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The Virtuous Drinker: Character Virtues as Correlates and Moderators of College Student Drinking and Consequences

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Abstract

Objective—The present study examined the relationship between alcohol use and positive psychology's character virtues¹ in a college student sample. Each of the virtues of wisdom, courage, humanity, justice, temperance, and transcendence were examined as protective factors and moderators of drinking consequences.

Participants—This sample included 425 undergraduate students at a large Northwest University (69% female; 52% Caucasian, 34% Asian).

Methods—Participants completed paper and pencil questionnaires during October and November 2006 in exchange for extra credit in psychology classes.

Results—Higher temperance scores were associated with abstinence, lower risk drinking, and fewer consequences among heavy drinkers; both increased justice and transcendence were independently associated with abstinence only; and wisdom, courage, and humanity were not associated with any outcomes.

Conclusions—The associations between virtues and college student drinking support a collaboration between addictive behaviors and positive psychology to address college student drinking and minimize consequences.

Keywords

alcohol; alcohol-related consequences; character virtues; college students

Alcohol use is prevalent on college campuses, and carries high risks to the health and welfare of students. Millions of college students are affected by alcohol-related consequences, including almost 600,000 injuries, 700,000 assaults, 100,000 sexual assaults, and 1,700 deaths annually.² Additionally, 2.1 million students drive under the influence of alcohol per year.³ These findings are consistent with National College Health Assessment (NCHA)⁴ outcomes suggesting that 35% of students reported that they did something they later regretted, 31% forgot where they were or what they did, and 19% physically injured

themselves after drinking. Additionally, 8% of students in the NCHA sample listed alcohol use as an impediment to their academic performance, including getting poorer grades or dropping a class.

National efforts are underway to monitor and alter the course of college student drinking, and this population has consistently reported higher-risk patterns that are more resistant to intervention efforts than the general population. Monitoring the Future (MTF) data⁵ found past year alcohol use among college students was 82%, and 30-day prevalence was 65%. Further, MTF findings indicate increased risk of heavy episodic drinking among college students (40%) than their age-matched peers not in college (35%). These estimates are consistent with NCHA findings that 38% of college students reported consuming 5 or more drinks the last time they partied.⁴ Moreover, these percentages have remained consistent in spite of efforts to reduce harmful drinking in this population. Baseline results from Healthy People 2010 indicted that 32% of adults ages 18 to 25 reported binge drinking, compared to 17% of adults overall.⁶ Further, the study's Midcourse Review⁷ found no change in college student binge drinking during the past 2 weeks, though among high school seniors they found 14% improvement toward the targeted change of reducing use over the same time period.

Many researchers have attempted to identify the risk factors associated with high-risk drinking in college, including behavioral, psychological, social, environmental, and biological factors.^{8–13} Studies have also focused on protective behavioral strategies, such as keeping track of number of drinks or consuming food before drinking that students might use to reduce the harms associated with heavy alcohol use.^{4,14} However, research exploring individual protective factors (ie, individual characteristics of a student that might be associated with abstinence or less risky consumption, or even with fewer consequences during heavy drinking episodes) has not received as much attention. Positive psychology, a branch of psychology that focuses on optimal functioning and traits related to individual enhancement, gives us an opportunity to investigate the role of personal virtues and alcohol outcomes in order to integrate these fields and improve prevention and intervention strategies.

Character Strengths and Virtues

Positive psychology has made great advances in identifying and classifying character strengths and virtues.¹ The definition of a virtue is a core characteristic that is valued by different societies and has evolutionary value.¹ Strengths are individual traits, or ways toward virtuous living, grouped under each virtue. Using qualitative and quantitative techniques, researchers identified 24 strengths comprising 6 core virtues, and developed the Classification of Character Strength and Virtues (CCSV) to measure them. The CCSV has been replicated across diverse populations, and is frequently used in positive psychology research.¹ This article attempts to bridge the gap between risky behaviors and positive psychology. The following sections discuss each of the 6 core virtues: wisdom, courage, humanity, justice, temperance, and transcendence as possible protective factors from alcohol misuse and related consequences.

Wisdom

Five strengths comprise the virtue of wisdom: open-mindedness, perspective, love of learning, creativity, and curiosity. The first 2 strengths, open-mindedness and perspective, are considered protective factors because increased judgment and critical thinking skills are associated with reduced harm from substances.¹⁵ Love of learning may also be indirectly protective as academic achievement is associated with decreased risk.¹⁶ The latter 2 strengths have mixed influence on risky drinking. Alcohol use has been identified as an

impediment in certain aspects of creativity,¹⁷ yet creativity is still identified as a motive for drinking.^{18–20} Novelty-seeking, or curiosity, is also considered a risk due to earlier initiation and more positive attitudes toward drinking.^{21–23} Despite these factors, judgment and perspective are anticipated to provide an overall protective effect against heavy drinking.

Courage

Courage is composed of bravery, persistence, integrity, and vitality. Because one common expectation of alcohol effects among college students is “liquid courage,” or feeling more brave and daring,^{24,25} it is anticipated that students naturally high in courage will not need to seek that effect from alcohol. In addition, written integrity tests predict less substance use,²⁶ persistence has been negatively correlated with alcohol abuse,²⁷ and heavy alcohol use has had negative effects on vitality and is associated with low vigor.^{21,28}

Humanity

The strengths of love, social intelligence, and kindness comprise the virtue of humanity. Alcohol is frequently used as a “social lubricant” in college,^{29–31} or a way to ease social anxiety. Thus, students high in strengths such as love and social intelligence may not rely on alcohol for social interactions. Kindness also may protect from risky drinking due to a sense of nurturance or responsibility to care for others.

Justice

Fairness, citizenship, and leadership comprise the virtue of justice. No research was located regarding fairness or justice and alcohol specifically, although given that most college drinking occurs with underage students, it is reasonable to assume that a strong trait of justice might be a protective factor. Although extensive literature exists for both citizenship and leadership, the findings are mixed. Citizenship is noted to have a protective effect, specifically through increased social capital and volunteer work,^{21,32–34} although in specific groups such as fraternities and sororities, a greater sense of citizenship is correlated with increases in drinking.^{35,36} Research on leadership is also mixed. Some studies report higher consumption in leadership roles among students in general,³⁷ in the Greek system,³⁸ and in athletes,³⁹ whereas others report no significant differences.⁴⁰

Temperance

Temperance is composed of forgiveness, humility, prudence, and self-regulation. Self-regulation has been thoroughly explored as a protective factor,^{41–46} and more recently a moderator of consequences.⁴⁷ Self-regulation is an important protective factor because it incorporates self-monitoring of drinking (ie, keeping track/count of drinks), goal-setting for moderation and harm reduction, and exercise of coping skills to deal with stress (eg, mindfulness of urges and craving). In addition to self-regulation, the current study will incorporate the strengths of forgiveness, humility, and prudence. Humility and prudence are predicted to also be protective factors because they are incompatible with the inhibition-reducing effects of alcohol. Individuals who value humility and prudence may not be comfortable with or seeking out alcohol’s influence on inhibitions.

Transcendence

Transcendence is composed of appreciation of beauty and excellence, gratitude, hope, humor, and spirituality, and has been associated with lower substance use.²¹ Literature reviews did not reveal any prior work with gratitude or appreciation of beauty and excellence. Humor has mixed findings, with laughter increasing after using alcohol,⁴⁸ and

heavier drinkers reporting more laughter even when not drinking.⁴⁹ A lower sense of hope or optimism has been associated with increased alcohol use,^{50–52} and spirituality has been consistently related to reduced drinking and abstinence.^{53–57} It is important to note that spirituality is distinctly different from religiosity. Spirituality refers to a metacognitive set of beliefs in a higher spiritual power without reference to a specific religious belief or particular deity. For instance, identification of a “higher power” serves as an alternative to ego-attachment, and does not rest on one particular set of views. This measure focuses on general spirituality rather than particular religious beliefs.

Overall, the virtues are predicted to be negatively associated with drinking, as well as to moderate the negative consequences experienced by those students currently engaged in high-risk drinking. Increased perspective, integrity, prudence, self-regulation, and spirituality in particular are expected to moderate consequences, such that students high in these strengths will experience fewer negative consequences even if they do not expunge high-risk drinking.

METHODS

Procedures

Participants volunteered to complete anonymous paper assessments in exchange for extra credit in their psychology course. Participants signed informed consent documents when they arrived for survey completion. The University Human Subjects Review Board reviewed and approved all procedures prior to implementation.

Participants

Four hundred and twenty-five undergraduate volunteers completed the surveys. Participant ages were reported as 18 (49%), 19 (28%), 20 (14%), 21 (5%), and 22–26 (4%), indicating the majority of students (91%) were under the legal drinking age of 21. Approximately 69% of the sample identified as female, and 98% identified as heterosexual. Ethnic distribution was primarily White/Caucasian (52%) and Asian/Pacific Islander (34%), followed by Other/Multi-Ethnic (8%), Hispanic/Latino (3%), Black/African American (1%), and Native American/American Indian (1%). This distribution is similar to Undergraduate enrollment at this university. The majority of students were Freshmen (56%), followed by Sophomores (24%), Juniors (16%), and Seniors (4%). The majority of students had used alcohol at least once (90%), and 77% of those who had consumed alcohol drank at least 1 drink in the past month.

Measures

All measures were self-report and were selected based on adequate validity and reliability in prior studies with college students and/or for comparability with similar studies. Demographic variables collected included sex and weight to calculate approximate blood alcohol level (BAL), age, race/ethnicity, year in school, current grade point average, housing situation, sports/clubs affiliation, volunteer status, and current leadership roles.

Character Strengths and Virtues—The primary measure was the Values In Action (VIA) Classification of Character Strength and Virtues (CCSV).¹ Permission was obtained to include this 240-item assessment of 24 character strengths comprising the 6 core virtues described above. Items include statements like “I find the world a very interesting place,” and “I never quit a task before it is done,” which are rated on a 5-point Likert scale ranging from “Very Much Unlike Me” to “Very Much Like Me.” Scores were obtained for each virtue by using the mean total of each strength included in that heading. The individual scales all have alphas greater than .70 and test-retest correlations are also higher than .70.¹

This measure has consistent reliability and validity when compared with adolescents⁵⁸ as well as in international studies^{59,60}. Consistent with prior research, the internal consistency of each subscale in the current study exceeded $\alpha = .70$ (Wisdom $\alpha = .82$, Courage $\alpha = .79$, Humanity $\alpha = .77$, Justice $\alpha = .88$, Temperance $\alpha = .72$, Transcendence $\alpha = .78$).

Drinking Assessments—A modification of the Daily Drinking Questionnaire (DDQ)⁶¹ was used to measure average number of standard drinks for each day of the week over the last 3 months as well as the daily duration (inclusion of duration was the modification of the DDQ for this study), allowing for the computation of estimates of BAL. Prior research has supported the accuracy of self-report drinking measures in the college population.^{62,63} Calculations of BAL allowed for identification of high-risk drinkers (greater than .08 BAL), whereas level of risk was assessed with the Alcohol Use Disorders Identification Test (AUDIT).^{64,65} The AUDIT consists of 10 questions regarding amount and frequency of drinking, dependence, and related problems ($\alpha = .84$ in the current sample). Questions include “How often do you have six or more drinks on one occasion?” measured in a range of 0 (Never) to 4 (Daily or Almost Daily). Although many high-risk drinkers were also classified as heavy drinkers, the distinction was very important for this study. Because we sought to identify the independent relationships between the core virtues and both drinking levels and consequences/risk, inclusion of both measures afforded additional refinement of the relationships.

Drinking Consequences—Problems associated with alcohol use were measured through the Young Adult Alcohol Problem Screening Test (YAAPST).⁶⁶ It assesses negative consequences associated with heavy drinking over the past 12 months with questions such as “Have you ever driven a car when you knew you had too much to drink?” All questions have a low range of 0 (No, Never), with upper ranges varying depending on the severity of the consequence and differentiated by whether the consequence occurred within the past year. Internal consistency in the present sample was $\alpha = .86$.

RESULTS

All variables were screened for missing data, outliers, coding errors, and univariate normality. Frequency tables revealed missing data in random cases, which were computed using a mean-based program. Any coding errors identified through outlier analysis were corrected, and all other outliers were within expected ranges. Distribution was within acceptable limits for all continuous variables.

Next, peak BAC was calculated using an algorithm based on highest drinks and time frame reported on the DDQ. Eleven participants were excluded based on a reported BAC well above the lethal limit (greater than 0.45%). All 11 respondents were female, but did not differ significantly from other participants on other measures. Virtue scores were computed by averaging the sum of each strength mean.

Virtue scores were compared between students reporting alcohol use within the past month and those who had not consumed alcohol. Using a Bonferroni-adjusted alpha of .008 (.05/6), 3 of the 6 virtues were significantly higher in non-drinkers (see Table 1): justice ($t(412) = 3.43, p = .001$), temperance ($t(412) = 4.77, p < .001$), and transcendence ($t(412) = 3.36, p = .001$). Wisdom, courage, and humanity did not differ significantly between the 2 groups ($p > .008$).

We then compared virtue scores between high-risk drinkers ($n = 203$) and other drinkers ($n = 168$). “High-risk” drinking, as identified by this study, consisted of participants with a score of 8 or higher on the AUDIT.⁶⁴ For these analyses, we differentiated *high-risk* (which

includes factors of drinking quantity and frequency as well as consequences) from *heavy drinkers*, who will be discussed below related to the moderation analyses. Participants who had never tried alcohol were excluded from these analyses. Independent samples tests evaluating high-risk drinkers and virtues indicated that wisdom, courage, and humanity were again not significant ($p > .25$). Justice ($p = .01$) and transcendence ($p = .02$) only neared the Bonferroni-adjusted alpha of $p < .008$, with low-risk drinkers indicating somewhat higher scores on both virtues. Temperance was again significant, with high-risk drinkers showing significantly lower scores on temperance ($M = 3.33$, $SD = .41$) than those below the threshold ($M = 3.56$, $SD = .41$; $t(369) = 5.47$, $p < .001$).

A Pearson correlation was performed between each virtue and peak BAC, retaining the Bonferroni-adjusted alpha of .008 (.05/6). The correlation between temperance and peak BAC was significant ($r = -.19$, $p < .001$), whereas the remaining 5 virtues did not approach significance ($p > .20$).

Moderation analyses were then conducted^{67,68} to assess the potential relationship between virtue scores and negative consequences in heavier drinkers. A review of the data suggested the AUDIT cut-off of 8 included some individuals with low peak BAC levels and excluded some individuals with relatively higher BAC levels, as this measure includes both drinking behaviors and consequences. Based on this interpretation, lighter drinkers were instead identified as those reporting a peak BAC of less than .08% and were excluded from these analyses. The remaining 244 participants were included regardless of AUDIT score.

Retaining the Bonferroni-adjusted alpha of .008 (.05/6), simultaneous multiple regressions of peak BAC, virtue, and the peak BAC $\times$ virtue product vector were run with consequences reported within the past 12 months as the criterion variable. Each overall regression score was significant at $p < .001$. No main or interaction effects were noted except in the temperance regression where the temperance $\times$ peak BAC interaction was significant ($b = -15.03$, $\beta = -1.27$, $t(242) = -2.71$, $p = .007$). We then split the participants into high/low-transcendence groups based on scores below versus at or above the mean. Results indicated that although negative consequences were positively correlated with BAC scores for all respondents, those with low transcendence scores experienced significantly greater consequences as BAC increased. In other words, high transcendence was associated with fewer negative consequences even at high BAC levels.

COMMENT

This empirical study sought to identify links between the fields of addictive behaviors and positive psychology. Although prior research has investigated lack of specific strengths as potential risk factors, few have sought to identify protective personality characteristics and virtues that are associated with less risky behaviors and outcomes.

The results of this study indicate that temperance is associated with abstinence, lower-risk drinking, lower blood alcohol levels, and fewer consequences even among heavy drinkers. Further research is needed to distinguish the relationship of individual strengths and specific outcomes, though it could be hypothesized that self-regulation would be closely related to moderation, whereas prudence would be related to abstinence as well as moderation. The roles of forgiveness and humility should also be differentiated to allow for maximum benefit and effectiveness in interventions.

Additionally, because transcendence and justice were related to abstinence but were not related to risk, BAC, or consequences after initiation, further research could explore those relationships. Given the associations of strengths and virtues with lower drinking amounts

and consequences, future research could explore how to integrate these into existing alcohol intervention curriculum.

There are several implications from these empirical findings for those in health education (or in other positions in which prevention or intervention efforts are delivered in a college setting). It is possible that students not receptive to prevention messages focusing exclusively on substances could be impacted by curriculum addressing virtues (if so, substance use could be indirectly impacted). Of course, pilot studies would be needed to determine whether virtues can be taught in a classroom or workshop setting and, if so, to determine their impact. It appears these empirical findings offer an adjunct to current prevention and intervention models in line with current US health standards.^{6,7}

As colleges continue to examine interventions for students who have violated campus alcohol or drug policy, presence or absence of virtues among mandated students could be of interest in future studies, as could ways to incorporate virtue information. Given the mediating effect of defensiveness on brief interventions with mandated students,⁶⁹ such that higher defensiveness predicts heavier drinking post intervention, the current findings offer a potential alternative to students resistant to traditional interventions.

Pending further empirical exploration, there are immediate options for those working with students. In a brief interaction with a student, assessing virtues (eg, temperance) across domains could provide a clearer picture of potential alcohol use patterns and consequences, including the urgency of further intervention. Such understanding might be particularly useful with students who are less open to talking about substance use behaviors.

Although our study provided an empirical foundation for further exploration in the interactions between virtues and alcohol use in this college student population, further research is warranted regarding some of our null findings. It is surprising that the other 3 virtues of wisdom, courage, and humanity were not significant in any analyses. It is possible our inability to detect differences was related to limitations of this study, especially the low alpha of .008 to retain an overall alpha of .05. It is also possible that specific strengths acted in opposite directions, thereby producing an overall null effect. Further research could investigate the strengths specifically and retain a higher alpha value.

Other limitations of this study included use of a convenience sample that primarily identified as female, Freshman, and either White or Asian-American. Consequently, generalizability to other college students could be limited. Drinking measures were self-report and retrospective, and although each measure has demonstrated sufficient reliability and validity with college students, results should still be interpreted cautiously.

In addition, there are limitations embedded in the virtues and classification itself. Specifically, high correlations between strengths and between virtues, variability of strengths within each virtue, and theoretical rather than statistical inclusion criteria limit interpretation of these results.

Despite these limitations, this study provided a foundation for future research combining positive psychology with risk and health behavior research. There are numerous potential future studies to follow up on these data, including the ones previously mentioned to focus on specific strengths in interventions and thereby test causal relationships. Additional prospective research includes reclassifying the strengths statistically as they relate to health and risk behaviors, and incorporating the most related strengths into existing programs. For example, researchers might explore the feasibility of incorporating a temperance component into an existing brief alcohol intervention. A longitudinal study could then isolate potential changes in the strength due to an intervention, as well as identify whether the baseline virtue

level moderates alcohol outcomes. This study provides preliminary support for the inclusion of temperance components into existing prevention and intervention models, as well as temperance, justice, and transcendence as alternative approaches to early prevention efforts.

There are many potential ways to integrate virtue-based curriculum into existing programs, including a brief discussion on what the virtue looks like in others, how the participants rate their own use of the virtue, experiential activities to identify and strengthen each virtue, and/or case examples of similar individual's decisions and actions dependent on identifying them as high or low on that virtue. Activities like these would contribute to the interactive approach used by many brief interventions, and would generalize beyond alcohol and drug use to other aspects of health and well-being (eg, eating properly, exercise, etc). These strategies could also be implemented independent of any formal intervention aimed at a general increase of health behaviors and decrease of risk behaviors for participants of any age. Although further research will be needed to evaluate the effectiveness and efficacy of any such interventions, there is reason for optimism surrounding the potential impact of the inclusion of information about virtues during screening or assessment, an informal conversation with a student, and a prevention or intervention effort. As colleges and universities seek to uncover "what works" in reducing alcohol use and related consequences by students, it is possible that character virtues could provide an additional piece of an overall prevention puzzle.

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FIGURE 1.
Interaction between peak BAC and temperance in relation to alcohol-related consequences.

TABLE 1
Virtue Mean, Standard Deviation, and Significance Between Drinkers and Nondrinkers

Virtue	<u>Have not drunk</u>		<u>Have drunk</u>		<i>t</i>	<i>df</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Wisdom	3.76	.38	3.67	.41	2.00	412
Courage	3.77	.42	3.70	.42	1.46	412
Humanity	3.99	.37	3.90	.43	1.86	412
Justice	3.94	.43	3.77	.45	3.43*	412
Temperance	3.63	.43	3.41	.40	4.77**	412
Transcendence	3.86	.46	3.68	.48	3.36*	412

Note. *N* = 109 for participants who have not drunk, and *N* = 305 for those who have.

Critical value of Bonferroni-adjusted alpha $p = .008 (.05/6)$.

* $p = .001$;

** $p < .001$.