# Differential segmentation responses to an alcohol social marketing program

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## HIGHLIGHTS

- This study is part of a cluster RCT trial named Game On: Know Alcohol (GOKA).
- TwoStep cluster analysis was conducted to segment 2114 high school adolescents.
- Three segments were identified: (1) *Abstainers* (2) *Bingers* and (3) *Moderate Drinkers*.
- Program effects varied significantly across segments.
- Findings support application of segmentation in alcohol education programs.

## ARTICLE INFO

## ABSTRACT

*Objective:* This study seeks to establish whether meaningful subgroups exist within a 14–16 year old adolescent population and if these segments respond differently to the Game On: Know Alcohol (GOKA) intervention, a school-based alcohol social marketing program.

*Methodology:* This study is part of a larger cluster randomized controlled evaluation of the GOKA program implemented in 14 schools in 2013/2014. TwoStep cluster analysis was conducted to segment 2,114 high school adolescents (14–16 years old) on the basis of 22 demographic, behavioral, and psychographic variables. Program effects on knowledge, attitudes, behavioral intentions, social norms, alcohol expectancies, and drinking refusal self-efficacy of identified segments were subsequently examined.

*Results:* Three segments were identified: (1) *Abstainers*, (2) *Bingers*, and (3) *Moderate Drinkers*. Program effects varied significantly across segments. The strongest positive change effects post-participation were observed for *Bingers*, while mixed effects were evident for *Moderate Drinkers* and *Abstainers*.

*Conclusions:* These findings provide preliminary empirical evidence supporting the application of social marketing segmentation in alcohol education programs. Development of targeted programs that meet the unique needs of each of the three identified segments will extend the social marketing footprint in alcohol education.

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## 1. Introduction

Adolescents are inundated by images depicting the benefits of alcohol consumption, through TV-shows and movies (Gunter, Hansen, & Touri, 2009; Hanewinkel et al., 2012) and social media channels (Hastings & Sheron, 2013). They are also surrounded by drinking behaviors in their socio-cultural environment (Trucco, Colder, Wieczorek, Lengua, & Hawk, 2014), with alcohol drinking dominating large social occasions such as festivals and sporting events (Ellickson, Collins, Hambarsoomians, & McCaffrey, 2005). Frequently, rapid and excessive alcohol consumption, termed 'binge drinking' is accepted and encouraged (Jones, 2014). Binge drinking is the most common pattern of alcohol consumption among youth (Miller, Naimi, Brewer, & Jones, 2007), with stories and artifacts related to binge drinking often celebrated and worn as a badge of honor (Reid, Farrelly, Farrell, Fry, & Worsley, 2013). Consequently, a key public health challenge is to reduce alcohol consumption and risky drinking among adolescents (Roche et al., 2010). School-based alcohol education programs continue to be one of the most convenient and cost-effective face-to-face environments to reach adolescents (Babor et al., 2010) and play an important role in attempting to shift drinking attitudes and behavior towards moderate or (ideally) no alcohol drinking and in discouraging binge drinking (Botvin & Griffin, 2004; McBride, Farringdon, Midford, Meuleners, & Phillips, 2004). (See Fig. 1.)

Researchers are beginning to explore differential effects of alcohol education programs on subgroups within the adolescent population (Foxcroft & Tsertsvadze, 2012; McKay, Sumnall, McBride, & Harvey, 2014; Newton, Teesson, Barrett, Slade, & Conrod, 2012). Some programs yield greater effects in either low-risk or high-risk groups and some with females (Vogl et al., 2009; Wenzel et al., 2009) and yet others with males (Dielman, 1994; Faggiano et al., 2008; Vogl et al., 2009). Studies typically employ predominantly socio-demographic variables (Boslaugh, Kreuter, Nicholson, & Naleid, 2005; Moss, Kirby, & Donodeo, 2009) or behavioral variables (McKay et al., 2014) to define subgroups. A key aim in segmentation studies is to look for differences between consumers that affect how they respond (Sharp, 2013). Use of one dimensional variables, such as socio-demographic variables, is unlikely to identify 'true' market segments or subgroups that enable deeper understanding (Dibb & Simkin, 2009). Understanding differences can assist the development of more efficacious and cost-efficient programs targeted at one or more market segment(s) based on consumer differences (Albrecht & Bryant, 1996; Beane & Ennis, 1987). In response, a few recent studies have segmented adolescents using psychographic (e.g. attitudes) and behavioral variables (e.g. alcohol consumption patterns) in addition to socio-demographic characteristics (Babbin, Velicer, Paiva, Brick, & Redding, 2015; Mathijssen, Janssen, van Bon-Martens, & van de Goor, 2012; Tomcikova, Madarasova Geckova, Van Dijk, & Reijneveld, 2011). However, these studies do not investigate whether the identified segments responded differentially to alcohol education or prevention/intervention programs.

A social marketing perspective suggests that members of one 'true' segment will respond uniformly to programs and following this logic, different segments will respond differently to programs (Wilkie, 1994). Without establishing whether segments respond differently to programs, the value of segmentation and subsequent targeting of programs within this context is uncertain. That is, if segments respond uniformly to alcohol programs, there would be no need to tailor programs to suit the unique needs and characteristics of one or more target segments. This research therefore builds on the literature by examining whether adolescent subgroups identified on the basis of demographic, psychographic, and behavioral variables respond differentially to a school-based alcohol social marketing program. This study employs cluster analysis to identify meaningful segments among a 14–16 year old adolescent population. It investigates whether the outcome effects of Game On: Know Alcohol (GOKA), a school-based alcohol social marketing program employing social marketing principles varied for each of the identified segments.

### 1.1. Alcohol education programs and market segmentation

The majority of alcohol education programs in school settings follow a one size fits all approach, meaning they deliver an identical program (universal program) to all participants (Botvin & Griffin, 2007; Foxcroft & Tsertsvadze, 2012). Universal programs are implemented prior to onset of alcohol use by equipping adolescents' with and promoting interpersonal and intrapersonal skills to foster resilience. Some universal programs have reported positive outcomes (Botvin, Griffin, Diaz, & Ifill-Williams, 2001) while others have reported no effect (Sloboda et al., 2009). Critics of universal programs suggest that these programs cover too many subjects (Amaro, Blake, Schwartz, & Flinchbaugh, 2001) and are often implemented when some adolescents are already consuming alcohol, therefore limiting their effectiveness in the most vulnerable groups of adolescents. Research also indicates that a universal approach may be suboptimal given that previous studies recorded significantly different program effects on subgroups (McBride, Farringdon, Midford, Meuleners, & Phillips, 2003; McKay et al., 2014), notwithstanding studies that simply neglect or don't report group differences (Foxcroft & Tsertsvadze, 2012).

Viewed through a social marketing lens, group differences suggest application of the principle of market segmentation may offer a means to extend outcome effects. A complete market segmentation process consists of identifying homogenous segments within a larger heterogeneous population, evaluating and selecting one or more target segment(s), and developing a program suited to the unique needs and characteristics of the target segment(s) (Donovan, Egger, & Francas, 1999). Meaningful segments can be identified on the basis of demographic, psychographic, geographic, and behavioral variables (Kotler, 1980). Geographic variables can range from areas such as cities, states, region to urban, rural, and suburban classifications (Kotler & Armstrong, 2001). Demographic segmentation includes quantifiable social characteristics such as age, ethnicity, income, and gender. Psychographic segmentation moves beyond geographic and demographic segmentation variables by describing individuals' attitudes, values, and their lifestyles. Behavioral segmentation comprises variables such as benefits sought, frequency and quantity of behavior.

The complete market segmentation process described previously has rarely been used in alcohol research (Moss et al., 2009) and school contexts (Mathijssen et al., 2012), and has not been applied in alcohol education programs aimed at middle and high school segments. Further, only a few studies employ multiple segmentation bases, including demographic, psychographic, and behavioral variables, in the first phase of the market segmentation process (Babbin et al., 2015; Mathijssen et al., 2012; Tomcikova et al., 2011). However, these programs have not investigated whether differential effects are evident following program participation. Against this background, the purpose of the study is twofold. First, the presence of segments within 14–16 year old high school segment will be examined on the basis of demographic, psychographic and behavioral variables. Second, the study will investigate whether the identified segments responded differently to the GOKA program.

## 2. Methods

### 2.1. The GOKA program

This study is part of a larger cluster randomized controlled design research project that involves implementing and evaluating an alcohol social marketing program, GOKA. The GOKA program is delivered in schools to Year 10 adolescents, typically aged 14–16 years old. Cohort sizes ranged from 20 to 200 adolescents across program schools. Preliminary results indicate that the program significantly improved knowledge and reduced positive attitudes towards binge drinking for program participants when compared to the control group