Short communication

An experimental test of an alcohol expectancy challenge in mixed gender groups of young heavy drinkers

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Abstract

Several studies have shown that a multisession experiential expectancy challenge successfully reduces positive alcohol expectancies and alcohol use in heavy drinking young men, but this has not been shown for heavy drinking young women. Main aim of this study was to test the effect of a multisession expectancy challenge in mixed gender groups of young heavy drinkers. Twenty-five (11 males) heavy drinking students were randomly assigned to the expectancy challenge or control condition (the challenge was adapted to be more suitable for women). Positive expectancies decreased significantly in the experimental but not in the control group. In the experimental group, positive expectancies decreased significantly more in women than in men, and alcohol use showed a statistical trend in the same direction. These findings are the first to indicate that a multisession expectancy challenge may result in reduced positive expectancies and alcohol consumption in young heavy drinking women. An important next question is whether a single experiential session could be effective because recruitment for a multisession challenge proved difficult, which is problematic for further implementation.

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1. Introduction

Alcohol outcome expectancies (“expectancies”) are anticipated positive or negative effects of drinking alcohol on behaviors, mood, and emotions that are good predictors of
current and prospective alcohol use (Goldman, Del Boca, & Darkes, 1999). One issue in current expectancy research pertains the question how expectancies can be changed, and if so, to what extent such a change causes reduced drinking (Jones, Corbin, & Fromme, 2001). Darkes and Goldman (1993) developed an expectancy challenge procedure in which male social drinkers are brought together in a bar-lab and receive either alcohol or placebo. Social behavior is elicited (playing games) and after this, participants have to guess who received alcohol and who placebo. The identification errors made serve as a starting point to contrast the actual effects of alcohol with the expectancy effects on behavior (placebo effects). This procedure is repeated in a second session, focusing on sexual expectancies. In a third session, the information is recapitulated. Two studies Darkes and Goldman (1993, 1998) showed that young heavy drinking men in the expectancy challenge showed decreased positive expectancies and decreased alcohol consumption, as compared with controls. Both studies involved only men. Jones et al. (2001), concluded in a critical review that replications of Darkes and Goldman’s studies had been unsuccessful. However, all negative replications cited, differed either in the nature of the intervention (information only instead of the original experiential challenge) or in the number of sessions (one instead of three, see Wiers, 2002). One study tested a multiple session experiential challenge in women, and found no change in expectancies or in alcohol use in women treated in a separate group, but in men positive arousal expectancies and alcohol use were changed (Dunn, Lau, & Cruz, 2000). An additional reason to critically test the effect of an expectancy challenge on women was a study by Corbin, McNair, and Carter (2001), who found a significant increase in alcohol consumption in women (not in men) after a single-session information-only challenge.

The present study is the first to examine the effects of the full three-sessions experiential expectancy challenge in a mixed gender group. Further, the present study is the first to examine the effects of an expectancy challenge on positive and negative expectancies for a low and for a high dose of alcohol, and the first experiential challenge study outside North America. We hypothesized that low dose positive expectancies and alcohol use would be reduced in the expectancy challenge and not in the control condition, in men and in women alike.

2. Method

2.1. Participants

Based on a power analysis, our aim was to recruit 50 male and 50 female young heavy drinkers. For 5 months, intensive recruitment efforts were undertaken: e-mails to students, advertisements in student and general newspapers, and the distribution of flyers in local bars and in canteens of a variety of professional education schools. A total of 153 (60 males) people reacted. Their alcohol consumption was screened by a telephone interview (number of drinks on typical Monday, Tuesday, etc.). Unknown to potential participants, the minimum drinking level to be included was 12 standard drinks per week for women and 15 for men. When alcohol use was above this level, further information was given about this “experiment about the effects of alcohol.” Those randomly assigned to the control condition, were
requested to attend two sessions to fill out questionnaires about alcohol and would receive 10. Those randomly assigned to the experimental condition were requested to attend five meetings and would receive 20. All participants were included in a lottery with three prizes of 40. Fifty-six participants (24 women) drank above threshold and were invited to participate. Twenty-five (14 women) agreed. Main reason for not participating was the number of sessions required (in the experimental group). Given these recruitment problems, it was decided to oversample the experimental group (16), to make a comparison possible of the effects of the challenge on men (7) and women (9).

2.2. Measures

Expectancies were measured with two instruments, the Vragenlijst Alcohol Verwachtingen (VAV, Wiers, Hoogeveen, Sergeant, & Gunning, 1997), measuring positive and negative expectancies for a low and for a high dose of alcohol, and the Expectancy Context Questionnaire (ECQ, Darkes & Goldman, 1993), in which participants imagine situations (e.g., relaxing on a beach) and then fill out their expectancies for that situation. We removed two from the original nine situations because assessment took long and was judged boring in a pilot study.

Alcohol use was measured with self-report grids for each day of the past month, based on the timeline follow back method, which was found valid and reliable (Sobell & Sobell, 1990). Participants further filled out an alcohol diary during the 5 weeks of the experiment.

The RAPI (White & Labouvie, 1989) was used to measure alcohol-related problems that adolescents and young adults may experience.

2.3. Procedure

The procedure closely followed the original protocol of Darkes and Goldman (1993) and time schedule (Table 1). Since the protocol was developed for men, we decided to adapt the

Table 1
Design of the study

<table>
<thead>
<tr>
<th>Condition</th>
<th>Pretest</th>
<th>T1 (+1 week)</th>
<th>T2 (+1 week)</th>
<th>T3 (+1 week)</th>
<th>Posttest (+2 weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expectancy challenge</td>
<td>Questionnaires(^a)</td>
<td>Social challenge</td>
<td>Sexual challenge</td>
<td>Recapitulation challenges</td>
<td>Questionnaires(^b)</td>
</tr>
<tr>
<td>Control</td>
<td>Questionnaires(^a)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) During pretest, the following questionnaires were administered to both groups: demographics, Expectancy Context Questionnaire (ECQ, Darkes & Goldman, 1993), Positive and Negative Expectancies for a low and for a high dose of alcohol (VAV, Wiers et al., 1997), One-month retrospective Alcohol Use with a grid and Alcohol-Related Problems (RAPI, White & Labouvie, 1989). A number of other variables were measured in the pretest (similar to Darkes & Goldman, 1993: sensation seeking, family history of alcoholism, and alcohol knowledge) that are not reported in more detail in this brief report due to space limitations. On all of these measures no differences were found between the two groups (\(P > .50\)).

\(^b\) During the posttest, participants again filled out the same questionnaires on alcohol-related expectancies and alcohol use and problems.
protocol for the second experimental session targeting sexual expectancies for use in our mixed gender groups. Everyone received two glasses of vodka-tonic or placebo. The “sexual game” was changed: men had to rate the attractiveness of female movie stars on pictures and in the mean time women had to guess which movie star would be judged most attractive by the men, based on their reactions. The game was then reserved. Next, participants had to guess who drunk alcohol and/or placebo. As in the first session, identification errors were used as a starting point for information contrasting real alcohol effects from expected effects. In this session, the focus in the information part was on gender differences in the effects of alcohol and in the risks associated with heavy alcohol use [based on Brief alcohol screening and intervention for college students (BASICS), Dimeff, Baer, Kivlahan, & Marlatt, 1999].

3. Results

There were no significant differences between the experimental and control group with respect to age ($P>.50$). Controls tended to drink more alcoholic drinks per week (27.6) than participants in the experimental group (21.1), $P=.16$, and to score higher on high dose positive expectancies ($P=.14$). There were no significant differences on other expectancy scales ($P>.35$, see Table 2).

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s α</th>
<th>Exp T0 M</th>
<th>Exp T0 S.D.</th>
<th>Exp T1 M</th>
<th>Exp T1 S.D.</th>
<th>Con T0 M</th>
<th>Con T0 S.D.</th>
<th>Con T1 M</th>
<th>Con T1 S.D.</th>
<th>F-cond (1,23)</th>
<th>F-time (1,23)</th>
<th>F-interact (1,23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECQ Global Positive</td>
<td>.83</td>
<td>109.25</td>
<td>34.48</td>
<td>85.00</td>
<td>47.77</td>
<td>124.44</td>
<td>29.46</td>
<td>116.89</td>
<td>28.90</td>
<td>2.55</td>
<td>8.22**</td>
<td>2.27</td>
</tr>
<tr>
<td>VAV Low Dose Positive</td>
<td>.85</td>
<td>42.88</td>
<td>12.07</td>
<td>40.67</td>
<td>11.99</td>
<td>45.00</td>
<td>9.75</td>
<td>48.22</td>
<td>9.09</td>
<td>1.20</td>
<td>0.12</td>
<td>3.28#</td>
</tr>
<tr>
<td>VAV High Dose Positive</td>
<td>.77</td>
<td>25.69</td>
<td>6.38</td>
<td>24.19</td>
<td>5.43</td>
<td>29.89</td>
<td>5.28</td>
<td>29.78</td>
<td>6.83</td>
<td>5.03*</td>
<td>0.44</td>
<td>0.33</td>
</tr>
<tr>
<td>VAV Low Dose Negative</td>
<td>.67</td>
<td>16.44</td>
<td>4.68</td>
<td>17.81</td>
<td>5.32</td>
<td>15.89</td>
<td>3.76</td>
<td>19.22</td>
<td>4.47</td>
<td>0.06</td>
<td>5.61*</td>
<td>0.97</td>
</tr>
<tr>
<td>VAV High Dose Negative</td>
<td>.79</td>
<td>19.31</td>
<td>5.80</td>
<td>20.62</td>
<td>5.61</td>
<td>18.22</td>
<td>4.52</td>
<td>22.22</td>
<td>6.89</td>
<td>0.01</td>
<td>9.85**</td>
<td>2.52</td>
</tr>
<tr>
<td>Monthly alcohol use</td>
<td>.75</td>
<td>84.56</td>
<td>33.68</td>
<td>68.72</td>
<td>38.80</td>
<td>110.22</td>
<td>53.63</td>
<td>76.33</td>
<td>46.09</td>
<td>1.00</td>
<td>19.51***</td>
<td>2.57</td>
</tr>
<tr>
<td>Alcohol problems (RAPI)</td>
<td>.86</td>
<td>12.56</td>
<td>9.44</td>
<td>13.89</td>
<td>7.94</td>
<td>12.50</td>
<td>9.13</td>
<td>13.00</td>
<td>7.62</td>
<td>0.07</td>
<td>0.14</td>
<td>0.11</td>
</tr>
</tbody>
</table>

Legend: Exp=Experimental group, Con=Control group; ECQ=Expectancy Context Questionnaire (Darkes & Goldman, 1993); VAV=Vragenlijst Alcohol Verwachtingen (Wiers et al., 1997); RAPI=Rutgers Alcohol Problem Index (White & Labouvie, 1989).

* $P<.05$.
** $P<.01$.
*** $P<.001$.
# $P<.05$, one-tailed (only used for the interactions: hypothesised decrease in challenge group).
Table 2 shows the means and the results of the 2 (condition) × 2 (time) mixed ANOVAs for expectancies and alcohol use. In line with our main hypothesis, positive expectancies for a low dose of alcohol decreased in the challenge group, compared with the control group (P = .04, one-tailed), with no effects on positive expectancies for a high dose or on negative expectancies. A similar differential decrease was found on the ECQ at borderline significance (ECQ, P = .07, one-tailed). There was a large reduction in alcohol use, independent of group status (main effect time, P < .001). Other main effects for time were a decrease for global positive expectancies (ECQ, P < .01) and increases in negative expectancies (low dose, P < .05; high dose, P < .01).

To examine gender differences in the effects of the challenge, an additional set of 2 (gender) × 2 (time) mixed ANOVAs was performed including the experimental group only, with the same dependent variables as in Table 2. Significant interactions were found for ECQ global positive expectancies (P = .021), for VAV high dose positive expectancies (P = .029), with women decreasing on both measures (ECQ from 108 to 69, VAV from 26 to 22) and men showing little change (ECQ from 110 to 106, VAV from 25 to 27). A statistical trend indicated that alcohol use decreased stronger in women than in men (P = .067), women changed from 84 to 58 drinks per month, men from 85 to 83. Finally, it was explored how the changes in positive expectancies correlated with the changes in alcohol use. The change in positive expectancies on the ECQ correlated .41 with the change in alcohol use in the experimental group (P = .06, one-tailed), but did not correlate in the control group (−0.22, P > .50).

4. Discussion

The present study is the first to indicate that a multisession experiential expectancy challenge could lead to reduced positive expectancies and alcohol consumption in heavy drinking young women, as has been demonstrated in several studies for heavy drinking young men (Darkes & Goldman, 1993, 1998). However, we did not find significant changes in positive expectancies and alcohol use in the heavy drinking young men. This could indicate that our modification with respect to sexual expectancies was successful for women, but reduced efficacy for men. The results stand in marked contrast with a recent study by Dunn et al. (2000), who found that a multisession experiential challenge reduced positive expectancies and alcohol use in men, but not in women. A first difference between the two studies is that we used mixed gender groups, while Dunn et al. used separate gender groups. Second, we adapted the second session to be more suitable for women. Third, we included a (small) control group, which qualified our finding that both positive expectancies and alcohol use decreased in women in the experimental group: a similar reduction in alcohol consumption was seen in the absence of a decrease in positive expectancies in the control group. The latter finding makes one question the causal role of the change in positive expectancies in the change in drinking (Jones et al., 2001). However, we did find that the two changes correlated in the experimental group and not in the control group. Clearly, all these results should be interpreted with caution, given the small sample size.

Our small sample size was not intentional: it proved very difficult to find heavy drinking students willing to cooperate in a multisession expectancy challenge. This limits the potential
for further implementation. More recently, we found that recruitment was much easier for an extended single session experiential challenge (see Wiers et al., 2003). The challenge for future studies seems to be to develop an effective short expectancy challenge, and to prove beyond reasonable doubt that the change in positive expectancies causes a change in prospective drinking. Further, it could be promising to supplement such a procedure with a motivational interview to increase personally relevant negative expectancies and motivation to change. In conclusion, the present study is the first to indicate that an expectancy challenge could be effective in reducing positive expectancies and alcohol use in young heavy drinking women, as has been shown for heavy drinking young men. However, further studies on the mechanism of change are necessary before further implementation can be begun.

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References


