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How Does the Brief CEOA Match With Self-Generated Expectancies in Mandated Students?

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Abstract

Alcohol expectancies, defined as a person's beliefs about the effects of drinking, can influence alcohol consumption and help predict problem drinking in college students. However, there are concerns that current expectancy measures do not adequately capture mandated student expectations about alcohol use. This study examined the correspondence of 412 self-generated expectancies from mandated students ($n = 64$) to items on the Brief Comprehensive Effects of Alcohol (B-CEOA; Ham, Stewart, Norton, & Hope, 2005). Self-generated expectancies were reviewed by raters who attempted to match each expectancy with a single B-CEOA item based on the qualitative essence of each statement. Most mandated student expectancies were not represented by the B-CEOA. All expectancies were then classified into 6 categories based on themes and categories from the alcohol expectancy literature. Mandated student expectancies emphasized the physiological aspects of drinking, whereas the B-CEOA assesses expectancies about intrapersonal factors. The findings suggest the B-CEOA may exclude alcohol expectancies that are important and relevant to this population. Self-generated alcohol expectancies from the target population should be considered when developing or administering expectancy questionnaires.

Keywords

alcohol; alcohol expectancies; college alcohol beliefs; college student drinking; mandated student

Contributors

Authors Colleen Peterson and Brian Borsari designed the study and wrote the protocol. Author Colleen Peterson conducted literature searches and provided summaries of previous research studies. Author Colleen Peterson conducted the statistical analysis. Author Colleen Peterson wrote the first draft of the manuscript and all authors contributed to and have approved the final manuscript.

Conflict of Interest

All authors declare that they have no conflicts of interest.

1. Introduction

Alcohol expectancies are defined as an individual's beliefs regarding the effects of drinking (Fromme, Stroot, & Kaplan, 1993; Leigh & Stacy, 1993). Expectancies have been shown to both shape and predict individuals' drinking behaviors (Burden & Maisto, 2000; Christiansen, Smith, Roehling, & Goldman, 1989; Ham, Zamboanga, Olthuis, Casner, & Bui, 2010). However, there is debate about whether to capture personal expectancies through standardized or self-generated measures (Burden & Maisto, 2000; Noar, LaForge, Maddock, & Wood, 2003; Zamboanga, 2006). In addition, measures were created with volunteer students who tend to drink less heavily than mandated students (i.e. students required to receive an intervention after violating campus alcohol policies, see Barnett, et al., 2004).

The current project compared self-generated expectancies produced by mandated college students to items on the Brief Comprehensive Effects of Alcohol (B-CEOA; Ham, et al., 2005). The B-CEOA is commonly used in brief alcohol interventions for heavy drinking college students (e.g., Brief Alcohol Screening and Intervention for College Students; Dimeff, Baer, Kivlahan, & Marlatt, 1999) to assess and discuss mandated students' alcohol beliefs (e.g., Barnett, Murphy, Colby, & Monti, 2007; Borsari, et al., in press). The B-CEOA consists of 15 items representing both positive and negative expectancies (see Table 1) and was developed by extracting items from the original CEOA with the highest loadings (Fromme, et al., 1993; Ham, et al., 2005).

We conducted two distinct content comparisons. First, to gauge the overlap between the two lists, raters reviewed each self-generated expectancy to determine if it matched qualitatively to any item found on the B-CEOA. Second, the self-generated expectancy list was examined for themes and grouped into explicit factors to evaluate whether the overall focal points of the students' and B-CEOA expectancies diverge. We also explored the summation of the students' positive and negative expectancies.

2. Method

2.1 Participants and Recruitment

This project is a secondary data analysis from a multi-site study implementing brief motivational interventions with mandated students (see Borsari & Carey, 2005). Eligibility criteria consisted of scoring 10 or more on the Alcohol Use Disorders Identification Test (AUDIT; WHO Brief Intervention Study Group, 1996) and/or 2 or more binge drinking episodes in the past 30 days. All students who participated in the study reported 2 or more binge drinking episodes, and 48% reported a score of 10 or higher on the AUDIT ($M = 7.5$, $SD = 4.3$).

2.2 Procedure

Sixty four participants (82% male, 92% Caucasian, 78% freshmen, mean age 19 years old) completed paper and pencil baseline, 3- and 6-month expectancy assessments at the research offices. Participants could write additional expectancies at each follow-up. Expectancies from the students' final assessment were reviewed in this study. All study procedures were approved by the University IRB.

2.3 Measures

2.3.1 Personal expectancy measure—This open-ended measure required students to produce a personalized list of beliefs about the effects of alcohol (Leigh & Stacy, 1994). The directions specified, "On the following lines, we would like you to please list as many

outcomes or effects (positive and negative) as you can think of that you associate with alcohol use." Participants could provide up to 10 expectancies and rate them on 6-point scales: (a) the likelihood of its occurrence, (b) its valence (on a scale from −3 to +3, with no neutral point), and (c) its personal importance.

2.4 Coding Procedures

2.4.1 Individual expectancy comparison—Three independent raters reviewed the students' self-generated expectancies to determine if the statements matched an item on the B-CEOA. Because the students' statements rarely aligned perfectly with the B-CEOA items, the raters were given *a priori* instructions. First, if the general meaning of the expectancy was deemed to be the same by the rater, the statements were counted as having been covered by the B-CEOA (e.g., to a rater "get into fights" would mean the same as "I would act aggressively"). Second, the raters were instructed not to read into the meaning of a participant's statement. That is, raters could not be certain whether the student's perception of how they 'get crazy' would align with the B-CEOA items (e.g., "I would be loud, boisterous, or noisy").

Following the instructions, raters coded whether statements were similar to an item on the B-CEOA. Raters picked the one B-CEOA item the expectancy best represented and assigned it that particular B-CEOA code. If the expectancy could not justly fit under any of the items, the raters coded it as 'other'. When codes were in disagreement, the statement was categorized by majority consensus of the 3 raters.

2.4.2 Expectancy factor analysis comparison—The self-generated expectancies were compared to the B-CEOA items by classifying all expectancies into 6 factor categories. To do so, the authors used card sorting techniques in combination with knowledge of expectancy factors typically identified in the literature to create the factor categories. Many of the self-generated expectancies corresponded to factors previously found in the expectancy literature (e.g., physiological and interpersonal outcomes). However, since students often reported expectations unique to the college environment (e.g. missing class, getting in trouble with the school), an academic and legal category was created to be more inclusive of their unique experiences. Rather than generate several smaller categories for the low frequency statements, the 'other' category was created to capture the few responses that could not fit into the rest of the factors. Formal definitions of the factors were then created and refined by consensus of the authors, with the final six factors identified as intrapersonal, physiological, sexual, interpersonal, academic and legal, and other outcomes of drinking alcohol. Next, the self-generated expectancies were categorized into those 6 factors by three independent raters who were not part of the factor definition process. Finally, the fifteen items of the B-CEOA were categorized using those same 6 factors.

2.5 Analysis Plan

First, we established rater reliability of our expectancy codes and category groupings by calculating percent agreement and Kappa reliability. Second, we compared how the self-generated items correspond to the B-CEOA items by reporting the degree of overlap between the two lists. Third, we compared the percentage of each list (self-generated and the B-CEOA) that pertained to each factor category. Lastly, in exploratory analyses, we determined the valence of the self-generated expectancies by reviewing participants' own evaluations as recorded in the personal expectancy measure.

3. Results

3.1 Individual expectancy classification rater agreement

Because of the complexity involved in the coding scheme, the level of simple agreement between raters was calculated (number of agreements divided by the number of coding decisions). Overall agreement on the coding of the self-generated items was good, and ranged from 76% to 86%.

3.2 B-CEOA factor analysis classification rater agreement

Three hundred and twenty-eight (79.6%) expectancy categorizations were unanimous and 79 (19.1%) had 2 of 3 raters agree. For the remaining 5 (1.3%) for which there was no agreement, further discussion ensued among the co-authors, and final coding was determined by majority consensus. Using Kappa Reliability analyses, the average agreement on the factor was .82 (range of .80–.83, indicative of outstanding agreement; Landis & Koch, 1977). The B-CEOA items were categorized with 100% agreement between raters.

3.3 Self-generated Expectancies Compared to the Brief CEOA Items

3.3.1 Individual expectancy classification—In all, 64 participants generated 412 individual expectancy statements. As identified in Table 1, 74% of the participants' self-generated statements had no corresponding item on the B-CEOA. Of the statements that did match with a B-CEOA item, 9% of the self-generated statements fell within the parameters of "I would act sociable" with expectancies like "meet new people" and "more friendly". The next highest B-CEOA item that accounted for the self-generated statements was "I would act aggressively", which matched approximately 7% (e.g., "fight with girlfriend", "fight or argue"). No one said alcohol would make them a "better lover".

Nearly three-quarters of the self-generated expectancies were marked as 'other' because they did not qualitatively match any of the statements in the B-CEOA. These statements varied considerably, ranging from vague sentiments such as "get into trouble" to very specific outcomes such as "be unable to rely on designated driver's condition" or "[fail] out of school." Many reported sex as an outcome with statements such as "[hooking] up with someone." Another common theme was the negative physical effects of drinking alcohol (e.g., "throwing up", "alcohol poisoning", and "liver damage").

3.3.2 Factor analysis classification—We summarized the distribution of the self-generated expectancies and the B-CEOA items across the six categories, and then calculated whether the proportion of each factor type on the B-CEOA was similar to the self-generated expectancies of our sample (see Table 2). The participants' self-generated expectancies were primarily concerned with the physiological effects of alcohol consumption, yet only two B-CEOA items represent the physiological aspects of drinking. About half of the B-CEOA items target intrapersonal factors (47%), compared to approximately 19% of self-generated expectancies. Both of the measures reported equivalent amounts of interpersonal expectancies (20% of B-CEOA items, 24% self-generated expectancies).

3.4 Expectancy Valences

Analysis of valence evaluations (positive vs. negative) showed two-thirds of the self-generated expectancies were perceived as negative (268 negative [65%], 144 positive [35%]). The trend persisted at the individual level of data as well. The modal number of positive expectancies for each participant was one at baseline and the 3-month follow-up, and two at the 6-month follow-up. The modal number of negative expectancies was three at baseline and 3-month follow-up; and four at the 6-month follow-up.

4. Discussion

This study compared self-generated expectancies about alcohol use to the items on the Brief CEOA in a sample of mandated college students. One of the more striking results was how the content of self-generated expectancies diverged from the items that comprise the B-CEOA. Specifically, three-quarters of the mandated students' spontaneous expectations of their alcohol use differed from the items represented on the B-CEOA. Evidently, the mandated student population expects more physiological severe outcomes of alcohol use than are captured by the B-CEOA. In contrast, the B-CEOA focuses primarily on intrapersonal items, or the internal state of the participant. Furthermore, approximately two-thirds of the self-generated expectancies were perceived as negative by the students. In previous research, volunteer students participating for class credit had nearly a 1:1 ratio (Leigh & Stacy, 1994). This discrepancy may be indicative of the heavier drinking commonly found in mandated students (Barnett, et al., 2004).

The findings of this study should be considered in the context of some limitations. First, raters conservatively coded the expectancies of the B-CEOA. Second, some items could have been coded into multiple B-CEOA items, but our approach only allowed for one match to a category. Third, the B-CEOA was not given to the participants in this study, precluding a direct comparison of measures. Finally, due to the small sample size, these results may not be generalizable to all mandated students.

In sum, the expectancies listed in the B-CEOA do not align well with what mandated students list extemporaneously as their alcohol beliefs. That said, since the B-CEOA is predictive of drinking behaviors (Ham, et al., 2005), it remains to be determined what additional value, if any, is derived from the self-generated expectancies. It may be that explicit lists of alcohol expectancies are tapping into similar enough representations that precise replicas of what mandated students consider their expectations are not necessary. Indeed, Read and colleagues (2009) suggest it may not be the specific item or expectancy that matters, but its location within a particular dimension (positive/negative valence and sedation/arousal activation) which determines its activation pathway. So, while the items on the B-CEOA are not exactly what the student would say spontaneously, they may map onto predictive dimensions. The limited scope of this qualitative analysis leaves this issue to future research efforts.

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Highlights

- Mandated student self-generated expectancies were qualitatively compared to B-CEOA items
- Approximately 75% of the self-generated expectancies did not match B-CEOA items
- Mandated students generated many items about physiological consequences of drinking
- The B-CEOA focuses more on intrapersonal expectancies
- The B-CEOA may exclude alcohol expectancies that are salient to mandated students

Table 1

Percent of B-CEOA Items Represented by Self-generated Expectancies

B-CEOA	# of items	%
Other	304	74
I would act sociable	39	9
I would act aggressively	28	7
It would be easier to talk to people	10	2
I would be peaceful	5	1
I would feel moody	5	1
I would feel calm	5	1
I would feel clumsy	4	1
I would be loud, boisterous, or noisy	4	1
I would be courageous	2	0
I would take risks	2	0
I would feel dizzy	1	0
I would enjoy sex more	1	0
I would be brave and daring	1	0
I would feel guilty	1	0
I would be a better lover	0	0
Total:	412	

Table 2

Percent of Factors Represented by the B-CEOA and Self-generated Expectancies

B-CEOA	# of items	%	Self-generated	# of items	%
intrapersonal	7	47	intrapersonal	77	19
physiological	2	13	physiological	137	33
sexual	2	13	sexual	21	5
interpersonal	3	20	interpersonal	99	24
academic/legal	0	0	academic/legal	28	7
other	1	6	other	50	12
Total:	15		Total:	412	