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Is It More Feeling or Thinking? The Influence of Affective and Cognitive Attitude on Adolescents' Intention to Engage in Binge Drinking

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Previous work has revealed that interventions aiming to reduce adolescent binge drinking commonly focus on cognitive attitudes, but are insufficiently effective in changing binge-drinking intentions. The focus on these cognitive attitudes might be the reason for this insufficient success. That is, other work has revealed that affective attitudes have a stronger influence on binge-drinking intention than cognitive attitudes. However, this relation has so far only been found among traditional college students and pre-vocational school students, therewith neglecting another important population at risk, namely vocational community college students. This study examines whether affective attitudes are also significantly stronger influencers of binge-drinking intentions among vocational community college students. Using a sample of 298 vocational community college students ($M_{\text{age}} = 17.63$), the current study shows that affective attitudes were more strongly related to vocational community college students' intention to engage in binge drinking than cognitive attitudes. This finding indicates that the effectiveness of interventions targeting adolescent binge drinking can be improved by incorporating content elements concerning affective attitudes.

In the Netherlands, binge drinking during adolescence is a serious health problem. Recent statistics show that 31% of adolescents consume on average 5–10 alcoholic units, 19% consumes 11–20 alcoholic units, and 14% consumes more than 20 alcoholic units per weekend (Trimbos Instituut, 2015). Furthermore, it has been well documented that this excessive pattern of alcohol consumption is associated with short- and long-term negative consequences such as unintentional injuries, brain damage, and liver damage (e.g., Rehm et al., 2010) and negative mental outcomes such as depression, stress, and anxiety (e.g., Newbury-Birch et al., 2009). Despite these potentially serious health issues, a considerable number of adolescents engages in binge drinking and continues to do so (e.g., Degenhardt et al., 2013).

These statistics and facts suggest that interventions targeting adolescent binge drinking are insufficiently successful. This latter assumption is supported by a systematic review on the effectiveness of alcohol-preventive interventions among adolescents (Anderson, Chisholm, & Fuhr, 2009). That is, in their review, Anderson and colleagues reported that out of the 59 school-based alcohol-preventive interventions that were assessed, only 6 had a sustained effect on adolescents' alcohol

consumption. Furthermore, although not directly focused at an adolescent crowd, in their meta-analysis on the effectiveness of health campaigns on desirable behavior change, Snyder et al. (2004) found that mediated alcohol campaigns have small measurable effects on people's alcohol consumption ($r^- = .09$).

A possible explanation for this insufficient success might be that alcohol-preventive interventions target determinants (e.g., attitudes) that are weakly or not related to adolescents' intention to engage in binge drinking and in turn subsequent binge-drinking behavior. Therefore, to improve future alcohol-preventive interventions, it is important to further examine the relation between determinants of binge drinking and the intention to engage in binge drinking.

Attitude is perceived to be an important determinant of intention. Attitude is commonly defined as a collection of judgments concerning an object or behavior, which helps people structuring their complicated social environment (e.g., Fazio, 1986). Attitude is suggested to be influenced both by emotions that the behavior evokes and a more rational evaluation of the behavior's consequences (e.g., Lavine, Thomsen, Zanna, & Borgida, 1998; Zanna & Rempel, 1988). The attitudinal component that is influenced by emotions is commonly referred to as affective attitude, whereas the attitude that is considered to be a rational evaluation of a behavior is commonly referred to as cognitive attitude. As to affective attitude, a person's attitude might be shaped by feelings and emotions that are evoked by the behavior. For example, that binge drinking results into a more (less) pleasant emotional state of mind. As to the cognitive

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attitude, a person's attitude might be based primarily upon the positive and negative instrumental expectancies concerning a behavior. For example, that binge drinking results in liver damage. Another difference between both attitudinal components is that the affective attitude is mostly based on short-term behavioral expectancies whereas the cognitive attitude is primarily based on long-term behavioral expectancies. That is, expectancies related to the affective attitude can occur instantly, such as experiencing feelings of joy or disgust when thinking about performing the behavior. On the other hand, expectancies related to the cognitive attitude, often do not occur instantly, such as liver damage and deteriorated memory.

Nevertheless the distinction between the affective and the cognitive attitude, alcohol-preventive interventions often aim to prevent excessive alcohol intake by informing the target group about the negative consequences of drinking alcohol (Paglia & Room, 1999; Room, Babor, & Rehm, 2005), which appeals particularly to cognitive attitude, for example, by communicating that too much alcohol intake may lead to cognitive (e.g., brain damage) and motor impairment (e.g., loss of physical function), expectancies that elicit few immediate emotions in adolescents. This focus on the cognitive attitude might be an explanation for the earlier mentioned insufficient effectiveness of alcohol-preventive interventions. This latter suggestion is supported by a study from Lawton, Conner, and McEachan (2009), which, at least in the context of health behavior, shows a difference between the effects of affective and cognitive attitude. They revealed that the affective attitude was found to be a stronger predictor of health-risk behaviors, such as binge drinking, whereas cognitive attitude was found to be a stronger predictor of health-promoting behaviors, such as vitamin use. This finding by Lawton and colleagues indicates that when alcohol-preventive interventions focus on targeting the affective attitude, they might become more successful in changing adolescents' intention to engage in binge drinking, and in turn their subsequent binge-drinking behavior.

While there is evidence that affective attitude has a more profound impact on pre-vocational school students (Zebregs, 2016) and traditional college students' (Keer, Van Den Putte, & Neijens, 2010; Trafimow et al., 2004) binge-drinking intentions, the relations of the different attitudes with the intention to engage in binge drinking have not yet been examined for adolescents who are enrolled in a vocational community college, which is remarkable for several reasons. First, it has been demonstrated that vocational community college students experience many of the same alcohol-related problems (e.g., aggression and cognitive impairment) as traditional college students do (Coll, 1999). Second, it has been found that vocational community college students who are frequent binge drinking, experience substantial more job (e.g., arriving too late because of alcohol misuse) and legal (e.g., caught drunk driving) problems compared to their fellow students who do not binge drink (Sheffield, Darkes, Del Boca, & Goldman, 2005). Third, previous work has revealed that blue-collar workers reported significantly higher levels of binge drinking than white collar workers (e.g., Lynch, Kaplan, & Salonen, 1997). Because a substantial amount of vocational community college students, such as students who are enrolled in vocational-technical

education, are being educated to work in the blue-collar trades (Mupinga & Livesay, 2004), it is important to examine their binge-drinking attitudes. Therefore, this study examined and compared the influence of affective attitude and cognitive attitude to determine which attitude component is the strongest influencer of vocational community college students' intentions to engage in binge drinking, therewith providing insight in which attitude component is the most appropriate to incorporate in alcohol-preventive interventions targeting vocational community college students.

Methods

The current study's sample contained 298 (185 females; $M_{\text{age}} = 17.63$; $SD_{\text{age}} = 1.84$) first and second year vocational community college students from the Netherlands. Members of our sample were enrolled in studies such as: web design, information technology, pediatrics, and healthcare. The sample was recruited via their schools. The ethical committee of the first authors' affiliation approved procedures. The attitudinal, intentional, and the behavioral measurements were derived from previous binge-drinking behavior studies by Hendriks, de Bruijn, and van den Putte (2012), Keer et al. (2010), and Zebregs (2016).

All attitudinal items were measured using a five-point semantic differential scale, coded from 1 to 5. The statement: "If I would consume five or more alcoholic drinks on one single day this coming month, this would be..." preceded each item. Affective attitude was measured using the items *not convivial-conivial*, *unpleasant-pleasant*, and *unpleasurable-pleasurable* ($EV = 2.64$, $\alpha = 0.93$, $M = 3.29$, $SD = 1.01$), cognitive attitude using the items *unwise-wise*, *unsafe-safe*, *unhealthy-healthy* ($EV = 2.36$, $\alpha = 0.86$, $M = 2.33$, $SD = 0.80$). Scale scores were computed by averaging item scores.

Three statements with a five-point scale (from 1 = *no, definitely not* to 5 = *yes, definitely*) measured intention to drink alcohol. The statement "The coming month..." preceded each item: (1) I plan, (2) I think I am going, and (3) I want to drink five or more alcoholic consumptions one single day at least once". A scale score was computed by averaging item scores ($EV = 2.87$, $\alpha = 0.98$, $M = 2.75$, $SD = 1.36$).

Because a correlation analysis revealed that past binge-drinking behavior and gender were positively correlated with the main variables cognitive attitude, affective attitude, and intention, we performed our analyses with past binge-drinking behavior and gender as control variables. Past binge-drinking behavior was measured using a closed-ended question asking students how often they engaged in binge drinking. The six response categories were: *I never did that before* (24,7%), *once a year* (4,7%), *once every few months* (11,4%), *once a month* (12,9%), *once a week* (10,5%), *a few times a week* (6,9%). A significant amount, 24,7%, of our sample reported that they never have engaged binge drinking, 4,7% reported to engage in binge drinking once a year, 11,4% engages in heavy drinking once every few months, 12,9% reported to engage in binge drinking once a month, whereas 10,5% drinks heavily once a week and 6,9% engages in excessive drinking multiple times a week.

We analysed our data by performing linear regression analysis with cognitive attitude and affective attitude as independent variables, the intention to engage in binge drinking as dependent variable, and gender and past binge-drinking behavior as control variables.

Results

Linear regression analyses showed that cognitive attitude, $\beta = .26, p < .001, 95\% \text{ CI } [0.19, 0.34]$ and affective attitude, $\beta = .45, p < .001, 95\% \text{ CI } [0.39, 0.52]$ were significantly related to the behavioral intention to engage in binge drinking. Indicating that both attitude components positively influenced vocational community students' intentions to engage in binge drinking. In determining whether these beta coefficients significantly differed, we looked whether their confidence intervals showed overlap. The results showed that there is no overlap between the confidence intervals of cognitive and affective attitude. Thus, based on its higher beta coefficient, we concluded that affective attitude was a significantly stronger influencer and predictor of vocational community college students' intention to engage in binge drinking than cognitive attitude. In addition, although correlated with our main measures (affective attitude, cognitive attitude, and intention), once entered in the regression model, control variables gender and past binge-drinking behavior did not appear to be significant predictors of vocational community students' intention to engage in binge drinking.

Discussion

Our study aims to examine the influence of affective and cognitive attitude on vocational community college students' intention to engage in binge drinking, therewith providing the insight in which attitudinal component is the most appropriate to incorporate in future alcohol-preventive interventions targeting these vocational community college students' binge drinking. Our results show that both affective and cognitive attitude significantly influence vocational community college students' intention to engage in binge drinking. However, a higher beta value and non-overlapping confidence intervals show that affective attitude is the significantly stronger influencer of vocational community college students' intentions to engage in binge drinking. Our results are in line with previous research demonstrating affective attitude to be a stronger influencer of pre-vocational school students' (Zebregs, 2016) and traditional college students' (Keer et al., 2010) intention to engage in binge drinking, therewith stressing the importance of affective attitude of adolescent binge drinking. Furthermore, taking into account that alcohol-preventive interventions commonly contain cognitive attitudinal content elements (Paglia & Room, 1999; Room et al., 2005), the results of our study support the potential explanation that the insufficient success alcohol-preventive interventions targeting vocational community college students, lies in the fact that the relation between cognitive attitude and intention is significantly weaker than the relationship between affective attitude and intention.

Now that it is shown that affective attitude is a stronger influencer of vocational community college students' intentions to engage in binge drinking, two questions remain: why is it that affective attitude is a more relevant predictor of vocational community college students' binge drinking than cognitive attitude? And how can developers of alcohol-preventive interventions successfully target affective attitude? The answer to the first question may be explained by the concepts of attitudinal ambivalence and alcohol expectancies. Attitudinal ambivalence is a state of mind in which an individual has mixed feelings toward an object or behavior (e.g., Gardner, 1987). Alcohol expectancies concern a person's expectancies about the consequences of an action (Bandura, 1977). In the context of the current study, attitudinal ambivalence occurs when vocational community college students feel ambivalent about engaging in binge-drinking behavior because they simultaneously experience positive and negative cognitive and/or affective expectancies concerning binge drinking. For instance, one may believe that binge drinking makes one feel more relaxed, thus an expectancy of an immediate positive emotion which is related to affective attitude. On the other hand, one may also believe that binge drinking results in negative health consequences in the long run (such as liver damage) related to cognitive attitude. Thus, if positive expectancies of alcohol consumption are mainly affective in nature, and negative consequences of alcohol consumption are mainly cognitive in nature, a divergence between affective and cognitive attitude may occur, resulting in a conflicted state of mind (the struggle between desire and reason). To solve this internal conflict between two opposing attitudes, one component of attitude usually becomes a stronger (weaker) predictor of behavioral intention and subsequent behavior. In the context of binge drinking, it appears that the affective attitudinal component becomes a stronger predictor of the intention to engage in binge drinking than the cognitive attitudinal component, probably because for most vocational community college students the positive affective short-term consequences are more relevant than the long-term negative consequences. The latter is supported by a study on ambivalent attitudes and various health behaviors from Lawton et al. (2009). That is, Lawton and colleagues revealed that, because of the divergence between affective and cognitive attitude, affective attitude was found to be a stronger predictor of health-risk behaviors, such as binge drinking, whereas cognitive attitude was found to be a stronger predictor of health-promoting behaviors, such as vitamin use. It appears that, for health-risk behaviors, affective consequences, and therewith affective attitudes are more positive than cognitive attitudes and that for health-promoting behaviors, cognitive consequences, and therewith attitudes are more positive than affective attitudes (Loewenstein, Weber, Hsee, & Welch, 2001).

Taken together, the findings suggest that targeting the affective attitude is a more promising strategy in preventing or reducing vocational community college students' binge-drinking intentions than the cognitive attitude. Fishbein and Yzer (2003) recommend three strategies can be used to target the affective attitude. The first strategy is priming, that is reinforcing associations between negative feelings and binge drinking that

vocational community college students already hold in their memory. Priming might be a fruitful strategy when the majority of vocational community college students already associate binge drinking with a particular negative feeling, but when this negative feeling is not promptly activated when vocational community college students are asked about binge drinking. Reinforcing the association between the negative feeling and binge drinking will increase the likelihood of the negative feeling to be activated when vocational community college students are confronted with binge drinking. For example, one might prime the anticipated regret regarding a hang-over, a less than optimal performance during an activity (e.g., performing during a sports game or work performance) the next day, or undesired and potentially unhealthy sexual activities. However, it is important to find what potential negative consequences are relevant for the target group. Before priming can be applied as a strategy for alcohol-preventive interventions, it is important to identify vocational community college students' existing negative feelings about binge drinking. The second strategy is to create new associations between binge drinking and negative feelings that adolescents do not yet hold (Fishbein & Yzer, 2003). This strategy is more challenging than priming, because, unlike priming, an association between binge drinking and a negative feeling has to be created. Before this strategy can be applied, similar to priming, it is important to identify vocational community college students' existing negative feelings about binge drinking and inform them about negative feelings that do not yet exist, or which are not yet present in their set of beliefs concerning binge drinking. The latter can for instance be done by developing an intervention that contains affective beliefs with regard to binge drinking which are not held by vocational community college students. In doing so, vocational community college students are essentially being taught new negative affective beliefs (feelings) toward binge drinking. The third and final strategy is to convince vocational community college students that the positive feelings that they associate with binge drinking are false or at least less positive than they perceive. This strategy can be realised by developing an intervention in which the positive feelings about binge drinking are being counter argued. However, changing existing associations is difficult and failure to do so may cause a boomerang effect by priming the existence of the association and bringing it top-of-mind.

In conclusion, our study is the first to show that affective attitude is stronger predictor of vocational community college students' intention to engage in binge drinking than cognitive attitude. It seems that vocational community college students predominantly base their intentions to engage in binge drinking rather on their feelings (i.e., affective attitudes) than on their thinking (e.g., cognitive attitudes). Therefore, we suggest that alcohol-preventive interventions that aim to reduce and/or prevent vocational community college students' intentions to engage in binge drinking should incorporate content elements that are more related to affective attitude than to cognitive attitude. Furthermore, because the affective attitude is mostly related to positive feelings toward alcohol use, we suggest that developers of alcohol-preventive interventions focus on changing the affective attitude into a more negative direction towards binge drinking.

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