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Gender Effects in a Multischool Alcohol Media Literacy Study With Preadolescents

Chloe S. Gordon

Australian Catholic University, University of Wollongong, cg760@uowmail.edu.au

Steven J. Howard

University of Wollongong, stevenh@uow.edu.au

Lisa K. Kervin

University of Wollongong, lkervin@uow.edu.au

Sandra C. Jones

Australian Catholic University, Sandra.Jones@acu.edu.au

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Abstract

Objective. Alcohol media literacy (AML) programs have achieved positive results for alcohol prevention; however, gender may moderate program effectiveness. This study investigated gender differences for an Australian AML intervention. **Method.** Fifth and sixth graders (N = 165), allocated to an intervention or wait-list control group, participated in an AML program. Student questionnaires were administered at three time points. **Results.** The intervention resulted in significantly higher media deconstruction skills but did not lead to less preference for branded merchandise or greater understanding of persuasive intent, and these effects did not differ by gender. Gender differences were present in social norms for drinking and alcohol expectancies. **Conclusions.** AML education likely has appeal and benefit to both genders as it connects with students' lifeworlds. Social norms may be more difficult to shift for males due to a more ingrained drinking culture. Future research could explore contextual factors responsible for gender differences.

Disciplines

Education | Social and Behavioral Sciences

Publication Details

Gordon, C. S., Howard, S. J., Kervin, L. K. & Jones, S. C. (2018). Gender Effects in a Multischool Alcohol Media Literacy Study With Preadolescents. *Health Education and Behavior*, 45 (3), 311-314.

Gender effects in a multi-school alcohol media literacy study with preadolescents

Abstract

Objective

Alcohol media literacy programs (AML) have achieved positive results for alcohol prevention, however gender may moderate program effectiveness. This study investigated gender differences for an Australian AML intervention.

Methods

Fifth and sixth graders ($N = 165$), allocated to an intervention or wait-list control group, participated in an AML program. Student questionnaires were administered at three time-points.

Results

The intervention resulted in significantly higher media deconstruction skills but did not lead to less preference for branded merchandise or greater understanding of persuasive intent, and these effects did not differ by gender. Gender differences were present in social norms for drinking and alcohol refusal self-efficacy.

Conclusions

AML education likely has appeal and benefit to both genders as it connects with students' lifeworlds. Social norms may be more difficult to shift for males due to a more ingrained drinking culture. Future research could explore contextual factors responsible for gender differences.

Key words: Alcohol prevention; media literacy; gender; alcohol advertising

INTRODUCTION

Alcohol media literacy (AML) programs have achieved positive changes in media deconstruction skills, potentially mitigating the effects of alcohol advertising on drinking intentions (authors, 2015). However gender has surfaced as a potential moderating variable for the effectiveness of alcohol media literacy interventions (Austin and Johnson, 1997a, 1997b; Chen, 2013; Kupersmidt et al., 2010), as well as other topics such as sex education (Pinkleton et al., 2012). For example, one intervention found decreased preference for alcohol branded merchandise (ABM)—an indicator of pre-drinking behaviour—only amongst males (Kupersmidt et al., 2010). Similarly, a sex education media literacy intervention found greater gains for males in understanding the media influence on sex (Pinkleton et al., 2012). A possible explanation is differences in message processing as a result of gender socialization (Pinkleton et al., 2008), which is reinforced through alcohol advertisements’ stereotypes of masculinity and femininity (Andsager et al., 2002).

This study explored whether gender differences existed in responses to an Australian multi-school AML intervention (see authors, 2016 for further details on the program and study design), to understand whether such programs are suitable for both genders. The 10-lesson program was interactive, underpinned by inoculation theory (Banas and Rains 2010) and the message interpretation process model (Austin, 2007), and responded to principles of media literacy education (Thoman and Jolls, 2005). Students explored use and misuse of alcohol in Australian society and associated harms; the broad nature, diversity and impact of alcohol advertising on cultural norms; and persuasive advertising techniques and hidden messages in alcohol ads. Students also critiqued multimodal alcohol ads and created counter-advertisements to reflect facts about alcohol absent from the original ads. Based on previous

studies (Austin and Johnson, 1997a, 1997b; Chen, 2013; Kupersmidt et al., 2010), gender effects were expected for preference for ABM and positive alcohol expectancies.

METHODS

A quasi-experimental wait-list control design was used. Participants were 165 fifth and sixth grade students ($M_{age} = 10.81$, $SD = 0.65$) from four metropolitan Australian schools (85.1% participation rate). Schools were a convenience sample selected for similar demographics. The three smaller schools were combined to form the intervention group (totalling four classes; $n = 83$). The larger school comprised four fifth and sixth grade classes and therefore formed the wait-list control (four classes; $n = 82$). A University Research Ethics Committee approved study protocols. The intervention was delivered over a 10-week term at the schools, with one lesson taught each week by the first author of this article.

Primary outcomes were those explicitly addressed through the AML program. For *Media deconstruction skills*, students analysed an alcohol advertisement answering, for example, “what is the purpose of this ad?” (6 items, Cronbach’s $\alpha = .94$; Kupersmidt et al., 2010, 2012). Six qualitative items were assigned numerical values from 0 to 22, based on a coding framework (inter-rater reliability for 10% of responses). In *preference for ABM* students indicated whether they preferred, for example, a Hot Wheels-branded toy car or a Jim Beam-branded toy car (6 items, Cronbach’s $\alpha = .83$; Austin & Johnson, 1997a, 1997b; Kupersmidt et al., 2010). For *understanding of persuasive intent* students answered questions such as “the purpose of alcohol advertisements is to tell you everything there is to know about the product” (3 items, Cronbach’s $\alpha = .72$; Kupersmidt et al., 2010). Secondary outcomes—those not explicitly addressed in the program, but possibly indirectly affected—were *social norms* (e.g., “teenagers drink”, 4 items, Cronbach’s $\alpha = .83$; Austin & Johnson, 1997a), *alcohol*

expectancies (e.g., “drinking makes you happy”, 3 items, Cronbach’s $\alpha = .75$; Austin & Johnson, 1997a, 1997b), and *self-efficacy to refuse alcohol* (e.g., “I feel like I have to drink alcohol”, 2 items, Cronbach’s $\alpha = .78$; Kupersmidt et al., 2010). Apart from the media deconstruction skills measure, all survey items used a 5-point Likert scale, such that higher scores indicate higher levels of that belief, attitude, or characteristic. The questionnaires were completed by the students at baseline (prior to intervention), follow-up (after the intervention group completed the program), and 3-month follow-up (after wait-list controls completed the program).

RESULTS

To explore gender effects, data were analysed using a 3 (Time) x 2 (Condition) x 2 (Gender) ANOVA. Where significant two- or three-way interactions with gender existed subsequent 3 (Time) x 2 (Condition) ANOVAs, separately for males and females, were run and reported. Preliminary analyses showed that control and intervention groups did not significantly differ in χ^2 analyses of gender, grade, language spoken at home, and satisfaction with the program (all $ps < .05$). Males and females also did not differ in satisfaction with the program; $t(165) = -0.88, p = .382, \eta^2 = .00$. Descriptive statistics for all outcomes are given in Table 1.

Intervention outcomes without gender differences

Media deconstruction skills

The three-way ANOVA indicated no significant interaction effects for Gender (all $ps > .05$). There was a significant Time x Condition interaction, $F(2, 322) = 27.18, p < .001$, partial eta squared (η_p^2) = .28, such that the intervention group showed improved media deconstruction skill from baseline to post-intervention ($\eta^2 = .06$), which was maintained at 3-month follow-

up ($\eta^2 = .06$). This suggests that media literacy improvement was achieved – comparably across genders – yet it does not demonstrate impact on decision-making outcomes. As such, subsequent analyses sought to investigate attitudinal changes associated with this improvement.

Preference for alcohol branded merchandise

The three-way ANOVA indicated no interaction effects for gender (all $ps > .05$). There was only a main effect of Time, $F(2, 318) = 7.36, p = .001, \eta_p^2 = .04$. Post hoc analyses indicated a significant decrease in preference for alcohol branded merchandise from baseline to post-intervention ($\eta^2 = .08$), which was maintained 3 months later ($\eta^2 = .05$). These changes were comparable across genders.

Understanding of persuasive intent

There were again no interaction effects with gender in the three-way ANOVA (all $ps > .05$). There was a main effect of Time, $F(2, 316) = 28.54, p < .001, \eta_p^2 = .15$, such that there was improvement in understanding of persuasive intent from baseline to post-intervention ($\eta^2 = .09$), which improved further at the 3-month follow-up ($\eta^2 = .06$). Results thus suggest both genders showed comparable improvements in understanding of persuasive intent over the course of the term (likely due to an educational effect), although there were no intervention-related improvements.

Intervention outcomes showing gender differences

Social Norms

The three-way ANOVA indicated a significant Gender x Condition interaction, $F(1, 159) = 5.36, p = .022, \eta_p^2 = .03$, such that females uniquely showed effects of the AML intervention

on social norms: Time x Condition, $F(2, 170) = 8.82, p = .001, \eta^2 = .08$. Females within the intervention group uniquely showed lowered social norms after the intervention ($\eta^2 = .06$), which was maintained at the 3-month follow-up ($\eta^2 = .13$). Female wait-list controls similarly showed lowered social norms after they received the program ($\eta^2 = .20$). Males showed only a main effect of Time, $F(2, 148) = 4.73, p = .010, \eta_p^2 = .11$. Results suggest only females' perception of social norms for drinking were lowered post-intervention, with these decreases maintained three months later.

Positive alcohol expectancies

The three-way ANOVA indicated a significant Time x Condition x Gender interaction, $F(2, 316) = 3.63, p = .028, \eta_p^2 = .02$. Males uniquely showed effect of the intervention on positive alcohol expectancies: Time x Condition, $F(2, 142) = 8.63, p = .001, \eta_p^2 = .11$. Males within the intervention group showed decreased scores from baseline to post-intervention ($\eta^2 = .29$), although this was not maintained at 3-month follow-up. Males in the wait-list control group similarly decreased in expectancies scores after they received the program ($\eta^2 = .21$). Results suggest only males lowered (and maintained their decreases in) positive alcohol expectancies, although it is noted that males held significantly higher positive alcohol expectancies than did females at baseline ($\eta^2 = .08$).

Self-efficacy to refuse alcohol

The three-way ANOVA again indicated a significant Time x Condition x Gender interaction, $F(2, 320) = 3.81, p = .023, \eta_p^2 = .02$. Males again uniquely demonstrated an effect of the intervention on self-efficacy to refuse alcohol: Time x Condition, $F(2, 146) = 8.98, p < .001, \eta^2 = .11$. Males in the wait-list control increased in self-efficacy after the intervention ($\eta^2 = .21$). No change was evident for the intervention group for either gender (all $ps > .05$). For

females, there was a significant effect of Time, $F(2, 174) = 3.31, p = .039, \eta_p^2 = .04$, such that there was a decrease in self-efficacy to refuse alcohol from baseline to post-intervention ($\eta^2 = .07$), which did not significantly improve at 3-month follow-up. Only males indicated their increased self-efficacy post-intervention; however, this was only for wait-list controls and these improvements did not exceed earlier baseline levels of refusal self-efficacy.

***INSERT TABLE 1 HERE ***

DISCUSSION

This study, the first quasi-experimental trial to test the unique effects of an Australian AML program for males and females, indicates that program delivery in a normal school setting is appropriate. There were no gender differences in the main outcome effects; both genders showed improved media deconstruction skills and neither showed reduced preference for ABM. There were no interaction effects for understanding of persuasive intent.

Secondary outcomes did show gender differences. First, the program lowered perceptions of social norms around alcohol use for females but not for males. Inflated social norms are linked to increased drinking intentions and behaviours (Berends et al., 2016). These perceptions may be more difficult to shift for males due to a more ingrained drinking culture, with males more likely to drink and drink excessively (Mahalik, et al., 2015). Thus young males may be more likely to see drinking behaviours modelled by their elders.

The results also showed post-program lowering of alcohol expectancies for males, but not for females. This is consistent with results from previous studies (Austin and Johnson, 1997a). Societal expectations and representations of masculinity in advertisements (Andsager, et al.,

2002; Mahalik, et al., 2015) may lead to males having higher positive alcohol expectancies than females, as seen in the baseline results. Thus the lack of change for females may be due to a floor effect for females' positive alcohol expectancies at baseline. Further research is required to evaluate these factors; for example, does alcohol sponsorship of sport have a greater influence on preadolescent males' perceptions of social norms and alcohol expectancies? This knowledge could be used to inform alcohol education programs. Results for self-efficacy were mixed and further exploration is needed.

Despite some confined gender effects, largely consistent gender effects suggest that media literacy education has appeal and benefit to both genders as it connects with students' lifeworlds and draws upon popular culture through utilising authentic texts to encourage action (Makin et al., 2007). Similar results were concluded in a sex media literacy intervention (Pinkleton et al., 2012). Our AML program engaged both genders through the inclusion and critique of male and female targeted advertisements, and use of a variety of teaching strategies to appeal to both genders. Furthermore, the program connected to the school Language Arts and Health curriculum which are designed for both genders. Given previous mixed findings on gender effects in AML programs (Austin and Johnson, 1997a, 1997b; Chen, 2013; Kupersmidt et al., 2010), this study provides a valuable contribution to the health promotion field as it indicates the suitability of AML programs for both genders in school settings.

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TABLE 1. Descriptive statistics for males and females

| INTERVENTION | | | | | | |
|--|-----------------------|---------------|---------------|-------------------------|---------------|---------------|
| | Males (n = 34) | | | Females (n = 49) | | |
| | <u>Wave 1</u> | <u>Wave 2</u> | <u>Wave 3</u> | <u>Wave 1</u> | <u>Wave 2</u> | <u>Wave 3</u> |
| | <i>M (SD)</i> | <i>M (SD)</i> | <i>M (SD)</i> | <i>M (SD)</i> | <i>M (SD)</i> | <i>M (SD)</i> |
| Media literacy skills | 7.03 (2.55) | 9.63 (2.87) | 10.42 (2.56) | 8.80 (2.10) | 12.53 (2.63) | 12.33 (2.55) |
| Preference for alcohol branded merchandise | 2.50 (0.66) | 2.27 (0.86) | 2.24 (0.94) | 1.99 (0.66) | 1.83 (0.69) | 1.77 (0.80) |
| Understanding of persuasive intent | 3.46 (0.80) | 3.85 (0.89) | 4.16 (0.66) | 3.68 (0.76) | 3.87 (1.18) | 4.08 (0.99) |
| Social norms | 3.53 (0.38) | 3.14 (0.55) | 3.29 (0.52) | 3.26 (0.49) | 2.89 (0.58) | 2.97 (0.65) |
| Alcohol expectancies | 2.25 (0.72) | 1.73 (0.73) | 2.03 (0.79) | 1.59 (0.67) | 1.59 (0.62) | 1.44 (0.60) |
| Self-efficacy | 3.91 (1.06) | 4.21 (1.07) | 4.12 (1.15) | 4.50 (0.86) | 4.42 (0.92) | 4.58 (0.73) |
| WAIT-LIST CONTROL | | | | | | |
| | Males (n = 42) | | | Females (n = 40) | | |
| | <u>Wave 1</u> | <u>Wave 2</u> | <u>Wave 3</u> | <u>Wave 1</u> | <u>Wave 2</u> | <u>Wave 3</u> |
| | <i>M (SD)</i> | <i>M (SD)</i> | <i>M (SD)</i> | <i>M (SD)</i> | <i>M (SD)</i> | <i>M (SD)</i> |
| Media literacy skills | 7.29 (2.09) | 7.78 (2.15) | 9.90 (2.60) | 8.18 (2.11) | 8.21 (1.99) | 10.65 (3.02) |
| Preference for alcohol branded merchandise | 2.55 (0.64) | 2.46 (0.64) | 2.43 (0.86) | 2.00 (0.53) | 1.81 (0.64) | 1.86 (0.72) |
| Understanding of persuasive intent | 3.72 (0.78) | 4.13 (0.88) | 4.37 (0.71) | 3.55 (0.95) | 3.85 (0.89) | 4.12 (0.84) |
| Social norms | 3.20 (0.59) | 3.20 (0.55) | 2.98 (0.54) | 3.26 (0.54) | 3.29 (0.49) | 2.91 (0.53) |
| Alcohol expectancies | 1.93 (0.81) | 2.11 (0.88) | 1.79 (0.76) | 1.64 (0.66) | 1.90 (0.70) | 1.78 (0.77) |
| Self-efficacy | 4.50 (0.59) | 3.65 (1.41) | 4.44 (0.81) | 4.80 (0.32) | 4.25 (1.22) | 4.44 (0.87) |

Note. Wave 1 of the questionnaire was administered at baseline, Wave 2 was administered after the intervention group completed the program and Wave 3 was administered after the wait-list control group completed the program. For all variables, higher scores indicate higher levels of that belief/attitude/characteristic.