Number of tables: 3

Exposure of children and adolescents to alcohol advertising on television in Australia.

Matthew V Winter (BCom MCom PhD candidate)* Robert J Donovan (BPsych Hons PhD)*^ Ms Lynda J Fielder (BSc Health Promotion)*

*Innovation in Social Marketing Advertising and Policy Area of Research Excellence, Curtin Business School ^ Centre for Behavioural Research in Cancer Control

> *^Curtin University GPO Box U1987 Perth WA 6845 Australia

Corresponding author: Matthew Winter

> School of Marketing Curtin University GPO Box U1987 Perth WA 6845 Australia

Tel: +61 8 9266 3851 Fax: +61 8 9266 3937

Email: winterm@cbs.curtin.edu.au

Grant support: Australian Research Council Discovery Project No. DP0559543

Abstract

Objective: This paper reports the extent to which children (0-12 years) and teenagers under the legal drinking age (13-17 years) were exposed to alcohol advertising on free-to-air television in Sydney, Australia during the period March 2005-February 2006.

Methods: Exposure levels were obtained from weekly TARPS (Target Audience Rating Points) data generated by OzTAM, the official Australian television audience monitoring system. [The TARPs figure for an ad is calculated based on the number of individuals from a target audience (e.g., 13-17 year olds) exposed to the ad as a proportion of the total number of individuals within the target audience, multiplied by 100]. Exposure levels were obtained for four age groups: children up to 12 years; 13-17 years; 18-24 years; and 25 years and over for 156 different ads for 50 brands.

Results: Adults 25 years and over were most exposed to alcohol advertising: approximately 660 TARPs per week. The level to which underage teenagers (13-17 years) were exposed to alcohol advertising was virtually identical to that of Young Adults (18-24 years): 426 TARPs per week vs 429 TARPS per week. Children (0-12 years) were exposed to around one in every three alcohol ads seen on average by Mature Adults (aged 25 years plus).

Conclusion: This study found that Australian children and teenagers under the legal drinking age are currently exposed to unacceptably high levels of alcohol advertising on television.

These findings suggest that alcohol marketers may be deliberately targeting underage adolescents. At the very least they highlight the need for action to be taken to reduce levels to which underage Australians are exposed to alcohol advertising on television

Keywords: alcohol, advertising, adolescents, youth, television, exposure, regulation

Introduction

Over-consumption of alcohol has characterized Australia's social milieu since the time of the First Fleet in 1788 (Lewis, 1997). Compelling evidence continues to emerge as to the substantial cost of this behaviour to the ongoing physical, economic and social well-being of both the nation and the individuals that comprise its citizenry (e.g. Chikritzhs, Pascal & Jones, 2004, Chikritzhs & Pascal 2004, Center on Alcohol Marketing and Youth [CAMY], 2005c), thus supporting calls for more to be done to decrease levels of alcohol misuse in Australia (e.g., McBride, Farrington & Midford).

Children, adolescents and young adults have been identified as being particularly at risk of harm resulting from alcohol misuse (e.g. Bonomo, 2005), and particularly influenceable by alcohol advertising. Such groups are sometimes classified as "vulnerable" due to an increased likelihood of harm because they lack certain skills that are needed to safely and effectively 'navigate a marketplace' (Wolburg, 2005). In the case of adolescents and alcohol consumption, it has been proposed that the rapid neurological development occurring in adolescent brains results in limitations that make them particularly vulnerable to the influence of advertising on their behavioural choices (Pechmann et al., 2005). Importantly, Slater (1996) found that difficulty in adolescents controlling their emotions and impulses, increased thrill-seeking behaviours, decreased cognitive risk assessment abilities, heightened self-consciousness, a need to belong associated with being influenced to a greater extent by their peer group, and relying on conspicuous consumption symbols to 'fit in', may all contribute to this situation (Pechmann et al., 2005).

The level of alcohol misuse amongst adolescents has been described as an international public health crisis (Jernigan and Mosher, 2005) and is one of the leading causes of premature death amongst 15-29 year olds (Saffer, 1998). Alcohol misuse amongst adolescents is related to both short-term physical and social harms and longer term physiological damage. In the short-term, alcohol misuse has been directly related to increased risks of mortality and morbidity from violence, depression, suicide, homicide, eating disorders, substance abuse, 'date-rape', health-related problems relating to risky sexual behaviours, and reckless driving (as noted by Garfield et al., 2003; Jernigan and Mosher, 2005; Miller et al., 2006) and (Pechmann et al., 2005). It has been directly linked to such social harms as property damage, unplanned pregnancies and increased criminal behaviour (e.g. Collins and Lapsley, 2002; McBride et al., 2000), increased conflict with parents (Pechmann et al., 2005), poorer academic performance (Weschler et al., 1998) and strained personal relationships (McBride et al., 2000), as well as harm to related parties such as those in other vehicles involved in motor vehicle accidents, victims of violence (physical, verbal and sexual), and family and friends of the binge-drinker (Jernigan, 2001).

Adolescents have a greater risk of longer-term physical harm from alcohol misuse than do adults (Jernigan, 2001). Longer-term alcohol misuse amongst adolescents has been found to contribute to a greater loss of memory (Jernigan and Mosher, 2005; McBride et al., 2000) and neurological damage, through decreased plasticity (Pechmann et al., 2005) and alcohol addiction (Grant and Dawson, 1997). As a result of these and other harms, the economic cost of over-consumption of alcohol amongst adolescents in the USA has been estimated at US\$53 billion (Francis, 2003).

Influence of Alcohol Advertising on Adolescents

The alcohol industry continues to refer to the findings of market-response studies that explored the impact of variations in overall alcohol advertising expenditure on total industry sales and concluded that alcohol advertising has no influence on alcohol consumption (e.g. Duffy, 1995; Franke and Wilcox, 1987; Gangadharbatla and Wilcox, 2005). However, the substantive theoretical, methodological and interpretive flaws associated with such studies bring into question the appropriateness of such a methodology when evaluating the impact of alcohol advertising on individuals, and groups of individuals such as children and adolescents (Winter, 2006).

For example, the confounding effects of social, cultural and economic influences (Giesbrecht et al, 2004; Gangadharbatla and Wilcox, 2005) increase the complexity of econometric modelling and necessitates subjective assumptions being made that decrease the generalisability of such research (Saffer, 1996). Also, variations in the content, execution and media mix within advertising are consistently ignored (Hastings et al, 2005) and data used for econometric studies relating to aggregate alcohol sales and advertising are almost exclusively from mature markets. Hence there is relatively little variation in expenditure over time as a proportion of the total (Saffer, 1996), and what variation there is occurs in the area of diminishing marginal returns on advertising spend (Casswell, 2004). Such data are considered inappropriate for regression analysis because of the lack of statistically meaningful variation within the data, and hence cannot be used to reliably determine the impact of alcohol advertising on total alcohol consumption (Hastings et al, 2005). Further, the deductive reasoning advanced by alcohol companies and related stakeholders appears fallacious. For example, Tremblay and Okuyama (2001) argue that because there is no significant

relationship between aggregate alcohol advertising and aggregate alcohol consumption at an overall level within a market, there is therefore no significant relationship between alcohol advertising and alcohol consumption amongst youth. Such a conclusion is predicated on the assumption that the market is homogeneous, which is inconsistent with the industry's own widespread marketing practices of market segmentation and target marketing (Winter 2006).

Consumer-level studies on the influence of alcohol advertising on children and adolescents have largely focused on the impact of the content of the advertising on the audience's attitudes, belief, expectancies and intentions with respect to alcohol consumption (Carroll and Donovan, 2002; Ellickson et al., 2005; Fleming and Thorson, 2004; Hill et al., 2005; Saffer, 2002; Snyder et al., 2006). The general finding is that various advertising content has a direct facilitating influence on alcohol consumption and related behaviours and attitudes (Donovan et al., 2006; Hastings et al., 2005).

Fewer studies have looked at the impact of exposure per se. However, a recent large-scale longitudinal study of 15-26 year olds in the top 75 media markets in the USA provides evidence of the relationship between levels of exposure to alcohol advertising and levels of alcohol consumption (Snyder et al., 2006). Snyder et al. (2006) found that: youth who saw more alcohol advertising drank more, with each additional ad seen equating to a 1% increase in alcohol consumption; and youth in markets with greater alcohol advertising expenditure drank more, with each additional advertising dollar per capita raising the number of drinks consumed by 3%. Furthermore, exposure to greater levels of alcohol advertising appears to encourage unsafe drinking behaviours continuing over time, with respondents increasing their levels of risky and high-risk drinking into their late twenties in markets with high levels of alcohol advertising, compared to these behaviours plateauing in the early twenties amongst respondents living in markets with less alcohol advertising (Snyder et al., 2006).

Increased frequency of exposure to alcohol advertising has been found to result in youth becoming more comfortable with consuming alcohol through a process of desensitising them to the potential harms associated with alcohol (Lynch and Bonnie, 1994). It also has been found to make drinking alcohol a more socially normal behaviour, with adolescents exposed to more alcohol ads estimating a higher percentage of the population drinks alcohol regularly (Glantz, 1996). Hollingworth et al. (2006) estimated the potential effects of alcohol advertising bans on young people in the US. They calculated that a complete ban on alcohol advertising would result in a 16.4% decrease in alcohol related life years lost and a partial advertising ban would result in a 4% reduction in alcohol related life years lost (Hollingworth et al., 2006).

The Regulation of Alcohol Advertising

Most countries have voluntary (self-regulation) or mandatory restrictions on either the content of alcohol television advertising or the time when alcohol ads can be aired, or both. In Australia the voluntary Alcoholic Beverages Advertising Code (Distilled Spirits Industry Council of Australia Inc., 2003) has a number of limitations on the content of alcohol advertising, and the Commercial Television Industry Code of Practice (Australian Broadcasting Authority, 2004) stipulates that alcohol advertising is limited to broadcasting between 12.00 noon and 3.00 pm (school days), and from 8.30pm to 5.00am weekdays (school days and school holiday periods). However, advertisements for alcoholic drinks are permitted in daytime hours during the live broadcast of a sporting event on weekends and public holidays.

There are several studies on the content of alcohol advertising in Australia and whether or not such content breaches the ABAC (Carroll and Donovan, 2002; Donovan, 2003; Donovan et al., 2006; Jones and Donovan, 2001; Roberts, 2002). However, unlike the USA, there is a paucity of studies exploring children's and underage teens' ongoing exposure to alcohol advertising. King, Taylor and Carroll (2005) reported that TARPs exposure levels in Sydney and Melbourne in 2004 for the top 10 beer, wine and spirits advertisers were similar for 13-17 year olds and 18-29 year olds, but provided no data for children under 13 years. The present study therefore was conducted to provide an indication of the effectiveness of existing regulations in minimising levels of exposure of Australian children (aged 0-12) and under-age teenagers (aged 13-17) to alcohol advertising on free-to-air television. Levels of exposure of under-age viewers to alcohol advertising on subscription television were not undertaken as part of this project. Subscription television is in about 25% of Australian homes but has a substantially lower share of viewing and hence carries far less than a proportionate share of advertising (Australian Subscription Television and Radio Association (ASTRA), 2005).

Method

The Sydney metropolitan area was chosen as the focus for this study; it is the single largest population centre in Australia with a population of 4.255 million (Australian Bureau of Statistics, 2004-05). The study is based on data for the 52 week period from the week commencing March 5, 2005 through to the week commencing February 26, 2006.

A report detailing exposure levels to each of the alcohol ads screened on free-to-air television channels in Sydney over the course of the study was purchased from Nielsen Media Research, a global provider of such information. Target Audience Rating Points (TARPs) were

obtained for each of the four target audiences: children (0-12); underage teenagers (13-17); young adults (18-24); and adults aged 25 and over. TARPs are a measure of advertising weight. In general, the higher the TARPs the greater the proportion of target audience exposed to the ad and the more often members of the target audience are exposed to the ad. The TARPs figure for an ad is calculated from the number of target audience individuals exposed to the ad as a proportion of the total target audience, multiplied by 100. For example, if an ad is aired in a particular program that has a viewing audience of 15,000 13-17 year olds, and the total population of 13-17 year olds is 60,000, then that exposure will equate to 25 TARPs for the target audience of 13-17 year olds. If the ad is aired three times during that program, it will equate to 75 TARPs.

Age groupings were based on separating underage teenagers from children, as from age thirteen a substantial increase in experimentation with alcohol occurs (Jernigan, 2001). The most recently available Australian Bureau of Statistics Census of Population and Housing Snapshot (Australian Bureau of Statistics, 2001) was used to provide the age distribution of the population in the greater Sydney metropolitan area. The separation of young adults (18-24) and adults over 25 years coincides with the distinction in the ABAC specifying that all models in television commercials should be over 25 years of age, and is the age by which the incidence of alcohol dependence declines (Jernigan, 2006).

The TARPs information is derived from weekly audience measurement and scheduling data generated by OzTAM, (Australian Television Audience Measurement, 2005) the official television audience monitoring system for Australian television. The weekly audience measurement data details the demographic (and other characteristics) of the viewing audiences for each of the television programs on free-to-air television. These weekly audience measurement data are used by advertisers to develop media plans, the usual aim of which is to

maximise levels of exposure amongst their target audiences. Advertisers are therefore aware of the age distribution of viewers watching the program(s) in which their advertising will be screened before purchasing their advertising spots.

Results

During the period March 2005 to February 2006, 156 different alcohol advertisements representing 50 different brands or sub-brands were aired on Sydney television. Table 1 shows the TARPs for each of these 50 brands and the total TARPs for each of the four age groups of interest. Table 2 shows average weekly TARPs and the average number of ads each age group was exposed to weekly. Table 3 provides a breakdown of the TARPs for each age group by advertised alcohol type.

Exposure levels for different advertisers' campaigns

Table 1 shows that for most brands, the TARPs for adults 25 years and over are the highest for all age groups. However, in six cases the TARPs for 13-17 year olds exceeds that for adults 25 years and over: Becks Beer; Cowboy Liqueur; Jim Beam Bourbon & Cola-White; Jim Beam Bourbon Small-batch; Jim Beam Bourbon-White Label; and Smirnoff Ice. Three of these cases are accounted for by one brand, Jim Beam, which directed 697 TARPs at adults 25 years and over and 809 TARPs at underage 13-17 year olds. In fact, four of the products advertised had their highest TARPs amongst underage teenagers: Becks Beer; Cowboy Liqueur; Jim Beam Bourbon-White Label; and Smirnoff Ice. One question is whether these media schedules represent deliberate targeting or inefficient targeting.

Table 1 also shows that, while adults 25 years and above generally receive the highest TARPs, underage 13-17 year olds are being exposed to alcohol advertising at approximately the same levels as young adults 18-24 years. Overall, 46% of the alcohol brands advertised during the period of the study had higher TARPs amongst teenagers aged 13-17 than amongst young adults aged 18-24, and a further 8% had approximately equal TARPs in these two age groups.

Table 2 shows that while the media plans for alcohol advertising deliver approximately 660 TARPs per week against adults 25 years and over, they deliver almost as many TARPs against 13-17 year olds as they do against 18-24 year old: 426 per week vs 429 respectively. Furthermore, children under 13 are exposed at almost half the level of 18-24 year olds – a considerable 210 TARPs per week for every week of the year. By way of contrast, there were nil TARPs for alcohol moderation campaigns during the study period.

Exposure levels of different product categories

Whilst the different product categories (beer, wine, spirits) accounted for substantially different proportions of total alcohol advertising, Table 3 shows little variation between the different age groups. Beer was the dominant product category advertised, followed by spirits (including ready-to-drink spirits with mixer in a can or bottle) for all age groups.

Discussion

These data indicate a significant level of exposure amongst children (up to 12 years), and teenagers under the legal drinking age (13-17 year olds) to alcohol advertising on television in Australia, and, at least for the year in question, in the absence of any counter-advertising by health authorities. A total TARPs of 10,902 indicates that on average, each child up to 12 years of age living in Sydney was exposed to 109 alcohol ads during the 52 week period of the study. At this level, and assuming exposure levels remain consistent, by the time a child living in Sydney has reached 12 years of age, they have been exposed to around 1,300 alcohol ads as an inadvertent outcome of watching television.

Exposure to alcohol advertising on television of teenagers under the legal drinking age (i.e. 13-17 year olds) is double that of children aged 0-12, and, consistent with King et al (2005), almost equal to exposure levels of young adults aged 18-24 years. On average, underage teenagers were each exposed to 221 alcohol ads over the course of the study. Given ongoing exposure to alcohol advertising, and assuming the levels of exposure remain consistent, the "average" Sydney youth will see more than 2,400 alcohol ads on television before turning 18, which, assuming an average ad length of 30 seconds, equates to watching some 20 hours of alcohol advertising.

Given research suggesting a relationship between ongoing exposure to alcohol advertising and harmful alcohol consumption behaviours amongst adolescents, including age of initiating drinking alcohol (Stacy et al., 2004), consuming alcohol more frequently (Grube, 2002) and consuming more alcohol on a drinking occasion (Grube, 1995), the findings of this study raise a number of important issues. The cumulative exposure of underage Australians to alcohol advertising may have a far greater impact on their levels of alcohol consumption than the

content of alcohol advertising, yet the existing regulatory framework completely omits this key issue. What constitutes an acceptable level of cumulative alcohol advertising needs to be determined through discussions between key stakeholders including the alcohol marketers, public health professionals and government policy-makers.

The level of underage teenagers' exposure to alcohol advertising is disturbingly similar to that of young adults. While the composition of TV programs' audiences will inevitably result in advertising reaching audiences other than target audiences, media planning skills are used to maximise the efficiency of the media buy by minimising 'wastage' to non target audiences. Given the similarity in exposure levels of underage teenagers and young adults, our results suggest that either media planners are less than efficient with respect to 13-17 year olds, or that some alcohol advertisers are actively targeting the under-age market. At the very least our findings suggest that media planners — who are fully aware of the age groupings of the audiences of the television programs during which they schedule their client's advertising – are not actively attempting to minimise exposure levels amongst underage teenagers — nor amongst children under 13 years of age.

The International Center for Alcohol Policies (ICAP) (ICAP Expert Committee, 2006), an industry organisation which includes Beam Global Spirits and Wine as a sponsor (which in turn owns Jim Beam Brands), states in a report on responsible marketing of alcohol that "ICAP's sponsor companies hold themselves to the highest standards by ... targeting only audiences of legal drinking age" (p 1). Similarly, Jim Beam Australia managing director Philip Baldock reportedly said in 2004 "We do not market to minors" (Veldre, 2004). Jim Beam has been criticised before for youth targeting, including though its previous association with Planet X and its current surfing sponsorship support. Our data suggest that this criticism

is well-founded and that industry organisations are not effective vehicles for ensuring 'responsible marketing' of alcohol beverages.

The findings of this study show that the current self-regulatory system in Australia allows substantial levels of exposure of children and teens under 18 years to alcohol advertising on television. The ABAC purports to regulate the content of alcohol advertising, but includes no restrictions in relation to acceptable exposure levels for children and underage youth, and nor does the Australian Association of National Advertisers (AANA) Code for Advertising to Children (Australian Association of National Advertisers, 2006). Children's exposure to alcohol advertising is specifically regulated by the Commercial Television Industry Code of Practice. However, this study shows that children are being exposed to 210 TARPs of alcohol advertising per week, and underage teenagers are exposed to the same level of alcohol advertising as are young adults (425 TARPs and 430 TARPs respectively.)

The Alcoholic Beverages Advertising Code (Distilled Spirits Industry Council of Australia Inc., 2003) provides alcohol advertisers with guidelines relating to content and executions within alcohol advertisements that are intended to assist alcohol companies and their advertising agencies develop socially responsible advertising. Expanding these guidelines to encompass acceptable levels to which underage Australians can be exposed to a particular campaign could be a first step towards improving this situation. Similar guidelines in the USA have been found to generate some improvement in a relatively short timeframe (Center on Alcohol Marketing and Youth, 2005a; The Center on Alcohol Marketing and Youth, 2005b). The alcohol industry's voluntary standard in that country, adopted by beer and distilled spirits trade associations in the fall of 2003, stipulates that alcohol advertisements not be placed in programs with more than a 30% youth audience (12 to 20 years old). However, there have been calls for this level to be reduced to reflect this age grouping's proportion of

the overall population (Center on Alcohol Marketing and Youth, 2005b). Based on the population in Sydney (Australian Bureau of Statistics, 2001), a similar guideline for alcohol advertisers would be not advertising on programs where children and underage teenagers aged 2-17 form greater than 21% of the viewing audience.

Future research is recommended to determine the extent to which alcohol advertising during sporting events broadcast on Australian television contributes to exposure of underage Australians to alcohol advertising. Although alcohol advertising is restricted during children's' television viewing times, advertisements for alcoholic drinks *are* permitted during daytime hours as an accompaniment to the live broadcast of a sporting event on weekends and public holidays (Australian Broadcasting Authority, 2004). Additionally, research into exposure levels on cable-television is also required, given recent findings in the USA indicating alcohol marketers may be shifting a greater proportion of their budgets to such media (Center on Alcohol Marketing and Youth, 2005a).

Conclusion

Children and underage teenagers are exposed to substantial levels of alcohol advertising on television in Australia, with a considerable body of research finding that such advertising directly influences their subsequent levels of alcohol consumption. The current self-regulatory system for minimising such exposure appears to be ineffective in Australia, with the findings further suggesting that some alcohol marketers appear to be deliberately targeting underage 13-17 year old teenagers through their television advertising. Given the previously demonstrated failure of the industry to self-regulate (Jones and Donovan, 2002), there is an urgent need for government intervention to improve the efficacy of the regulatory framework

for alcohol advertising in Australia. In particular, the cumulative figure is a neglected issue that needs to be discussed.

Acknowledgements

This research was supported by The Australian Research Council and a Curtin Business School Area of Research Excellence grant. The Centre for Behavioural Research in Cancer Control is part funded by the Cancer Council of Western Australia.

References

- Australian Association of National Advertisers (AANA). Code for Advertising to Children, Sydney, 2006.
- Australian Broadcasting Authority: Commercial Industry Code of Practice, Sydney, ABA, 2004.
- Australian Bureau of Statistics Census of Population and Housing, Canberra: ABS, 2001.
- Australian Bureau of Statistics Regional Population Growth, Australia, 2004-05, Canberra: ABS, 2004-05.
- Australian Subscription Television and Radio Association (ASTRA). Television Review of 2004: The Australian television market, Pyrmont: ASTRA 2005.
- Australian Television Audience Measurement (OzTAM). Terms and definitions. Australian Television Audience Measurement, Sydney: OzTAM, 2005.
- Bonomo, Y. Adolescent alcohol problems: Whose responsibility is it anyway? MJA **183**: 430-432, 2005.
- Carroll, T. and Donovan, R. Alcohol marketing on the Internet: new challenges for harm reduction. Drug and Alcohol Review **21:** 83-91, 2002.
- Center on Alcohol Marketing and Youth. Alcohol advertising on television, 2001-2004: The move to cable, Washington DC: CAMY, 2005a.
- Center on Alcohol Marketing and Youth. Striking a balance: Protecting youth from overexposure to alcohol ads and allowing alcohol companies to reach the adult market, Wahsington DC: CAMY, 2005b.
- Center on Alcohol Marketing and Youth. The Toll of Underage Drinking, Washington DC: CAMY, 2005c.
- Chikritzhs, T. and Pascal, R. National Alcohol Indicators Bulletin No. 6, Perth: Curtin University, 2004.

- Chikritzhs, T., Pascal, R. and Jones, P. National Alcohol Indicators Bulletin No. 7, Perth: Curtin University, 2004.
- Collins, D. and Lapsley, H. Counting the cost: estimates of the social costs of drug abuse in Australia in 1998-9, Monograph series no. 49: Canberra: Commonwealth of Australia, 2002.
- Distilled Spirits Industry Council of Australia Inc. The Alcohol Beverages Advertising Code.

 South Melbourne: DSICA, 2003.
- Donovan, K. The content and frequency of alcoholic beverage advertisements and sales promotions in popular magazines, Master of Public Health, Perth: Curtin University of Technology, 2003.
- Donovan, K., Donovan, R., Howat, P. and Weller, N. Magazine Alcohol Advertising

 Compliance with the Australian Alcoholic Beverages Advertising Code. Drug and

 Alcohol Review, 26: 73-82, 2007.
- Duffy, M. Advertising in demand systems for alcoholic beverages and tobacco: A comparison study. Journal of Policy Modeling **7:** 557-577, 1995.
- Ellickson, P., Collins, R., Hambarsoomians, K. and McCaffrey, D. Does alcohol advertising promote adolescent drinking? Results from a longitudinal assessment. Addiction **100**: 235-246, 2005.
- Fleming, K. and Thorson, E. Alcohol advertising exposure and perceptions: links with alcohol expectancies and intentions to drink or drinking in underaged youth and young adults.

 Journal of Health Communication 9: 3-29, 2004.
- Francis, D. New studies to call for tighter reins on alcohol industry. Christian Science Monitor **8:** 17, 2003.
- Franke, G. and Wilcox, G. Alcoholic beverage advertising and consumption in the United States 1964-1984. Journal of Advertising **16:** 22-30, 1987.

- Gangadharbatla, H. and Wilcox, G. Does beer advertising affect overall consumption in the United States? Paper presented, American Academy of Advertising Conference, Hong Kong, 2005.
- Garfield, C., Chung, P. and Rathouz, P. Alcohol advertising in magazines and adolescent readership. JAMA **289**: 2424-2429, 2003.
- Glantz, S. Editorial: preventing tobacco use: the youth access trap. American Journal of Public Health **86**, 1996.
- Grant, B. and Dawson, D. Age of onset of alcohol use and its association with DSM-IV alcohol misuse and dependence: Results from the National Longitudinal Alcohol Epidemiologic Survey Journal of Substance Abuse **9:** 103-110, 1997.
- Grube, J. Television Alcohol Portrayals, Alcohol Advertising and Alcohol Expectancies among children and adolescents, In: Effects of the mass media on the use and abuse of Alcohol, Bethesda: National Institute on Alcohol misuse and Alcoholism, 1995, pp. 105-121.
- Grube, J. Alcohol advertising—a study of children and adolescents: preliminary results: Prevention Research Centre, 2002.
- Hastings, G., Anderson, S., Cooke, E. and Gordon, R. Alcohol marketing and young people's drinking: a review of the research. Journal of Public Health Policy **26:** 296-311, 2005.
- Hill, S., Thomsen, S., Page, R. and Parrott, N. Alcohol advertisements in youth-oriented magazines: persuasive themes and responsibility messages. American Journal of Health Education **36:** 258-265, 2005.
- Hollingworth, W., Ebel, B., McCarty, C., Garrison, M., Christakis, D. and Rivara, F.

 Prevention of deaths from harmful drinking in the United States: The potential effects of tax increases and advertising bans on young drinkers. J.Stud.Alcohol 67: 300-308, 2006.

- ICAP Expert Committee. Responsible drinks marketing: shared rights and responsibilities, Washington: International Centre for Alcohol Policies, 2006.
- Jernigan, D. Global Status Report: Alcohol and Young People, World Health Organization, Geneva, 2001.
- Jernigan, D. Editorial: Importance of reducing youth exposure to alcohol advertising. Arch Pediatr Adolesc Med **160**: 100-102, 2006.
- Jernigan, D. and Mosher, J. Editors' introduction: Alcohol marketing and youth public health perspectives. Journal of Public Health Policy **26:** 287-291, 2005.
- Jones, S. and Donovan, R. Messages in alcohol advertising targeted to youth. Australian and New Zealand Journal of Public Health **25:** 126-131, 2001.
- Jones, S. and Donovan, R. Self-regulation of Alcohol Advertising: Is it working for Australia.

 Journal of Public Affairs 2: 153-165, 2002.
- King, E, Taylor, J, Carroll, T. Australian alcohol beverage advertising in mainstream

 Australian media 2003 to 2005: Expenditure, exposure and related issues. Research

 and Marketing Group, Dept of Health and Ageing: Sydney 2005
- Lewis, M. Alcohol in Australia: the intertwining of social and personal histories, Dulwich Centre Newsletter, Adelaide: Dulwich Centre Publications Pty. Ltd.,1997.
- Lynch, B. and Bonnie, R. E. Growing up tobacco free: Preventing nicotine addiction in children and youths, Washington DC: Institute of Medicine, National Academy Press, 1994.
- McBride, N., Farrington, F. and Milford, R. What harms do young Australians experience in alcohol use situations? Australian & New Zealand Journal of Public Health **24:** 54-59, 2000.
- Miller, T., Levy, D., Spicer, R. and Taylor, D. Societal costs of underage drinking. J Stud. Alcohol **67:** 519-528, 2006.

- New South Wales Health and The Cancer Council NSW. Alcohol Statistical Bulletin: Self reported behaviours of secondary school students NSW 1999, Sydney: NSWHealth, 1999.
- Pechmann, C., Levine, L., Loughlin, S. and Leslie, F. Impulsive and Self-Conscious:

 Adolescents Vulnerability to Advertising. Journal of Public Policy and Marketing 24:
 202-221, 2005.
- Roberts, G. Analysis of alcohol promotion and advertising: Centre for Youth Drug Studies, Melbourne: Australian Drug Foundation, 2002.
- Saffer, H. Economic issues in cigarette and alcohol advertising. Journal of Drug Issues **28:** 781-792, 1998.
- Saffer, H. Alcohol advertising and youth. J Stud. Alcohol 14: 173-181, 2002.
- Slater, M. Male adolescent's reactions to TV beer advertisements: The effect of sports content and programming context. J Stud. Alcohol **57:** 425-433, 1996.
- Snyder, L., Fleming Millici, F., Slater, M., Sun, H. and Yulia, S. Effects of alcohol advertising exposure on drinking among youth. Archives of Pediarics & Adolescent Medicine 160: 18-24, 2006.
- Stacy, A., Zogg, J., Unger, J. and Dent, C. Exposure to televised alcohol ads and subsequent adolescent alcohol use. American Journal of Health Behavior **28:** 498-509, 2004.
- Veldre, D. Jim Beam tests the water with new brand campaign, Chatswood: B&T Weekly, 2004.
- Weschler, H., Dowdall, G., Maenner, G., Gledhill-Hoyt, J. and Lee, H. Changes in binge drinking and related problems among American college students between 1993-1997.

 Results of the Harvard School of Public Health College Alcohol Study. Journal of American College Health 47: 57-68, 1998.

- Winter, M. Factual or flawed?: Using market response models to establish the impact of alcohol advertising on adolescents. Paper presented to the 3rd Australasian social and Not-for-profit marketing conference, Newcastle, 2006.
- Wolburg, J. Drawing the line between targeting and patronizing: how "vulnerable" are the vulnerable? Journal of Consumer Marketing **22:** 287-288, 2005.

Table 1. Total TARPs and TARPs for each alcohol brand's advertising by age group.

(For alcohol advertisements screened on Sydney free-to-air television March 2005- Feb 2006)

		Underage	Young	Mature
	Children	teenagers	adults	adults
	0-12 years	13-17 years	18-24 years	25+ years
TOTAL TARPs	10902	22143	22316	34259
Absolut Cut Vodka	249	456	498	816
Baileys Irish Cream Liqueur	319	717	629	1005
Becks Beer	214	606	479	590
Boags Draught Beer	383	706	705	1158
Boags Premium Lager Beer	94	156	200	425
Boags St George Beer	276	729	729	970
Brown Brothers Moscato Wine	31	53	48	72
Brown Brothers Pinot Grigio	21	39	51	71
Brown Brothers Wine Rng	1	4	4	12
Bundaberg Rum	657	1043	1012	1799
Bundaberg Rum & Cola	622	976	1018	1863
Bundaberg Rum Dry & Lime Mix	224	338	279	460
Carlton Crown Lager	154	264	254	411
Carlton Draught Beer	529	1090	1055	1455
Cascade Premium Lager/Light Beer	203	440	411	774
Castlemaine XXXX Gold Lager	648	1491	1471	2295
Corona Extra Beer	131	276	261	426
Cougar Bourbon	206	322	401	493
Cougar Cola & Dark Rum	72	140	127	197
Cougar Dark Rum	43	103	96	153
Cowboy Liqeur	158	407	386	382
Hahn Premium Light Beer	384	846	884	1517
Half Mile Creek Wines Corp	248	488	371	651
Heineken Lager Beer	181	457	503	734
Jim Beam Bourbon & Cola-White	100	348	374	314
Jim Beam Bourbon-Small Batch	66	191	211	187
Jim Beam Bourbon-White Label	56	270	234	196
Johnnie Walker Black Lbl Sctch	50	88	103	218
Johnnie Walker Corporate	323	489	584	1138
Johnnie Walker Red Label Sctch	20	56	77	75
Johnnie Walker White Label & Cola	166	290	346	613
Johnnie Walker-Competition	9	8	5	35

Lindemans Bin 50 Shiraz	84	169	166	358
Lindemans Bin 65 Chardonay	79	147	116	278
Orlando Jacobs Creek Chard/Pinot	89	242	198	300
Orlando Jacobs Creek Chardonnay	10	28	65	71
Orlando Jacobs Creek Reserve Shiraz	12	5	21	63
Orlando Jacobs Creek Shiraz		2	6	3
Orlando Jacobs Creek Sparkling Rose	255	551	520	793
Saltram Wines Corp	179	344	388	800
Smirnoff Ice	435	1250	1207	1147
Stella Artois Premium Lager	63	140	171	251
Tooheys Extra Dry Beer	289	768	767	913
Tooheys New Draught Beer	677	1450	1387	2068
Victoria Bitter Beer	785	1334	1392	2115
Victoria Bitter Beer-Comp	34	46	67	129
Wild Turkey Bourbon	120	133	171	284
Wolf Blass Wine Corporate	704	1120	1339	2378
Wolf Blass Wine-Competition	62	147	177	248
Wyndham Estate Bin 555 Shiraz	191	382	357	557

(Source: OzTam, 2005)

Table 2. Weekly alcohol advertising TARPs and average number of ads exposed to by age group.

(For alcohol advertisements screened on Sydney free-to-air television March 2005-Feb 2006)

Age group	Children 0-12 years	Under-age teenagers 13-17 years	Young adults 18-24 years	Mature adults 25 years & over
Annual TARPs for alcohol advertising	10902	22143	22316	34259
Weekly TARPS for alcohol advertising	210	426	429	659
Number of alcohol ads seen on average per week	2.1	4.3	4.3	6.6

Table 3. TARPs by alcohol category for each age group.

(For alcohol advertisements screened on Sydney free-to-air television March 2005- Feb 2006)

ALCOHOL TYPE	Children	Underage Teenagers	Young Adults	Mature Adults
	(0-12 years)	(13-17 years)	(18-24 years)	(25+ years)
BEER TARPS	5,045	10,799	10,736	16,231
	(46%)	(49%)	(48%)	(47%)
SPIRITS TARPS	1,799	3,159	3,392	5,394
	(17%)	(14%)	(15%)	(16%)
PRE-MIX / READY-TO-DRINK TARPS	1,619	3,342	3,351	4,594
	(15%)	(15%)	(15%)	(13%)
WINE TARPS	1,966	3,721	3,827	6,655
	(18%)	(17%)	(17%)	(19%)
LIQUEUR TARPS	477	1,124	1,015	1,387
	(4%)	(5%)	(5%)	(4%)
TOTAL TARPS	10,902	22,143	22,316	34,259
	(100%)	(100%)	(100%)	(100%)