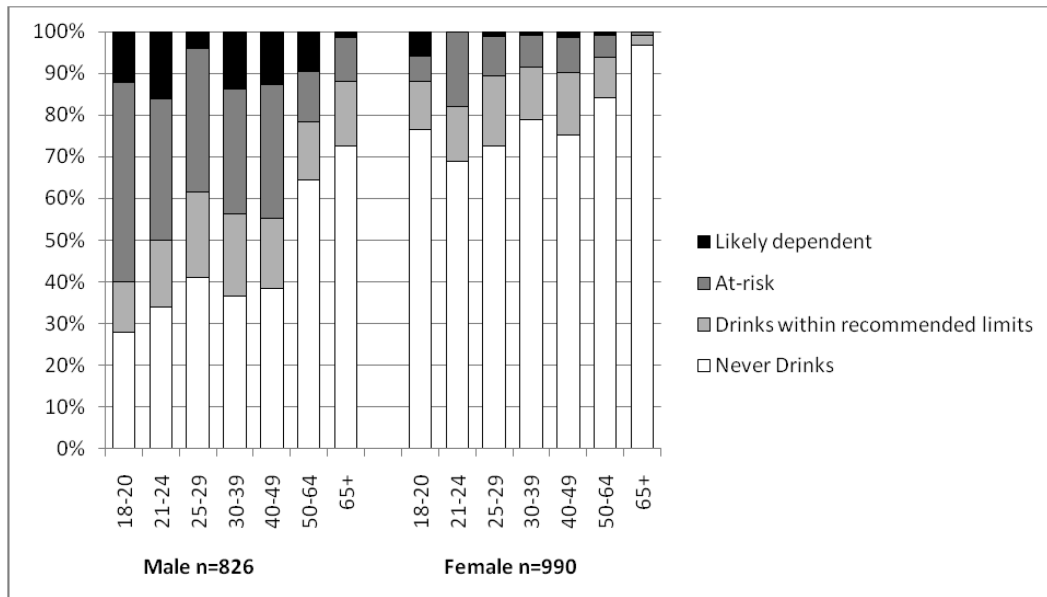


Figure 2. Screening results of Spanish-speaking male and female patients by age, n=1816

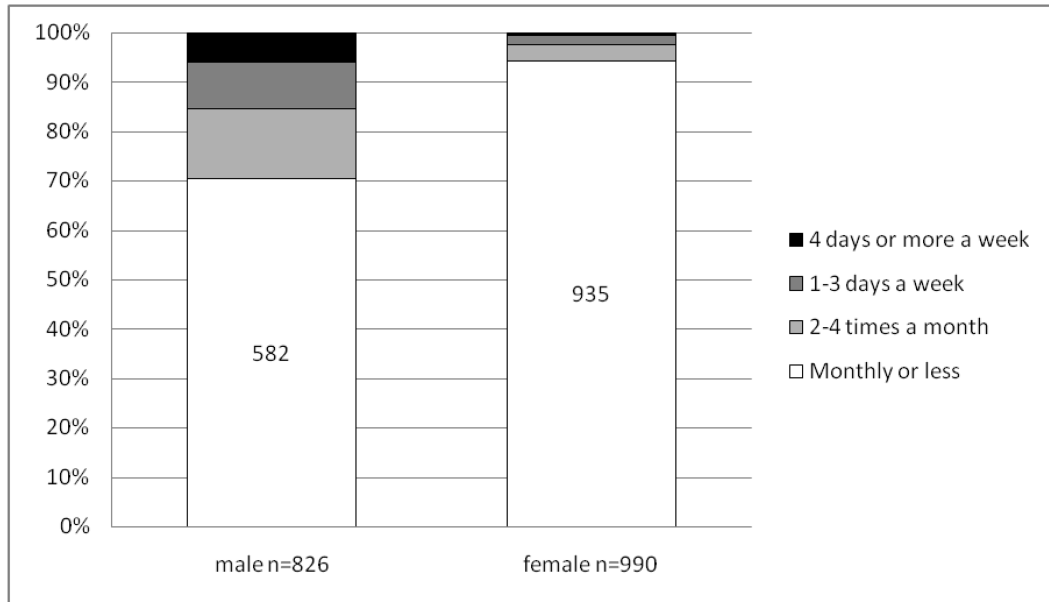


Figure 3. Frequency of Alcoholic Drink by Gender, n=1,816

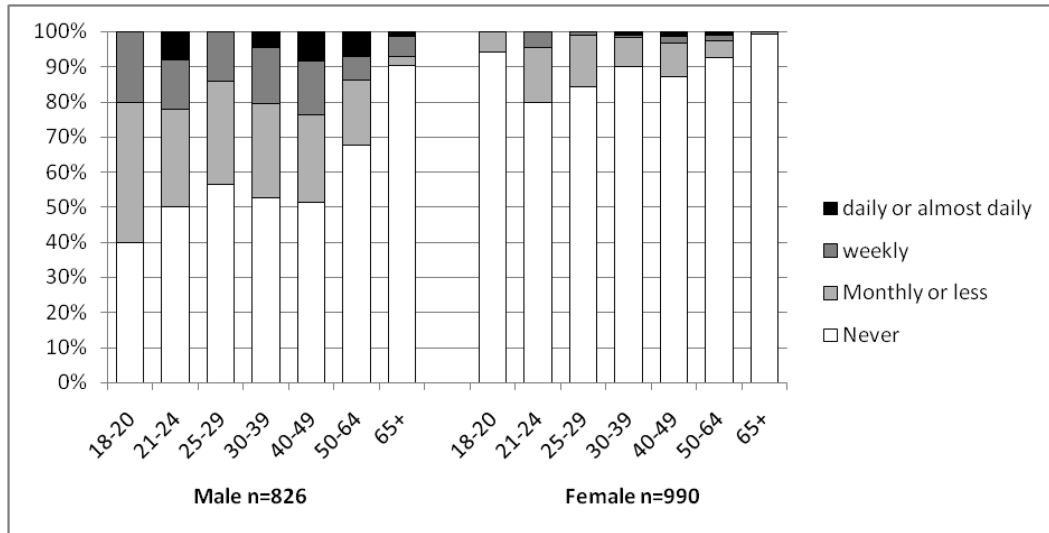


Figure 4. Frequency of exceeding the NIAAA recommendation by Age for males and Females, n=1816

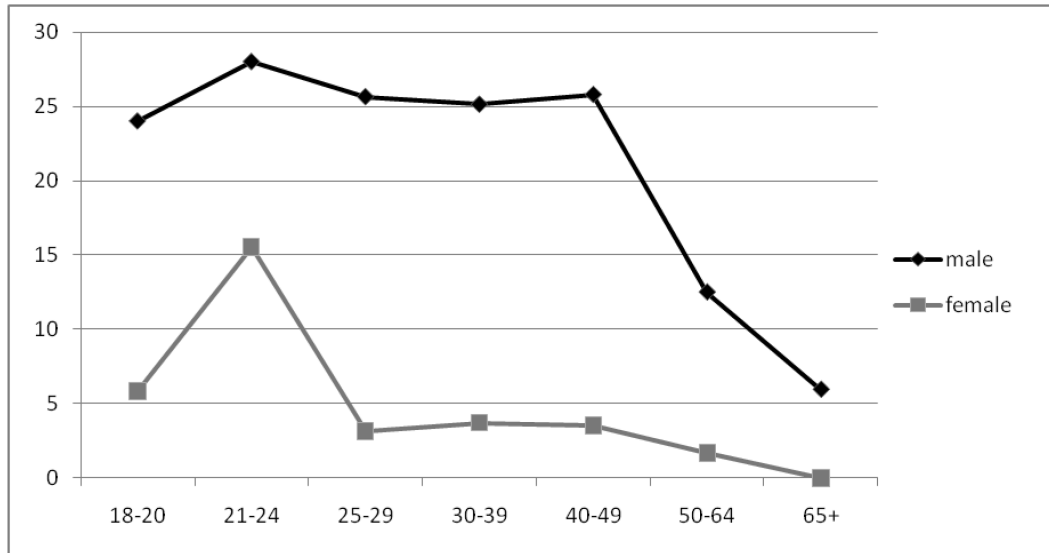


Figure 5. Percent reporting drinks per drinking day above NIAAA recommendation, Spanish-speaking males and females by age, n=1816.

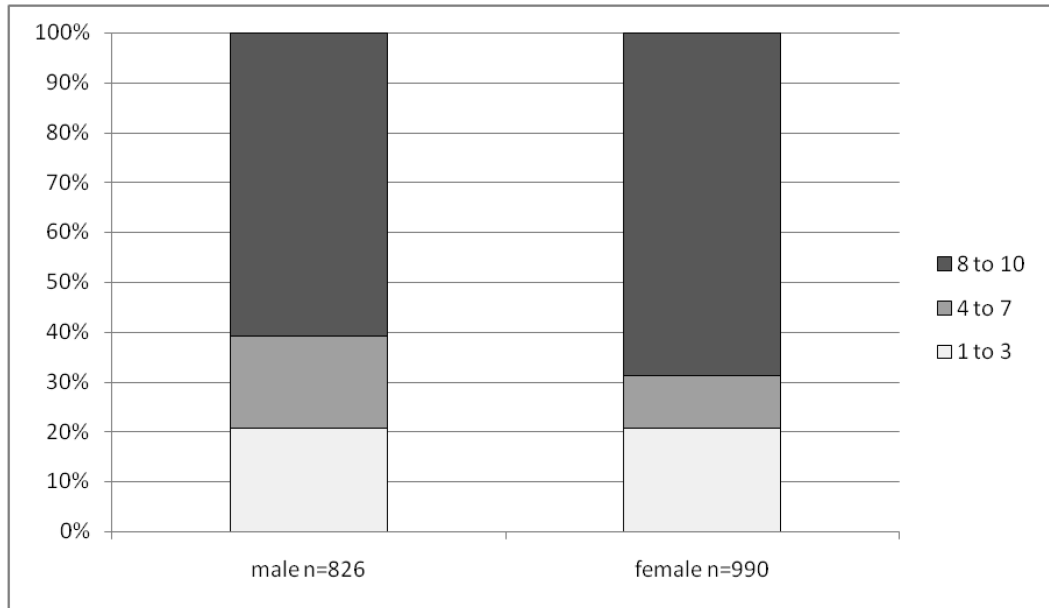


Figure 6. Readiness to change scale by Gender for Spanish-speaking patients, n=268

Table 1
Characteristics of Spanish-speaking Patients Screened, n = 1,816

	Number	Percent
Age		
• 18-20	42	2%
• 21-24	95	5%
• 25-29	173	10%
• 30-39	440	24%
• 40-49	416	23%
• 50-64	435	24%
• 65 +	215	12%
Sex		
• Male	826	45%
• Female	990	55%
Screening Result		
• Never drinks	1,190	66%
• Drinks within recommended limits	254	14%
• At-risk	278	15%
• Likely dependent	94	5%