Is it how we tell them about alcohol? The role of presentation formats in health education materials for lower educated students
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Chapter 4: The influence of affect and cognition on adolescents’ intention to drink alcohol

Abstract

Underage drinking has serious negative short-term and long-term consequences. Interventions aiming to reduce underage drinking often target cognitive attitude, but fail to influence behavior of behavioral intention. This failure may suggest that cognitive attitude is not, or only weakly, related to behavior. Attitude also has an affective and overall component that may have stronger relations with behavior. The relations of the three attitude components with intention differ across behaviors and populations, and are not yet examined for adolescents’ intention to drink alcohol. This study examines these relations to find the most promising component of attitude to target. This study used a sample of 324 students (age 11-14) from the lowest level of the Dutch secondary education system. Analyses were conducted through path modeling. Results showed that affective attitude had a strong significant influence on intention, while cognitive and overall attitude had no effect. The findings suggest that the effectiveness of interventions aiming to reduce adolescents’ underage drinking could be increased by targeting affective attitude instead cognitive attitude, which is currently a common strategy.

This chapter is submitted as:
Introduction

Underage drinking has been recognized as a problem that may cause serious negative short-term and long-term consequences (Masten, Faden, & Zucker, 2008). Therefore, there is a need for effective prevention programs targeting underage drinking. Several existing interventions however are found to be ineffective (e.g., Bodin & Strandberg, 2011; Malmberg et al., 2014). To be effective, interventions need to target determinants that are strongly related to behavior. One possible explanation for the failure of existing interventions may be that they target determinants that have no or only a weak influence on behavior. As such, it appears to be important to reconsider the determinants that should be targeted in underage drinking interventions. However, adolescents that are targeted in preventive underage drinking interventions typically do not yet consume alcohol (Kepper, Monshouwer, Van Dorsselaer, & Vollebergh, 2011). Therefore, determinants of intention to drink alcohol are a more appropriate to focus on (Fishbein & Cappella, 2006).

Attitude is perceived to be an important determinant of intention. Attitude is however suggested to consist of three components, namely affective attitude, cognitive attitude, and overall attitude (Keer, Van den Putte, & Neijens, 2010). Affective attitude is an evaluation that is particularly based on feelings, cognitive attitude is an evaluation based on cognitions, and overall attitude indicates a global assessment of the behavior (e.g., negative/positive or bad/good. Haddock & Maio, 2007; Keer et al., 2010). All three components may influence behavioral intention directly, but the effect of cognitive and affective attitude can also be (partially) mediated through overall attitude. The relative strength of these relations differs across behaviors and populations. Previous research examined drinking related behaviors amongst college students and found strong direct effects of affective attitude and small indirect effects of both cognitive and affective attitude through overall evaluation on intention (Keer et al., 2010).

Different strategies are required for targeting cognitive and affective attitude. Cognitive attitude is considered to be particularly susceptible to factual appeals about the positive or negative consequences a particular behavior could have and information about the likelihood that these consequences occur (Fabrigar & Petty, 1999; Zebregs, Van den Putte, Neijens, & De Graaf, 2015). An example of such an appeal for underage drinking is information about how alcohol may have a negative impact on the development of adolescents’ brains. Affective attitude is more susceptible to emotional appeals that help to relate positive or negative feelings to the targeted behavior (Fabrigar & Petty, 1999; Zebregs et al.,...
2015). For example, an intervention targeting affective attitude towards drinking alcohol may include a vivid story about a person having a severe hangover and describe the negative feeling involved with this experience.

Existing interventions often aim to prevent underage drinking by informing the target group about the negative consequences of drinking alcohol (Paglia & Room, 1999), which appeals particularly to cognitive attitude. However, if affective attitude is found to be a stronger predictor of intention, this may not be the most promising strategy. The relations of the different attitudes are not yet examined for adolescents’ intention to drink alcohol. Therefore, this study explores the influences of the different attitude components to determine which component is most promising to target.

Method

The sample consisted of 324 Dutch pre-vocational school students from the seventh grade who were recruited via their schools. This population was selected, because underage drinking is particularly prevalent within this target group (Kepper et al., 2011).

All attitudinal items were measured using a four-point semantic differential scale (running from 1 to 4) preceded by the sentence “I find alcohol drinking...” Affective attitude was measured using the items unenjoyable-enjoyable and unpleasant-pleasant (r = .76; M = 1.87; SD = .75), cognitive attitude using the items unwise-wise and unhealthy-healthy (r = .50; M = 1.60; SD = .53), and overall attitude using the items bad-good and negative-positive (r = .60; M = 1.75; SD = .57). Scale scores were computed by averaging item scores.

Three statements with a four-point scale (from 1 = no, certainly not to 4 = yes, certainly) measured intention to drink alcohol: (1) “I plan to drink alcohol”; (2) “I plan to drink alcohol in the upcoming month”; (3) “I plan to drink alcohol in the upcoming year”. A scale score for was computed by averaging these items (α = .64; M = 1.62; SD = .55).

In our analyses we controlled for past behavior, measured using a closed-ended question asking students how often they consumed alcohol. Response categories were: Never, 1-3 days per year, 4-10 days per year, 1 day per month, 2-3 days per month, 1 day per week, and more than 1 day per week.
The ethical committee of the first author’s affiliation institution approved procedures.

Data was analyzed through a path model using the maximum likelihood estimation procedure (AMOS 21). To assess model fit we applied the following criteria: (1) $\chi^2$ to be non-significant, (2) CFI was required to be .90 or greater, and (3) RMSEA was required to be smaller than or equal to .06 (Hu & Bentler, 1999). To test indirect effects we applied a maximum likelihood bootstrapping procedure with 2000 resamples and bias corrected 95% confidence intervals.

**Figure 4.1** Path model testing the effects of cognitive, affective, and overall attitude on intention to drink alcohol while controlling for past behavior.

![Path model](image)

**Results**

The sample was between 11 and 14 years old ($M = 12.34; SD = .52$), and contained slightly more girls (54.9%) than boys (45.1%). Most respondents were born in The Netherlands (96.3%) and spoke mainly Dutch at home (90.1%). Most common religions were Catholic (29.8%) and Islam (3.8%); the majority of the respondents had no religion (62.5%).

The path model had an acceptable fit ($\chi^2(1) = 1.22, p = .269, CFI = 1.00, RMSEA = .03, 90\% CI: .00 - .15$). The results showed that both cognitive attitude and affective attitude had a strong significant influence on overall attitude (see Figure 4.1). This did not result in an indirect influence on behavioral intention, because overall attitude had no significant effect on behavioral intention. Cognitive attitude neither had a significant direct effect on behavioral intention. Therefore, there was no influence of cognitive attitude on behavioral intention. Affective attitude, on the other hand, did have a strong direct significant effect on behavioral intention.
Discussion

The current findings suggest that affective attitude is the only attitudinal component that influences adolescents’ intention to drink alcohol. Our results differ from previous research on drinking behaviors in not finding any influence of cognitive and overall attitude on intention (Keer et al., 2010). This means that intention is only based on an evaluation of whether it is enjoyable or not. The differences between the behaviors that were examined in the previous research could possibly explain this discrepancy. Previous research focused on forms of heavy drinking, whereas we focused on students’ general intention to drink alcohol or not. Heavy drinking clearly has negative affective and cognitive consequences that should be integrated to come to an overall evaluation of the behavior (Keer et al., 2010). These negative consequences are less applicable when consuming a limited amount of alcohol, even for underage adolescents, and therefore less relevant for the decision to drink alcohol at all or not. For the latter behavior, primarily positive consequences are considered, which are mainly affective. People may enjoy it, but it is not likely to be described as “wise”. Therefore, the integration of affect and cognition in an overall evaluation is not required and the variance in intention could solely be explained by affective attitude.

Our findings suggest that interventions should target affective attitude rather than cognitive attitude. Existing interventions often ineffectively target behavior through cognitive attitude (Paglia & Room, 1999). Our results suggest that the ineffectiveness of these interventions could be attributed to the lack of a relation between cognitive attitude and intention. The effectiveness may be improved by focusing on affective attitude. Because most existing interventions have primarily focused on strategies that are most likely to appeal to cognitive attitude, little knowledge exist about what strategies could be most effective for targeting affective attitude. Therefore, it is important for future studies to focus on potentially effective approaches.

These approaches could follow three strategies that are more or less similar to the strategies that are suggested for targeting the beliefs that underlie cognitive attitude (Fishbein & Yzer, 2003). The first strategy is reinforcing associations between negative feelings and alcohol drinking that adolescents already hold in memory through priming (Fishbein & Yzer, 2003; Henson, Eckstein, Waszak, Frings, & Horner, 2014). This strategy is appropriate when a large share of the target population already associates a behavior with a particular feeling, but
that it is not immediately activated when people are asked about the behavior. Reinforcing the relation between the feeling and the behavior will increase the likelihood of the feeling to be activated when people are confronted with the behavior (Fishbein & Yzer, 2003; Henson et al., 2014). The second path is establishing new associations between negative alcohol drinking and feelings that adolescents not yet hold (Ajzen, 2001; Fishbein & Yzer, 2003). This strategy is more complicated than priming, because it first requires an association to be established. Hereafter, the association between the feeling and alcohol drinking needs to become strong enough to be activated when needed (Ajzen, 2001). A final hypothetical strategy could be to persuade adolescents that the positive feelings that they associate with alcohol drinking are incorrect. 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.

Our study makes an important contribution by revealing the need for underage drinking interventions to focus on affective attitude. We also offer three basic strategies that could be used to do so. These strategies should be further developed and examined in future studies. Because many existing interventions are found to be ineffective, this is a promising path that could result in necessary improvement of intervention effectiveness.
References


