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 6: The added value of testimonials in health education materials

Abstract

Adding testimonials to health education materials is suggested to improve effectiveness through the mental images that people form. However, previous research has not yet tested the added value of testimonials in the context of school health education. Therefore, a pre-post experiment with two experimental conditions (informative texts only versus informative texts + testimonials) and a control group was conducted using materials about alcohol. In total 281 Dutch seventh grade students participated. Results showed intended effects on knowledge for the experimental groups compared to the control group, which did not differ between conditions. Intended effects were also found for cognitive and affective attitude, but only among participants who had an unhealthy attitude at baseline. However, for neither of the attitudes there was a difference between the experimental groups and the control group. No effects were found for intention. We conclude that testimonials do not increase the effectiveness of health education materials.

This chapter is submitted as:
Introduction

Small narratives, such as testimonials in health education materials, are suggested to have positive persuasive effects, by helping readers to form a mental image of the information that is described and, subsequently, improving comprehension (Bower & Morrow, 1990; Dahlstrom, 2012). Testimonials describe a personal story or experience. They typically include information about the person involved and explain this person’s goals, plans, and actions (Braverman, 2008). Health education materials may benefit from the positive effects of testimonials by adding them to the informative texts that are typically used. The added value of testimonials in addition to informative texts has however not yet been examined in school health education before.

To examine the added value of testimonials to informative texts, it is necessary to have a design that allows to compare a group that only reads informative texts to a group that reads informative texts with testimonials added to them. In addition, it is important to have a pre-posttest design, to examine whether differences between conditions are caused by changes in an intended or unintended direction. Two previous studies have been conducted using testimonials added to informative texts in health education (Limon & Kazoleas, 2004; De Wit, Das, & Vet, 2008). Both studies applied posttest only between-subjects designs and compared a condition in which testimonials were added to informative texts to a condition in which statistical evidence was added. Limon and Kazoleas (2004) did not find a difference between conditions with a testimonial versus statistical evidence on attitude towards tanning. De Wit and colleagues (2008) found a positive effect of an informative text with a testimonial in comparison to the no exposure control group and the group who received an informative text with statistical evidence on the perceived risk of getting infected with hepatitis B and intention to get vaccinated. Unfortunately, it is not possible to tell from these results whether the testimonial increased the effect of the informative text it was added to or whether statistical evidence had a negative influence on the effect of the informative text. Therefore, it is impossible to tell from these studies whether testimonials in health education materials have any additional value to informative texts.

In our study we examine the added value of testimonials in the context of school health education materials about alcohol. The aim of such materials generally is to increase knowledge about the negative consequences of drinking alcohol, to decrease the favorability of students’ cognitive and affective attitudes towards the behavior, and to influence future behavior, for which we use intention to drink
alcohol as a proxy. We expect an effect in a healthy direction on all outcome variables in both experimental groups, but that these effects are stronger for the condition that includes testimonials. Furthermore, in accordance with previous studies, we expect few effects for students who already have much knowledge about the negative consequences of drinking alcohol, unfavorable attitudes towards alcohol, and little intention to drink alcohol (e.g., Mason, Mennis, Linker, Bares, & Zaharakis, 2014). This study adds to the existing literature by being the first study that examines the added value of testimonials in the context of informational school health education materials.

**Method**

**Design**

An experiment was conducted with a pre- and posttest, two experimental groups (informative texts versus informative texts + testimonials), and a control group. There was a five week-interval between waves. The control group was added to account for potential questionnaire effects that may occur due to repeated administration of questionnaires (Wilson & Putman, 1982).

**Materials**

Materials were booklets containing four pages of text about the negative consequences of drinking alcohol, which were identical in both conditions. In the condition with testimonials, three short stories were added to the informative text in which adolescents told how they experienced the negative consequences that were described on that page. In both experimental conditions identical exercises were added after each text page as is common in school health education programs.

**Participants**

This study was conducted amongst seventh grade students from pre-vocational schools. Students at these schools are a prominent adolescent risk population for alcohol use and therefore a suitable population for our study. According to our power calculation we required 258 participants to have a 90% chance to find small effects (f = .1) if those existed. In total 336 students from two schools participated in this study. Between waves 33 students dropped out, mainly due to illness. In addition, 22 students were removed before analyses because of missing values, resulting in a final sample of 281 students.
Procedure

During both waves data were collected in a classroom setting. Sessions started with verbal instructions. At the first wave all students completed a pre-test questionnaire. This took about 25 minutes. The second wave took place exactly five weeks later. Students in the experimental conditions first completed a booklet, which took about 15 minutes. Subsequently, they received a posttest questionnaire that took about 20 minutes to complete. In the control group students did not receive a booklet and were immediately requested to complete the questionnaire. The ethical committee of the first author’s affiliation institution approved these procedures.

Measures

Knowledge about the negative consequences of drinking alcohol was measured using an open-ended question asking participants to write down as many negative consequences of drinking alcohol as they knew. Responses were coded independently by two coders (T1: r = .96; M = 3.25; SD = 1.31. T2: r = .95; M = 3.41; SD = 1.39.). Affective (e.g., unenjoyable-enjoyable; T1: r = .76; M = 1.86; SD = .76. T2: r = .80; M = 1.82; SD = .76.) and cognitive attitude toward alcohol (e.g., unwise-wise; T1: r = .50; M = 1.60; SD = .54. T2: r = .65; M = 1.56; SD = .60.) were both measured with two semantic differential items. Items were preceded by the sentence “I find drinking alcohol...” Intention to drink alcohol (T1: α = .63; M = 1.62; SD = .54. T2: α = .76; M = 1.66; SD = .63.) was measured using three measures (e.g., “I plan to drink alcohol”; Ajzen, 2006).

To check whether testimonials improved participant’s mental image we included the statement “while reading I visualized the things that were described in the text” with a four-item response scale.

Differences in alcohol use during the past year were controlled for using a closed-ended question with the categories never, 1–10 days per year, and 1 day per month or more.

Data Analyses

Repeated measures ANOVAs were conducted to test the effects of the materials on knowledge, attitudes, and intention. To distinguish between students who had much or little opportunity for improvement, grouping variables were created for each outcome variable at the first wave based on the medians. Students
scoring below or equal to the median were assigned to one group and students scoring above the median to another group. In all analyses we controlled for age, gender, and past behavior if these were found to have a significant impact on the dependent variable at a level of \( p < .10 \). Contrasts were computed using a Bonferroni correction for multiple comparisons.

Table 6.1

Comparison of estimated means between waves of knowledge per condition, within groups that scored above or below the median of knowledge at T1.

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Control group</th>
<th>Informative only</th>
<th>Informative &amp; testimonials</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1 low</td>
<td>2.77(.20)</td>
<td>2.58(.19)</td>
<td>2.63(.20)</td>
</tr>
<tr>
<td></td>
<td>3.45(.34)</td>
<td>4.10(.32)</td>
<td>4.24(.34)</td>
</tr>
<tr>
<td>T1 high</td>
<td>4.84(.21)</td>
<td>4.84(.21)</td>
<td>4.89(.20)</td>
</tr>
<tr>
<td></td>
<td>4.26(.35)</td>
<td>4.61(.36)</td>
<td>5.19(.34)</td>
</tr>
</tbody>
</table>

Note. Superscript indicates group means that do not differ significantly \( (p > .05) \) between waves.

Results

Our final sample contained slightly more girls (55.2%) than boys (44.8%), with an average age slightly above twelve \( (M = 12.41; SD = .53.) \). Most participants were Dutch (96.1%) and had either no religion (61.9%) or were catholic (30.4%). The majority of students never consumed alcohol (73.6%), while most students who did consume alcohol did this on 1 to 10 days per year (21.8%).

Exposure to materials with (vs. without) testimonials had a strong effect on mental image \( (d = .80; 95\% \text{ CI} [.50, 1.11]) \). The analysis for knowledge showed a significant interaction between time and condition \( (F(2, 271) = 10.21, \eta^2 = .07, p < .001) \), and between time and the median split of knowledge at T1 \( (F(1, 271) = 70.28, \eta^2 = .21, p < .001) \). The interaction between time, condition and the median split was not significant \( (F(2, 271) = .81, \eta^2 = .01, p = .448) \). Contrasts showed that amongst students who had little knowledge at T1 there was a significant increase of knowledge in both experimental conditions, but not in the control group. Amongst students who had much knowledge at T1, there were no significant changes over time (see Table 6.1).

For both affective \( (F(1, 269) = 29.45, \eta^2 = .10, p < .001) \) and cognitive attitude \( (F(1, 272) = 27.20, \eta^2 = .09, p < .001) \) the only significant interactions were
between time and the median splits of attitudes at T1. For both affective and cognitive attitude, contrasts showed a significant change in a healthy direction amongst students who had a favorable attitude towards alcohol at T1. No significant changes were found amongst students who had an unfavorable attitude towards alcohol at T1 (see Table 6.2). Results for intention also showed a significant interaction between time and the median split ($F(1, 269) = 6.76, \eta^2 = .01, p = .025$). However, none of the contrasts between groups were found to be significant (see Table 6.2).

Table 6.2
Comparison of estimated means between waves for knowledge, affective attitude, cognitive attitude, and behavioral intention, within groups that scored above or below the median of the outcome variable at T1.

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>T1</th>
<th>T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1 low</td>
<td>2.66 (.18)</td>
<td>3.93 (.30)</td>
</tr>
<tr>
<td>T1 high</td>
<td>4.86 (.18)a</td>
<td>4.66 (.31)a</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Affective Attitude</th>
<th>T1</th>
<th>T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1 unfavorable</td>
<td>1.56 (.11)b</td>
<td>1.61 (.15)b</td>
</tr>
<tr>
<td>T1 favorable</td>
<td>2.82 (.11)</td>
<td>2.40 (.15)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cognitive Attitude</th>
<th>T1</th>
<th>T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1 unfavorable</td>
<td>1.29 (.03)c</td>
<td>1.37 (.06)c</td>
</tr>
<tr>
<td>T1 favorable</td>
<td>2.20 (.03)</td>
<td>1.96 (.06)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Behavioral Intention</th>
<th>T1</th>
<th>T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1 low</td>
<td>1.54 (.08)d</td>
<td>1.58 (.13)d</td>
</tr>
<tr>
<td>T1 high</td>
<td>2.43 (.10)e</td>
<td>2.28 (.13)e</td>
</tr>
</tbody>
</table>

Note. Superscript indicates group means that do not differ significantly ($p > .05$) between waves. Scales for affective attitude, cognitive attitude, and behavioral intention run for 1 (unfavorable/low) to 4 (favorable/high).

**Discussion**

Our results show that amongst students who had little knowledge at T1 exposure to health education materials caused a significant increase in knowledge that did not emerge in the control group. However, there was no difference between informational materials with and without testimonials. This suggests that exposure to health education materials has the intended effect on knowledge, but that testimonials do not have added value for this outcome variable. Amongst students who had much knowledge at T1, there was no significant change of knowledge. For affective and cognitive attitude we found effects in a healthy direction amongst students who had favorable attitudes at T1. Amongst
students who had unfavorable attitudes towards alcohol at T1 we found no effects. There was no difference between the experimental groups and the control group, which means that the changes cannot be accounted for by exposure to materials. Finally, for behavioral intention we did not find any effects.

Our study was the first to examine the added value of testimonials in school health education materials. It provides a strong indication that testimonials in health education materials do not have added value to informational materials for knowledge, attitude, and intention. Our study had sufficient power to detect small effects if these existed. Moreover, we can be confident that the lack of effects was not caused by the testimonials’ quality, because we find a strong effect of the testimonials on mental image. Results of previous research should therefore be treated with caution, because due to the incomplete designs we cannot conclude what the effects of testimonials were in these studies. This implies also that both researchers and practitioners should be cautious about the effects they expect from testimonials.

Future studies on testimonials may, however, change the focus from effects on knowledge and determinants of behavior to outcome variables related to the evaluation of materials. We did find an effect of testimonials on imagery. It could be that imagery, for example, makes materials more interesting in the perception of students (Shimoda, 1993). In a context where students have the possibility to choose for themselves whether they would like to use health education materials or not, interestingness is most likely a key determinant of exposure. Effects on interestingness may then proof of great value for the success of health education materials. Hence, the use of testimonials may prove to be of greater influence than our current results suggest, but a different research approach would be required to reveal these effects.
References


