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The Importance of Fitting In: Drinker Status, Social Inclusion, and Well-Being in College Students

Molly B. Hodgkins

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Abstract

These three studies examined the relationship between drinker status, well-being, and social inclusion in a college population, specifically seeking to discover why and how drinkers are happier than abstainers. In the first study, an existing longitudinal data set was used to compare the happiness of drinkers and non-drinkers, as well as ascertain if year in school was a factor. Drinkers were significantly happier than non-drinkers upon completion of their first semester freshman year, but this difference was not significant when the students were assessed one year later. Study 2 extended Study 1 by examining social factors as potential mediators of the relationship between drinker status and well-being. Participants completed measures that provided information about their drinking patterns and their overall happiness, as well as a multidimensional scale of social inclusion on campus. Results confirmed that non-drinkers have lower life satisfaction scores and higher levels of emotional distress than underclassman drinkers; importantly, this relationship was fully mediated by levels of perceived social inclusion. In the third part of the study, an intervention was implemented for freshman and sophomore non-drinkers, to examine if a brief intervention could increase perceived social inclusion and well-being. While this intervention did not produce significant results, possible limitations and future directions of this research are discussed, with emphasis on the importance of additional exploration of possible socially protective factors for non-drinkers. The findings in these studies suggest that college non-drinkers are at risk for negative well-being outcomes, and more research needs to be conducted to better understand their experience and address their unique challenges to “fitting in.”

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The Importance of Fitting In: Drinking Behavior, Social Inclusion, and Well-Being in College Students

While there is a large breadth of research focused on how consuming alcohol at varying levels affects college drinkers, there has been little scholarly exploration of how non-drinkers are impacted by college drinking culture until recently. Investigating how abstaining from drinking alcohol in college affects well-being or social outcomes is essential for understanding and improving the collegiate experience of non-drinkers, who are in the minority when it comes to drinking behavior. About 80% of college students report drinking at varying levels during the past year, with about 44% of students reporting regularly binge drinking at some point during their four years at their institution (Wechsler et al., 2002). Something that may ostracize non-drinkers is the oft-held assumption by college students that “everyone is doing it”; indeed, students consistently overestimate the quantity and frequency of alcohol consumption by their peers (e.g. Baer, Stacy, and Larimer, 1991). This assumption can create pressure on abstaining students to add drinking behavior to the list of their recreational activities. Perceptions that others engage in and approve of drinking are the best predictors of the frequency and quantity of college student drinking (Neighbors, Lee, Lewis, Fossos, & Larimer, 2007), so believing that others approve of drinking, and are also drinking a lot themselves, may pressure non-drinking students to adopt similar behaviors. However, it is essential to note that there is a sizable population that resists these influences, with about 20% of students identifying as non-drinkers (Huang, DeJong, Towvim, & Kessel, 2010).

Since non-drinkers are automatically unable to participate in drinking, a popular activity on college campuses, it is necessary to understand how abstaining in college affects well-being outcomes. Thus far, the relationship has only been explored in relation to binge drinking

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behavior. In a survey of 1,600 undergraduate students attending a Northeastern liberal arts college, Reid and Hsu (2012) found that binge drinkers were happier with their college social experience than non-binge drinkers. Reid and Hsu suggested that this finding may be explained by differences in levels of social status; indeed, students who reported lower levels of social status (e.g. students of color, LGBTQ individuals, or students from lower-income backgrounds) had higher levels of social satisfaction if they were binge drinkers than if they were not. This suggests that students may engage in drinking to improve their social status and therefore achieve higher levels of satisfaction with their social life and/or college experience. However, a full mediation analysis of the relationship between social status, drinker status, and overall satisfaction has yet to be conducted for this study (Reid & Hsu, 2012). Importantly, while drinking behavior may influence satisfaction with the collegiate social experience, it seems especially pressing to examine how abstaining affects broader well-being outcomes. In the current study, social factors were considered separately from well-being. Well-being was defined as either satisfaction with life in general, or levels of emotional distress, which can reasonably be explained as the opposite of well-being. The present study is novel in that it explores how being a non-drinker may affect global well-being outcomes, and how social inclusion is a key factor in that relationship.

After establishing the relationship between well-being and drinker status, it is essential to consider the association between social inclusion and drinking. The strong connection between social interactions and drinking is both intuitively and realistically accurate. First, most students do not drink alone regularly, so consuming alcohol is typically a highly social experience for the average college student (e.g. Borsari & Carey, 2001; Christiansen, Goldman, & Inn, 1982). It is possible that the motivation to drink in college could partially come from the promise of social

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inclusion, especially since expectations of social enhancement are some of the most powerful predictors of quantity and frequency of college drinking, especially for moderate and heavy drinkers (Brown, 1985; Christiansen & Goldman, 1983; Rohsenow, 1983). If an individual expects that drinking is going to result in socialization and bonding with their peers, it stands to reason that students will be likely to drink more and drink often. Cooper (1994) found that social motives predict adolescent drinking without variation across demographic groups, suggesting that drinking behavior carries with it the promise of “fitting in” or some sort of positive social outcome. However, there are no definite results about the actual (vs. perceived) relationship between social satisfaction and drinking, with Murphy, McDevitt-Murphy, and Barnett (2005) finding that the association between the two varies by gender, and that social satisfaction differs from other types of fulfillment, such as life satisfaction. This provides evidence that supports analyzing social factors and life satisfaction separately, as drinking behavior affects them in different ways.

The relationship between social inclusion and well-being is a crucial one; simply put, the literature suggests that feeling that one belongs, or perceiving medium to high levels of social support, is essential for personal happiness and well-being. Zhu, Woo, Porter, and Brzezinski (2013) found that social network size and emotional closeness were positively correlated with subjective well-being, with these relationships being fully mediated by social support. While having a substantially-sized social network is important for happiness, it is also crucial that the quality of these relationships and the number of personal benefits they offer is high for the individual to be happy (Zhu et al., 2013). In support of this finding, Lakey (2013) found that people who perceive members of their close social network as supportive generally reported higher levels of happiness. Lack of perceived social belonging or social support can contribute to

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negative emotions or states; for example, a review by Baumeister and Tice (1990) showed that multitudes of research demonstrate that perceived social exclusion leads to higher levels of anxiety.

Previous literature has established three distinct relationships between drinker status, well-being, and social inclusion, but investigating if there is a mediational relationship between these factors had not previously been conducted before the present study (Study 2). If social inclusion factors mediate the relationship between drinker status and well-being outcomes, then manipulating perceived social inclusion would ostensibly change this relationship. This provided the rationale for the intervention conducted in the third study discussed in this paper.

However, before analyzing a mediational relationship or testing an intervention it was crucial to establish if drinkers, regardless of binge drinking behavior, are truly happier than non-drinkers. In Study 1, following the results of Reid and Hsu (2012), I used an existing longitudinal data set to explore if college non-drinkers are less happy than drinkers. I also sought to examine if the association between drinker status and happiness varied by year in school. Study 2 analyzed the connection between drinker status, well-being, and social inclusion; specifically, I examined if levels of perceived social inclusion mediated the relationship between drinker status and well-being. Finally, in Study 3, I tested the potential benefits and effectiveness of a social-belonging based intervention for underclassman non-drinkers, in an attempt to increase their levels of perceived social inclusion and therefore improve their general well-being. A social belonging intervention was designed that used the same concepts and a similar design as Walton and Cohen's (2011) study, in which they recruited incoming freshmen that identified as African-American to participate in a social belonging intervention. Students who completed the intervention showed higher GPAs and higher levels of health and general well being for up to

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three years post-intervention (Walton & Cohen, 2011). The present studies are innovative in that they identify some of the unique issues that non-drinkers face in a college setting.

Study 1

In Study 1, an existing data set (Klein, 2002) was used to examine the happiness of drinkers versus non-drinkers. The two purposes of this study were to: a) examine if drinkers, loosely defined as someone who consumes alcohol, are happier than non-drinkers, as opposed to specifically binge drinkers, and b) ascertain whether class year affects the association between happiness and drinker status. I hypothesized that drinkers would be significantly happier than non-drinkers, but that this association would be particularly strong during freshman year of college, a time of transition and new social experiences for adolescents.

Method

Participants and procedure. Participants were students from a private liberal arts college who were recruited to participate in a longitudinal study about alcohol and health behaviors. The data analyzed in the present study came from three time points: T1, January of freshman year; T2, at the end of freshman spring semester; and T3, upon culmination of their sophomore fall semester. More information about data collection and procedures can be found in Dillard, Klein, and Midboe (2009).

Measures. Two measures were used in the present data analysis. One assessed happiness level at Colby (“How happy are you so far with your experiences at Colby?”) on an 8-point Likert scale, with 1 being “not at all happy” and 8 being “extremely happy.” The other asked students to identify themselves as drinkers or non-drinkers by asking “Do you drink alcohol?”

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Results

The following analyses explored if happiness was correlated with drinking status, and if this relationship changed based on which time point of the participants' college career was being analyzed. Independent-samples t-tests were used to analyze the data. At the end of the participants' freshman fall semester, or T1, ($N = 673$, with 20.95% students identifying as non-drinkers), drinkers were significantly happier than non-drinkers, $t(671) = 2.29$, $p = .022$. At the end of the participants' fall semester, or T2, ($n = 590$, with 19.15% of students identifying as non-drinkers), the difference in happiness between drinkers and non-drinkers was marginally significant, with drinkers marginally happier than non-drinkers, $t(588) = 1.73$, $p = .085$. Finally, at the end of the participants' sophomore fall semester, or T3, ($n = 447$, with 14.5% of students identifying as non-drinkers), there was no significance difference in happiness between drinkers and non-drinkers, $t(73) = 16.20$, *ns* (see Figure 1). Due to the trend of the results, further time points collected in the data set were not analyzed.

Discussion

The data analyses completed in Study 1 show that non-drinkers are less happy at their college than their drinking counterparts upon completion of their freshman fall semester. This discrepancy in happiness became marginal at the end of their freshman spring semester, and it was not significant by the time the students reached the end of their third semester at college. This trend is not surprising, as the first year of college is a time of major transition, where students seek to establish new social identities and manage new academic challenges (Terenzini et al., 1994). Since drinkers outnumber non-drinkers at a ratio of about 5 to 1 (Wechsler et al., 2002), non-drinking students are poised to experience the freshman year transition as a social minority group. Being a non-drinker during this transition appears to have negative impacts on

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happiness, but it is unclear what aspects of drinking behavior are affecting happiness (it is probably *not* the alcohol itself). In Study 2, I sought to clarify this relationship by identifying if drinker status has positive effects on social inclusion, as well as if social outcomes affect well-being. To examine if abstaining from drinking in college had broader implications for well-being, Study 2 also examined if being a non-drinker affects well-being and/or mood states that are not necessarily in reference to the college, including satisfaction with life and emotional distress.

Study 2

The purpose of Study 2 was two-fold: to compare the well-being of drinkers and non-drinkers on more dimensions than previous research, measuring happiness, overall life satisfaction, and symptoms of emotional distress, and to examine if perceived social inclusion was a factor in the relationship between drinker status and well-being. I hypothesized that being a non-drinker would negatively affect well-being outcomes, and that social inclusion would mediate the relationship between drinker status and well-being outcomes.

Method

Participants. Participants were college students from a private liberal arts college ($N = 126$). The sample was predominately female (75%). Students from any class year could participate, but freshman and sophomores were targeted for recruitment due to the results found in Study 1, so the data set was appropriately skewed for class year (50% freshmen, 33% sophomores). Participants were recruited mainly through the daily email announcements at the college, as well as through the introductory Psychology course. Participants provided informed consent prior to participating, and all procedures were approved by the Institutional Review

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Board of the college. Students either received credit for their Psychology courses, if applicable, or were entered into a raffle for a \$25 gift card to a local restaurant.

Measures.

Drinker status. Participants identified themselves as either a drinker, or a non-drinker.

Demographics. Participants provided information about their class year, age, gender, and race.

Well-being. Well-being was assessed using three separate measures.

Happiness at college. This measure used one item from Klein (2002), which was discussed in Study 1.

Satisfaction with life. To measure participants' satisfaction with life in general, the five-item Satisfaction with Life Scale was used (Diener et al., 1985). Participants responded to the five items, such as "In most ways my life is close to ideal," using a 7-point Likert scale, with 1 being "Strongly Disagree" and 7 being "Strongly Agree." Ratings on each of the items were summed to create a composite score. The scale shows high internal consistency ($\alpha = .87$).

Emotional distress. The PHQ-4 was used to screen for feelings of depression or anxiety (Kroenke et al., 2009). Participants used a 4-point Likert scale to indicate how often they experience the symptoms of anxiety and depression addressed in the questionnaire, with 0 being "Not at all," and 3 being "Nearly every day." The 4 items are then summed to create a composite score. The PHQ-4 is a reliable measure of anxiety and depression symptoms ($\alpha = .78$) (Lowe et al., 2010).

Social inclusion. Social inclusion was assessed using measures that address three major components that contribute to social inclusion: social connectedness, perceived social support, and feelings of social belonging.

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Social connectedness. Participants completed the 14-item Social Connectedness Scale – Campus Version (Lee & Davis, 2000) to provide information about how connected they felt to their peers at the college. Participants rated their agreement with 14 statements about connectedness on campus, such as “There are people on campus with whom I feel a close bond,” or “I feel so distant from the other students.” Participants responded using a 6-point Likert scale, with 1 being “Strongly Disagree” and 6 being “Strongly Agree.” Half of the items were reverse scored and then all were summed to create a composite score of connectedness. The Social Connectedness Scale shows high internal consistency ($\alpha = .91$) (Lee, Keough, & Sexton, 2002).

Social support. Social support was measured using the multidimensional, 48-item Interpersonal Support Evaluation List – College Version (ISEL) (Cohen & Hoberman, 1983). The ISEL uses four subscales – Tangible, Belonging, Appraisal, and Self-Esteem – to create a comprehensive measure of the components that provide social support in a campus setting. Participants responded with either “Probably true” or “Probably false” for each question. In all, 24 of the items are reverse scored, and all 48 items are then summed to create a composite score for social support. The ISEL shows reliable internal consistency ($\alpha = .77$).

Social belonging. Participants were asked if they felt they belonged at the college, which was borrowed from Walton and Cohen (2011).

Procedure. Participants used an online link to access the study through Qualtrics. In the consent form, they were informed that they would be participating in an experiment called “Social Aspects of College Life,” and that the purpose was to measure social behaviors and their outcomes in college students. Since participants were completing the experiment on their own computers in an uncontrolled environment, they were encouraged to complete the questionnaire in a quiet place, free from social or electronic distractions. Participants then completed all of the

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measures, which took approximately 30 minutes. Upon completion of the questionnaire, they received a debriefing form which explained the purpose of the experiment as well as detailed the objectives of the measures they completed.

Results

A total of 126 students completed the questionnaire, with the average age of participants being 19 ($SD = 1.07$). The majority of the participants were freshman (50.79%), followed by sophomores (30.95%), juniors (9.52%), and seniors (8.73%). The sample was mostly Caucasian (75.39%), with the next most frequently selected race being Asian (12.70%). Participants were unintentionally mostly female (74.60%), as opposed to males (23.81%). Finally, drinkers (78.57%) outnumbered non-drinkers (18.25%) at a rate comparable to what has been found in national data (Weschler et al., 2002; Huang et al., 2010).

There were three main paths considered in the following data analysis between drinker status, social inclusion, and well-being. A mediational diagram illustrating these three paths is shown in Figure 2.

Drinking status and social inclusion (Path A). Degrees of freedom in the following results vary because a number of students ($n = 29$) did not complete the entire questionnaire. Independent-samples t-tests were used to examine the relationship between drinking status and social inclusion measures. The relationship between drinker status and social support (ISEL) was significant, $t(97) = 5.03, p < .001$. Drinkers received higher scores on the ISEL ($M = 37.98$) than non-drinkers ($M = 28.26$). The relationship between drinker status and social connectedness (SCS) was non-significant, $t(111) = 5.03, ns$. There was also no significant association between drinker status and the one-item social belonging measure from Walton and Cohen (2011), $t(112) = 5.03, ns$.

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Drinking and well-being (Path C). The connection between drinker status and well-being was explored next. Drinker status and overall satisfaction with life (SWLS) were significantly related, $t(113) = 2.42, p < .017$. Drinkers had significantly higher scores on the SWLS scale ($M = 26.57$) than abstainers ($M = 22.91$), indicating that drinkers were overall more satisfied with their lives. There was a significant relationship between drinker status and emotional distress, as defined by total score on the PHQ-4, $t(113) = -2.58, p < .011$. Drinkers' composite score on the PHQ ($M = 7.23$) was lower than non-drinkers ($M = 9.05$), which means that non-drinkers were experiencing significantly more symptoms of emotional distress than drinkers were. There was no significant association between drinker status and the one-item happiness question from Klein (2002), $t(112) = .523, ns$.

Social inclusion and well-being (Path B). Correlational tests were used to assess the relationship between inclusion and happiness. Given the goal of examining mediation and the results found above, only the significant social inclusion measure (ISEL) and happiness measures (satisfaction with life, and emotional distress) identified in the previous analyses were included here. Scores on the ISEL were highly correlated with overall satisfaction with life, $r(99) = .53, p < .001$. ISEL scores and symptoms of emotional distress were also highly correlated, $r(99) = -.61, p < .001$.

Mediational effect of social inclusion. Upon discovering that the relationships between all three categories of variables – drinker status, social inclusion, and well-being – were significant, bias-corrected bootstrapped mediation analyses (Mackinnon, 2008) were used to determine if social support was a mediator between drinker status and well-being. Satisfaction with life was the first potential outcome explored. As shown in Figure 3, drinker status predicted perceived social support which in turn predicted overall satisfaction with life. Mediation analysis

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showed that social support mediated the relationship between drinker status and satisfaction with life (mediated effect = -2.25; 95% CI [-6.29, -1.82]). The mediational effects of social support on emotional distress were also explored. As again shown in Figure 4, drinker status predicts perceived social belonging, which also, in turn, predicted emotional distress levels. Mediation analysis supported social support as a mediator of the relationship between drinker status and emotional distress (mediated effect = 2.06; 95% CI [1.07, 3.44]).

Discussion

Study 2 supported that hypothesis that non-drinkers have lower levels of well-being than drinkers in broader realms that do not specifically refer to college life. Non-drinkers had significantly lower levels of satisfaction with life than drinkers, and higher levels of emotional distress, which are two important indicators of overall well-being. While these results were significant without controlling for class year, since freshman participants made up the majority of the sample, this does not contradict the results found in Study 1. Study 2 also supported the hypothesis that social inclusion, as defined by scores on the multidimensional social support scale administered in this study, is a mediator of the relationship between drinker status and well-being outcomes. This suggests that being a non-drinker negatively impacts perceptions of social inclusion, which in turns lowers their levels of satisfaction with life and increases symptoms of emotional distress.

It is interesting to note that the happiness outcome that was significant in Study 1 (happiness in reference to the college) was not significant in Study 2. Since the difference in other well-being outcomes between drinkers and non-drinkers was significant, it is possible that drinkers and abstainers can be equally satisfied with their experiences in reference to college, but may differ in well-being on a more global level. This lack of difference on a college-specific

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measure could also explain the lack of difference for drinkers and non-drinkers on the one-item social belonging question that asked about belonging in reference to the college. While the ISEL's 48 items are relevant to the typical college student, the statements reference several different sources and types of belonging and support that do not necessarily equate with generally belonging at the college (for example, ability to borrow money from a friend, or having a close friend whom they could go to a social event with). It is also important to acknowledge that social connectedness was not significantly different between drinkers and abstainers; this is perhaps because feeling socially connected does not necessarily equate with a deeper sense of support and inclusion.

With results from Study 1 and 2 indicating that underclassman non-drinkers are having lower levels of perceived social inclusion at college than drinkers, Study 3 sought to employ an intervention to attempt to increase perceived social inclusion via social belonging in non-drinkers, and therefore better their well-being outcomes.

Study 3

After discovering that social inclusion mediates the relationship between drinker status and well-being in underclassman college students, it was essential to explore the possibility of increasing levels of perceived social inclusion, and therefore well being, in the non-drinking population. As previously discussed, this intervention was based on the procedures and materials used by Walton and Cohen (2011). While Walton and Cohen did not explicitly measure levels of well-being, in the face of the findings from Study 2 it stands to reason that any intervention that increases levels of social inclusion should have some effect on well-being outcomes. In Study 3, freshman and sophomore non-drinking students completed a brief social belonging intervention

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and were assessed at approximately one week post-intervention on levels of well-being and general life satisfaction, as well as their perceived social support and belonging.

Method

Participants. Participants were freshman and sophomore non-drinkers from the same private liberal arts college as in Study 1 ($N = 44$). Students were recruited through the daily email announcements of the college, through the introductory Psychology course, and by flyers in and targeted emails to the chemical-free dorms. Participants were compensated with their choice of \$10 or course credit. Participants provided informed consent prior to participating, and all procedures were approved by the Institutional Review Board of the college.

Measures. All participants completed a pre-screening to provide information about their drinking status and their class year. Students who were non-drinkers and also freshmen or sophomores received a password that allowed them to sign up for the experiment.

Demographics. Participants provided information about their class year and gender.

Well-being. Well-being was measured using the same scales from Study 2.

Social inclusion. Perceived social inclusion was measured using the most pertinent scales from Study 2: the 48-item ISEL (Cohen & Hoberman, 1983), as well as the one-item social belonging question from Walton and Cohen (2011).

Procedure. The study consisted of three phases: baseline assessment, intervention, and the one-week follow-up. Some participants completed the baseline assessment and intervention in a lab setting, and were emailed a link to the follow-up a week later to complete on their own ($n = 19$). Due to difficulty in recruiting an adequate number of participants, some completed the baseline assessment, intervention, and follow-up online on their own time ($n = 25$). In the consent form for the experiment, participants were told that the purpose of the experiment was to

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understand their personal experiences at and attitudes towards the college, as well as to provide incoming students with a more accurate idea of what college is like. The wording of this alleged purpose is similar to Walton and Cohen (2011). The baseline assessment consisted of a questionnaire using the measures described above, and participants were randomly assigned to the intervention immediately after. This initial session took approximately 30 minutes. The follow-up contained the same questions used in the initial assessment, and took approximately 15 minutes to complete. Once participants were finished, they received a debriefing form that detailed the purpose of the experiment, as well as notified them that the information they received in the intervention was crafted by the experimenter.

Experimental design. Participants were randomly assigned to one of three conditions: (1) a general social belonging intervention, (2) an alcohol-specific social belonging intervention, and (3) a control condition. Participants were evenly distributed amongst all conditions ($n = 13$ for each intervention condition, and 15 for the control condition). In the general social belonging intervention, the information received and activity completed was about broad social belonging on campus, with no mention of drinking or alcohol. In the alcohol-specific social belonging intervention, the information received and activity completed was heavily stressed to be about belonging in reference to the drinking culture on campus. Finally, in the control condition, participants received information and wrote about the rigorous academic life at college. The control condition was carefully crafted to ensure that there were no specific references to social belonging on campus.

Intervention. The intervention design used procedures and materials from Walton and Cohen (2011), as well as Walton, Logel, Peach, Spencer, and Zanna (in press). After completing the baseline assessment, participants viewed statistics and narrative passages that were

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purportedly collected from senior students at the college in a recent experiment. The experimenter created both the statistics and narratives, in order to encourage participants to believe that concerns about belonging were temporary and common. Participants in the general social belonging condition viewed statistics that stated that while the majority of seniors at the college reported worrying about not belonging when they were freshman (65%), a minority of them still worried about belonging during their senior year (5%). Participants in the alcohol-specific belonging condition received the same statistical information, but worrying about not belonging was specific to the students being non-drinkers. Participants in the control condition also received the same statistical information, but the purported worry was about academic skills.

Participants then read three narratives that were supposedly written by senior students. The narratives were about a paragraph long each and addressed the topic specific to the condition. The wording of the narratives emphasized that struggling with belonging (or, in the case of the control condition, academics) was common and could be overwhelming, but that there were ways to overcome these feelings and that most concerns were resolved after spending a little bit more time on campus.

Finally, participants were asked to write for 10 minutes as if they were giving advice to an incoming student. Those in the general social belonging group were told to give advice about fitting in at the college, the alcohol-specific social belonging group wrote about giving advice about fitting in as a non-drinker, and the control group wrote as if they were giving advice about academic challenges. All participants were told to draw especially from their own experiences, in order to increase the personal relevance of the intervention. The purpose of writing these paragraphs was to increase the participant's cognition of their own social belonging, as well as providing them with evidence that problems with social belonging were common amongst

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underclassman and typically dissolve with time. Presumably, most participants would be intrinsically motivated to frame their messages positively in order to reassure incoming students, and a brief review of their responses after completion of the experiment confirmed that this was true. As Walton and Cohen (2011) discuss, the assumption of a long-term effect of this intervention partially comes from the “saying is believing” phenomenon that was first documented by Higgins and Rholes (1978), in which participants who wrote information about a topic showed better memory and more attitude change toward the subject.

Upon completion of the intervention, participants were immediately assessed using the one-item social belonging measure. Participants responded to all other measures in the one week follow-up.

Results

Of the 44 participants who participated in the study, there were 26 freshmen and 18 sophomores. As in Study 2, the majority of participants identified as female, with 29 females, 13 males, and 1 participant identifying their gender as “other.” In all, 41 participants were included in the final analyses, as three students failed to complete the one-week follow-up. To ensure that all conditions were equal before the intervention, one-way ANOVAs were conducted to confirm that there were no differences between conditions for baseline measurements. There were no significant differences between baseline measurements across conditions, all p 's > .15.

Effects of the intervention on outcomes. In order to analyze the effects of the intervention on outcomes, mixed-model ANOVAs were used to compare the within-subjects variable of change in outcome scores and the between-subjects variable of condition. For all five outcomes (satisfaction with life, emotional distress, perceived social support, happiness, and belonging), the time x condition interaction was not significant, all p 's > .582. Means for these

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interactions are shown in Tables 1, 2, and 3. This indicated that condition had no statistically significant effects on outcome variables. There was a marginally significant main effect for time for two of the outcome variables. For perceived social support, there was a marginally significant difference between T1 and T2 scores, $F(38) = 3.77, p = .06$, with participants reporting lower perceived social support at T2 ($M = 32.83$) than at T1 ($M = 34.10$). There was also a marginally significant difference between T1 and T2 scores for emotional distress, $F(40) = 2.95, p = .094$, with participants reporting marginally lower emotional distress scores at T2 ($M = 7.46$) than at T1 ($M = 7.85$). There were no other significant differences between outcome scores, regardless of condition, for the remaining three outcomes, all p 's $> .15$.

Gender as a moderator. Upon discovering that the intervention had no effects when the sample was analyzed without controlling for demographic factors, linear regression was used to examine if gender moderated the relationship between condition and change in outcome scores. Gender was not a significant moderator for any of the five outcomes, all p 's $> .364$.

Discussion

Study 3 failed to show any significant results of either the general belonging or alcohol-specific intervention relative to the control. There are several reasons why this could have happened. First, the lack of an intervention effect on Walton and Cohen's (2011) social belonging item could be due to the length of the intervention. In Walton and Cohen, the intervention was an hour long, and participants received an extra opportunity to further reinforce the social belonging aspect of the intervention by reading their written pieces in front of a video camera. In contrast, the present interventions lasted for about 15 minutes, due to time constraints through the experiment scheduling system used by the college. A longer intervention could very well have a larger impact on social belonging. Second, the social belonging intervention

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procedure was not an effective method for targeting feelings of social support. In fact, social support decreased across all conditions. Because social belonging interventions did not improve the same characteristic of social inclusion that was significantly different between drinkers and non-drinkers and mediated effects on well-being in Study 2, there was also no identifiable effect on well-being.

There were also several limitations present in the conduction of this study. The first was overall sample size. While chemical-free dorms and non-drinking students were heavily recruited, the total sample size was much smaller than Walton and Cohen (2011; $n = 92$), which lessened the experimental power of the study. Additionally, some of the participants completed the intervention portion in the lab, while others completed both the intervention and the follow-up measures on their own personal computers. This likely reduced the effectiveness of the intervention, as it has been shown that interventions are more effective in a laboratory setting than in more generalized, uncontrolled environments (Hulleman & Cordray, 2011). It is also possible that timing in the semester contributed to the lack of results. Since the significant difference in happiness between drinkers and non-drinkers established in Study 1 was only statistically significant upon completion of their first semester at college, students who participated in this study were, at a minimum, already halfway through their second semester, or, at a maximum, in their fourth semester of college. This may mean that the non-drinking students who participated in the present intervention already passed through the “critical period” of unhappiness that was previously identified.

A notable result of this study was the finding that there were marginal changes in perceived social support and emotional distress between baseline and the one-week follow-up, regardless of which condition participants were in. This indicates that there was either an

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unintentional effect of the control condition, or that there was a third, unknown variable that affected participants during the one week before they filled out the follow-up measures. Since social support and emotional distress were found to be negatively correlated in Study 2, it seems paradoxical that they both decreased during the one week period. This points to some kind of outside event affecting students who participated in the experiment, which could be likely, considering that the time of the administration of the study there were a series of troubling racist events on campus that broadly affected many students. This took place during the height of data collection for the study, in which several participants would have been in the period between the baseline measurement and the follow-up. It is possible that these events could have disrupted participants' normal social cognitions and therefore affected their perceptions of social inclusion. This suggests that in future interventions such as these, participants should be asked to indicate if they have recently experienced any traumatic or notable events that could affect their responses.

General Discussion

The present studies are novel in that they explore the well-being and social outcomes of college non-drinkers, in a field of literature that has, thus far, mostly focused on the consequences of college drinking. Study 1 extended and elaborated on the results found by Reid and Hsu (2012) by establishing that drinkers and non-drinkers differ in happiness levels, regardless of binge drinking behavior. It also showed that the first semester or so of freshman year is a critical time of relative unhappiness for abstaining students, something that colleges should certainly be interested in addressing. Study 2 is especially innovative in that it reveals that social inclusion factors mediate the relationship between drinker status and well-being. It also shows that drinker status affects broader aspects of well-being than just happiness at the institution that the participant is attending. Study 3 was the first of its kind – an intervention

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targeted at improving the well-being or perceived social inclusion of college abstainers – and while it did not produce any significant outcomes, it did provide important information about how to better craft an intervention dedicated to helping non-drinking students acclimate to an environment that heavily involves drinking.

Future steps for extending these studies would include identifying possible protective factors for non-drinkers that prevent them from succumbing to negative well-being outcomes in their freshman year. As indicated in Study 1, there are some mechanisms through which non-drinking students eventually “catch up” to their drinking peers in terms of well-being outcomes; however, at this point in time, it is unclear how this happens. It is possible that social drinking events are especially popular for first-year students to meet new people, and that non-drinking students have to use more labor-intensive, time-consuming processes to make friends. It is necessary to explore how non-drinking students find sources of social belonging and support on campus, whether it is through clubs, sports, type of housing, or some other kind of organization that facilitates socialization. A longitudinal examination of participation would offer insight as to how non-drinking students acclimate to and become accepted by peers at college.

The implications of these studies are key for improving the experience of non-drinking students on college campuses. It is not desirable for college campuses to have an atmosphere that promotes negative well-being outcomes in underclassman abstainers. While it is undoubtedly impossible to change some of the aspects of collegiate drinking culture that contribute to this, college administrators may address this problem by incorporating special programs or support for non-drinking students, such as providing and promoting more chemical-free events that are respected and attended by both abstainers and drinking students during freshman year. In their examination of predictors for first-year drinking, Borsari, Murphy, and Barnett (2007) suggest

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that the best administrative strategies to address social motives for first-year drinking include education about strategies for social skills and bonding outside of the party or drinking scene, and to provide chemical-free social gathering alternatives. It seems that these same strategies could be employed to promote positive social experiences for non-drinkers during the crucial transition into college.

In light of the results of the present studies, it seems especially imperative to further explore and address the unique challenges that non-drinkers face during the beginning of their college experience. Students who drink heavily in college have been studied due to the multiplicity of problems that occur with those kinds of behaviors, but non-drinkers have been somewhat overlooked in research because of their comparative lack of problems. However, non-drinkers must face the difficult task of fitting into college without participating in one of the major social activities on campus. This results in negative well-being outcomes for non-drinking students. Since non-drinkers are a population who avoids the negative consequences of alcohol consumption in college, future research needs to reward abstainers by specifying how their social experience is different from their drinking counterparts, and by exploring solutions to combat the negative effects of this difference.

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Outcome	General social belonging intervention (T1)	General social belonging intervention (T2)
Social support	32.08	31.30
Social belonging	5.23	5.15 (immediate post-test), 5.00 (T3)
Satisfaction with life	25.69	26.54
Emotional distress	8.15	7.46
Happiness at college	5.92	5.85

Table 1. Mean outcome scores as a function of condition and time. This table reports the means for the general social belonging intervention.

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Outcome	Alcohol-specific belonging intervention (T1)	Alcohol-specific belonging intervention (T2)
Social support	36.62	35.00
Social belonging	4.85	5.08 (T2), 4.92 (T3)
Satisfaction with life	24.15	25.15
Emotional distress	8.23	7.92
Happiness at college	5.77	5.62

Table 2. Mean outcome scores as a function of condition and time. This table reports the means for the alcohol-specific social belonging intervention.

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Outcome	Control condition (T1)	Control condition (T2)
Social support	33.67	32.37
Social belonging	4.93	4.87 (T2), 4.87 (T3)
Satisfaction with life	25.47	26.2
Emotional distress	7.27	7.07
Happiness at college	5.80	5.87

Table 3. Mean outcome scores as a function of condition and time. This table reports the means for the control condition.

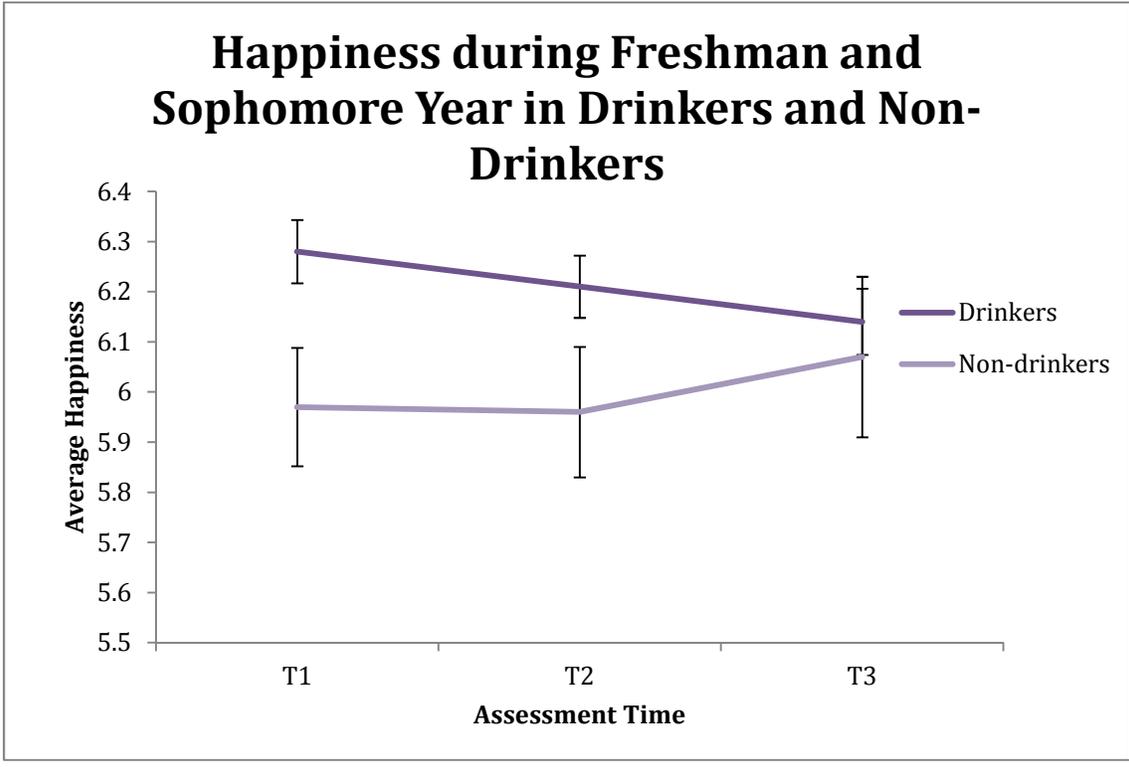


Figure 1. Mean happiness as a function of time assessed and drinker status. Error bars represent the standard errors of the means.

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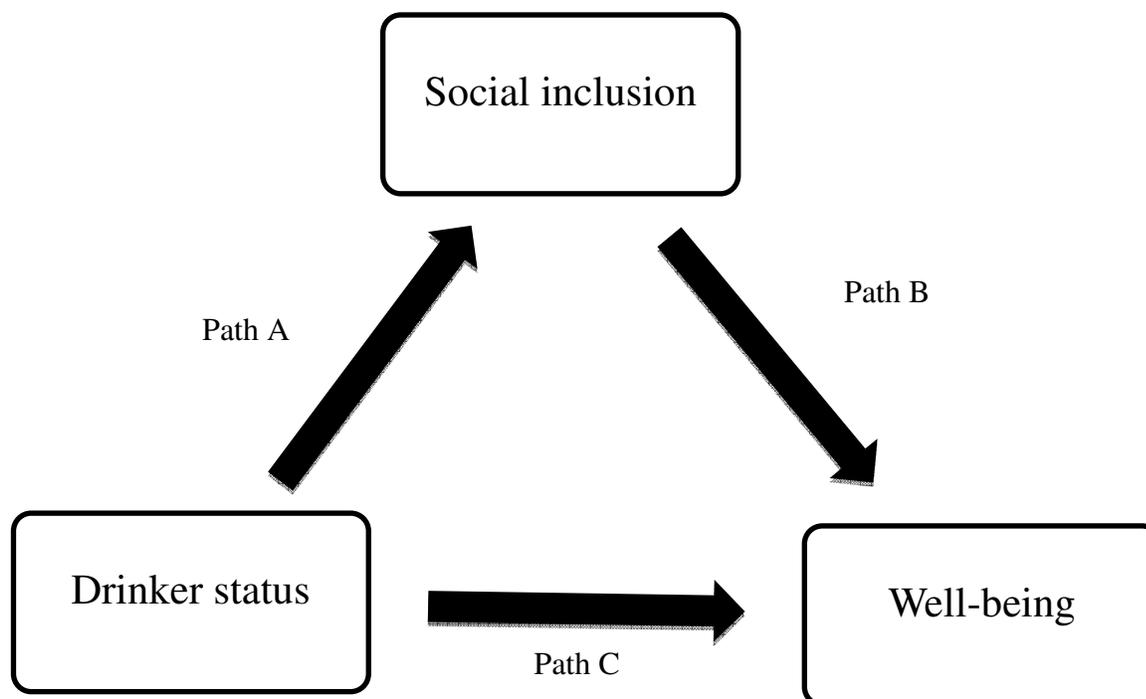


Figure 2. Mediation model indicating the different path relationships between drinker status and well-being, as mediated by social inclusion.

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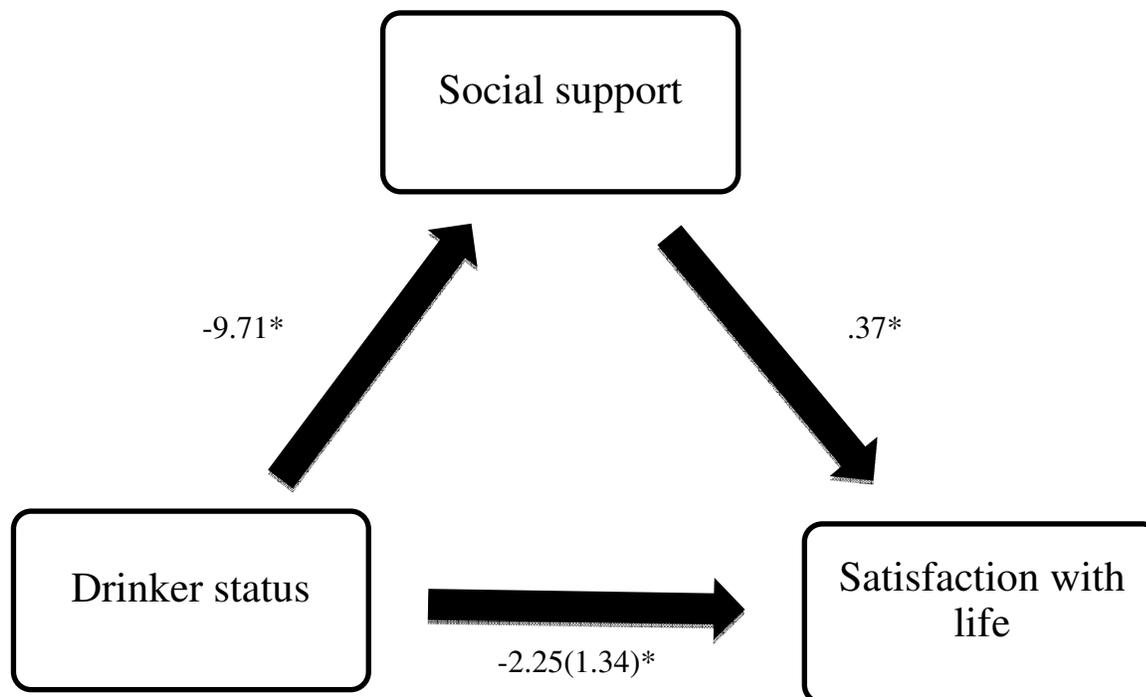


Figure 3. Standardized regression coefficients for the relationship between drinker status and satisfaction with life, as mediated by perceived social support.

* $p < .05$.

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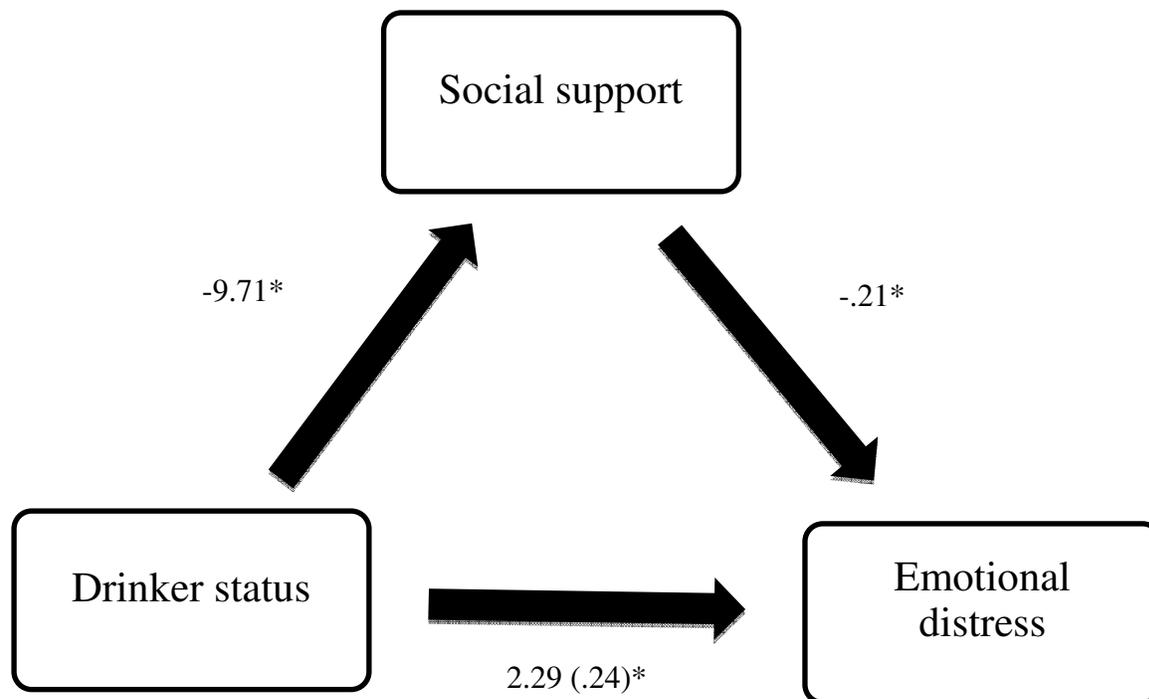


Figure 4. Standardized regression coefficients for the relationship between drinker status and emotional distress, as mediated by perceived social support.

* $p < .05$.