

Alcohol Promotion via Mobile Phone Apps: Gaps in Impact Evaluation and Regulatory Coverage

*Lynne Eagle**, James Cook University, lynne.eagle@jcu.edu.au

Stephan Dahl, University of Hull, s.dahl@hull.ac.uk

David R. Low, James Cook University, daviv.low@jcu.edu.au

Tracey Mahoney, James Cook University, tracey.mahony@jcu.edu.au

Abstract

This paper reviews alcohol mobile phone applications (“apps”) which carry alcohol promotional material. It reviews literature relevant to alcohol advertising in social media, particularly on the youth market, and the efficacy of current regulatory activity. The paper identifies a large number of free pro-alcohol apps as well as weaknesses in current legislation restricting alcohol promotion and questions the ethical stance of organizations such as Google and Apple in providing access platforms. The paper concludes with recommendations for further research into the actual impact of apps and other forms of social and user generated content activity.

Keywords: alcohol promotion, phone apps, mobile marketing, regulatory effectiveness, business ethics.

Track: Marketing Communications

Introduction

Alcohol is not only the “drug of choice” among young people (Mart, 2011, p. 889), it is also integrated into social life (Wettlaufer et al., 2012). Alcohol misuse accounts for approximately 2.5 million deaths worldwide per year, including over 300,000 young people between 15 and 29 years of age (World Health Organisation, 2010). It also contributes 4.5% of total measured disability-adjusted life years, higher than tobacco at 3.7% and illicit drugs at 0.9% (Donovan, Fielder, & Jalleh, 2011);. Alcohol misuse imposes significant costs on society through factors such as reduced workplace productivity and the impact of alcohol-fuelled violence (Manning, Smith, & Mazerolle, 2013).

This paper reviews the extant literature on the impact of excess alcohol consumption, focuses on alcohol advertising via mobile phone applications and the efficacy of current regulatory activity, and reviews the theoretical concepts used to explain young people’s involvement with alcohol promotional activity, particularly in social media. .

We focus on alcohol-related mobile phone applications (“apps”) as they (“apps”) have received very little attention relative to other electronic platforms such as Facebook (see, for example, Fournier & Clarke, 2011) in spite of high penetration. Smartphone penetration is high in most developed countries: 65% in Australia, 62% in the UK – higher than the USA at 56% with all three countries expected to achieve approximately 80% penetration by 2017 (Google / Ipsos Media CT, 2013). Ownership of mobile phones among teenagers is estimated at more than 75% (O’Keeffe & Clarke-Pearson, 2011). We have been unable to locate any studies that investigate the nature of alcohol-related phone apps.

Adverse Effects of Alcohol

Alcohol is recognised as the third leading cause of preventable and premature disease and disability globally (Coltart & Gilmore, 2012). Alcohol is causally linked to cancer, cardiovascular disease, liver disease, diabetes and several other serious diseases (Parry, Patra & Rehm, 2011) as well as injury, communicable diseases such as HIV and TB (Parry, Patra & Rehm, 2009). Young people are claimed to be particularly vulnerable to the harmful effects of excess alcohol consumption (Anderson, Chisholm, & Fuhr, 2009). Heavy alcohol consumption during adolescence can permanently impair brain development; there is also an association between drinking levels within this age group and road traffic accidents, depression, suicide and a range of sexually transmitted diseases (Anderson, 2009).

In 2010 the direct costs for Australia alone were estimated as being in excess of AU\$14.35 billion per annum (Manning, et al., 2013), with a further AU\$6.807 in indirect costs from the negative impacts of another person's drinking (Lazlett et al., 2010). Against this is should be balanced the tax revenue of AU\$7.075 billion in 2010 (Manning, et al., 2013), of which over AU\$100 million is estimated to be derived from under-age drinkers (Donovan, et al., 2011), this equates to AU\$430 per person (Doran et al., 2009).

Alcohol and Marketing

The alcohol industry is estimated to have spent more than over AU\$125 million in Australia alone in 2007 on traditional media advertising, with two or three times that amount estimated to be spent on sponsorship and point of sale (Australian Chronic Disease Prevention Alliance, undated). The amount invested in various digital technologies such as mobile phones, online video channels, interactive games, and social networks such as Facebook and Twitter is unknown.

Alcohol advertising shapes attitudes and behaviours, normalizing and encouraging drinking and potentially in unsafe amounts (Dobson, 2010; Parry, Burnhams, & London, 2012; Pettigrew et al., 2012). Significant associations have been found between involvement with alcohol marketing and both current drinking behaviours and future drinking intentions and between movie alcohol use exposure and binge drinking (Gordon et al., 2011; Hanewinkel et al., 2012).

Engaging with web-based alcohol marketing is claimed to increase the odds of being a drinker by 98%; engagement with traditional marketing forms increases the odds by 51% (Lin et al., 2012). It is claimed that social networks contribute to pro-alcohol environments and thus encourage drinking as they blur brand-specific promotional activity and user-generated content to integrate real-world and on-line activity and both normalize and promote drinking occasions (McCreanor et al., 2013).

Self-identity is important to adolescents and young adults and alcohol is a key component of identity exploration (Ridout, Campbell, & Ellis, 2012) and friendship practice in western society (Niland et al., 2013). Adolescents and young adults frequently display alcohol content or references on social networking sites in order to appear 'cool' (Moreno et al., 2009) or to create a distinct identity for themselves (Sashittal, Sriramachandramurthy, & Hodis, 2012). The potential for the creation of 'intoxicogenic social identities' (Griffiths & Casswell, 2010, p. 525) gives rise to concern, as do claims that the alcohol industry leverages off self-identity formation to normalize daily alcohol consumption (Nicholls, 2012). This is of particular concern given reports of children lying about their ages in order to be able to access social media services (O'Keeffe & Clarke-Pearson, 2011).

Effective Regulations?

In many countries, including Australia and the UK, the regulatory systems are based on industry self-regulation, practices which have been criticised as ineffective (Jones & Gordon, 2013). A challenge to effective regulation of 21st century marketing activity is the global nature of Internet-based promotional activity and the lack of consistent regulation across countries. For example, the UK has specific regulations relating to product placement, but Australia does not. On-line images, including Facebook and YouTube content promoting excessive drinking have been deemed irresponsible in the UK, as have images that appear to feature people under the age of 25 (see, for example, Hi Spirits (January 2013), Aston Manor Brewery (June 2012), Cell Drinks, (August 2011), (Advertising Standards Authority, 2013).

A landmark ruling was made by the Australian Advertising Standards Bureau in September 2012 that “(i) a brand’s Facebook page is a marketing communication tool, and (ii) all contents on the page fall under the industry’s self-regulatory code of ethics, including consumer-created content such as user-generated comments and photos” (Brodmerkel & Carah, 2013). This is particularly significant given that engagement with, and reproduction and dissemination of alcohol marketing messages is seen as socially desirable by young people (Ridout, et al., 2012).

Perceived drinking behaviour and approval of drinking are strong predictors of how much college students drink (Fournier & Clarke, 2011) even though perceived normative behaviour may be inaccurate. However, perceived social norms regarding desirable behaviours will outweigh education and information-based interventions which have been found to be ineffective in reducing alcohol-related harm (Anderson, et al., 2009). Attempts to alter social norms will be countered by the pro-consumption messages of the alcohol industry (Pettigrew, et al., 2012).

While marketing communication is only one of a multitude of influences on alcohol use, with parental and peer influences also impacting on decisions (Kinard & Webster, 2010), partial or complete bans on alcohol advertising have been estimated to yield benefits of at least AU\$2.45 billion and AU\$3.86 billion respectively in Australia alone (Collins & Lapsley, 2008). Recent proposals to ban all alcohol advertising in South Africa (Jernigan, 2013) will no doubt be followed with interest.

Some writers stress the difficulties of effective enforcement of bans (Nicholls, 2012) due to a lack of a precise definition of what constitutes advertising or marketing communication. There are frequent references to alcohol consumption in popular music (Primack, Nuzzo, Rice, & Sargent, 2012), a study of popular movies found alcohol content in 83%, including 36% of G/PG-rated movies (Dal Cin, Worth, Dalton, & Sargent, 2008), although this study does not report on whether responsible or irresponsible drinking was portrayed. Similarly, 75% of top rating US TV shows featured alcohol use (J. D. Brown & Bobkowski, 2011). While advertising in children’s programmes is not permitted, approximately half of alcohol television advertisements appear during times when children are likely to be watching (Pettigrew, et al., 2012).

Research Objectives and Methodology

To assess the quantity and nature of apps-based activity and to analyze for potential effects against the fragmented extant literature. A multi-phase research project was undertaken

whereby a search was conducted of Android and Apple mobile phone Apps using the search terms ‘alcohol’, ‘drinking’, ‘drunk’, ‘alcoholic’, and ‘alco*’. Both sites were used as iPhone users represent only ¼ of Smart Phone users and tend to be from upper socio-economic groups (Abroms et al., 2011).

Analysis

A total of 282 apps were identified, with far more Android-based apps (215) than there are iPhone apps (67). The Apps were then coded into free (241: 85%) versus paid apps (41: 15%), and pro-consumption or anti-consumption/drinking moderation. The large amount of pro-consumption content is a concern with 221 (78%) of the 282 apps categorized as pro-alcohol consumption. Significantly, when design principles were examined 37% of the pro-alcohol apps were designed to reinforce positive behavior towards alcohol consumption and 55% to enable users to track their own desired behavior.

Constraints including the request for age verification, questioning to ensure age correctness and ratings warnings as to App content were examined. There were no protective content age-restricted security measures observed in the sample for either Android or Apple Apps. All of the cited theories are descriptive – none provide evidence of analytical or predictive application; nor specify the relationships between variables, and only three provide domain limitations in which the theory has been used. There is an urgent need to critically review and refine the theoretical foundations of research in the area.

Table 1: Design Principles (based on Andrew, Borriello, Fogarty, 2007)

Persuasive Strategy	Description	Anti-drinking		Pro-drinking	
		n = 61		n = 221	
		No.	%	No.	%
Reduction	Making a complex task simpler	13	21	8	4
Tunnelling	Guided persuasion; giving control over to an expert	10	16	5	2
Tailoring	Customization; providing more relevant information to individuals	11	18	16	7
Suggestion	Intervene at the right time with a compelling suggestion	11	18	5	2
Self-monitoring	Automatically tracking desired behaviour	19	31	121	55
Surveillance	Observing one’s behaviour publicly	0	0	1	1
Conditioning	Reinforcing target behaviour	19	31	82	37
Total		83		238	

Note: columns sum to more than 100% due to use of multiple strategies

The design of electronic games is known to impact on their success, however there is no universal formula for success. We therefore conducted a comparison of the two sets of apps to provide insights into how the latter may be strengthened. Using the Persuasive Strategy Framework originally developed by Andrew, Borriello, Fogarty (2007) for persuasive gaming, we coded all apps (results see table 1). It appears that anti-alcohol apps employ a wider variety of persuasive strategies; however, we noted 37% of the pro-alcohol apps were

designed to reinforce positive behavior towards alcohol consumption and 55% to enable users to track their own desired behaviour (i.e. consumption). In the pro-alcohol sample were Apps which appear to be targeted at specific groups including the diet and health conscious markets. For example, “Drink Thin” promotes drinking an alcohol only diet as a weight loss measure, “VegeTippie Free” which provides an alcoholic database for vegetarian drinkers. Anti-alcohol Apps varied in their approach between promoting abstinence, moderation or drinking and as with “T1DFriendAlcohol”, providing safe drinking information to enable Type 1 Diabetes sufferers to consume alcohol by taking recommended precautions. Pro-alcohol Apps promoted the heavy consumption of alcohol in Apps like “Let’s get WASTED! Drinking Game” that provides users with an unusual mix of encouraging intoxication and using the traditional alcohol calculator and Breath Analysing features to compete with friends for the highest alcohol readings. Apps were found that have specific appeal for the youth market including “Campus Beer Run” and the “Drunk College Sorority Girls & Frat Boy Party Edition”, combining alcohol sex and fighting into the gaming features.

The use of these strategies would appear to be in breach of the spirit of existing regulations. Given the anti-alcohol or drinking moderation apps use far fewer design principles than the pro-alcohol apps do, the relative effectiveness of the two sets of apps warrants exploration, with the possibility that the anti-alcohol / alcohol moderation-related apps could benefit from using the types of persuasive strategies that are currently used by the pro-alcohol apps.

Conclusion

The proportion of pro-alcohol apps and the extent to which they appear to use techniques to reinforce alcohol consumption is concerning. In the context of behaviour change, a key criticism is that interventions are often ‘inspired’ by theory rather than being used to specify “the critical techniques or procedures responsible for behaviour change”(Michie & Abraham, 2004, p. 30). A comprehensive understanding of these factors is, we believe, essential in the future design and implementations of any interventions aimed at combatting alcohol promotional activity. As Eagle et al. (2013) obtained similar findings with regards to tobacco apps and little is known about the actual impact of apps overall, , research is needed into the effects of these types of apps to enable predictions of their impact and to guide any future regulatory provisions.

References

- Advertising Standards Authority. (2013). Alcohol Adjudications. Retrieved from <http://www.asa.org.uk/Rulings/Adjudications.aspx?SearchTerms=alcohol#results>
- Anderson, P. (2009). Is it time to ban alcohol advertising? *Clinical Medicine*. 9 (2), 121-124.
- Anderson, P., Chisholm, D., & Fuhr, D. C. (2009). Effectiveness and cost-effectiveness of policies and programmes to reduce the harm caused by alcohol. *The Lancet*. 373 (9682), 2234-2246.
- Andrew A., Borriello G., Fogarty J. (2007). Toward a systematic understanding of suggestion tactics in persuasive technologies. *Persuasive Technology*. (4744),259-270.
- Atkinson, A., Elliott, G., Bellis, M., & Sumnall, H. (2011). Young people, alcohol and the media. *Joseph Rowntree Foundation*.
- Australian Chronic Disease Prevention Alliance. (undated). Marketing and promotion of alcohol. Position Statement. Retrieved from <http://www.cancer.org.au/content/pdf/ACDPA/110930-Final-ACDPA-PS-Alcohol-advertising.pdf>

- Bertholet, N., Gaume, J., Faouzi, M., Daeppen, J.-B., & Gmel, G. (2011). Perception of the amount of drinking by others in a sample of 20-year-old men: The more I think you drink, the more I drink. *Alcohol and alcoholism*. 46 (1), 83-87.
- Brodmerkel, S., & Carah, N. (2013). Alcohol brands on Facebook: the challenges of regulating brands on social media. *Journal of Public Affairs*. On line editon.
- Brown, J. D., & Bobkowsky, P. S. (2011). Older and Newer Media: Patterns of Use and Effects on Adolescents' Health and Well-Being. *Journal of Research on Adolescence*. 21 (1), 95-113.
- Brown, R., & Gregg, M. (2012). The pedagogy of regret: Facebook, binge drinking and young women. *Continuum*. 26 (3), 357-369.
- Brown, V. R., & Vaughn, E. D. (2011). The writing on the (Facebook) wall: The use of social networking sites in hiring decisions. *Journal of Business and Psychology*. 26 (2), 219-225.
- Chikritzhs, T., Allsop, S. J., Moodie, A. R., & Hall, W. D. (2010). Per capita alcohol consumption in Australia: will the real trend please step forward. *Med J Aust*. 193 (10), 1-4.
- Collins, D. J., & Lapsley, H. M. (2008). *The costs of tobacco, alcohol and illicit drug abuse to Australian society in 2004/05*: Department of Health and Ageing Canberra.
- Coltart, C. E., & Gilmore, I. T. (2012). The need for a global alcohol strategy: 'upscaling the issue in a downstream environment'. *Clinical Medicine*. 12 (1), 29-34.
- Dal Cin, S., Worth, K. A., Dalton, M. A., & Sargent, J. D. (2008). Youth exposure to alcohol use and brand appearances in popular contemporary movies. *Addiction*. 103 (12), 1925-1932.
- Dobson, C. (2010). *Alcohol Marketing and Young People: Time for a New Policy Agenda*. Canberra: Australian Medical Association.
- Donovan, R. J., Fielder, L., & Jalleh, G. (2011). Alcohol advertising advocacy research no match for corporate dollars: The case of Bundy R Bear. *Journal of Research for Consumers*. 20, 1-13.
- Doran, C. M., Shakeshaft, A. P., Hall, W., & Petrie, D. (2009). Alcohol industry and government revenue derived from underage drinking by Australian adolescents 2005. *Addictive behaviors*. 34 (1), 75-81.
- Eagle, L., Dahl, S., Low, D. R. & Mahony, T. (2013). Troubling Thoughts about Tobacco Promotion in the On-line Environment. In proceedings of the 2013 ANZMAC conference.
- Foster, S. E., Vaughan, R. D., Foster, W. H., & Califano Jr, J. A. (2006). Estimate of the commercial value of underage drinking and adult abusive and dependent drinking to the alcohol industry. *Archives of Pediatrics & Adolescent Med*. 160 (5), 473 -478.
- Fournier, A. K., & Clarke, S. W. (2011). Do college students use facebook to communicate about alcohol? an analysis of student profile pages. *Cyberpsychology: journal of psychosocial research on cyberspace*. 5 (2), 2-2.
- Fournier, A. K., Hall, E., Rieke, P., & Storey, B. (2013). Alcohol and the social network: Online social networking sites and college students' perceived drinking norms. *Psychology of Popular Media Culture*. 2 (2), 86 -95.
- Google / Ipsos Media CT. (2013). Our Mobile Planet. 2013, Retrieved from <http://www.thinkwithgoogle.com/mobileplanet/en/>
- Gordon, R., Harris, F., Marie Mackintosh, A., & Moodie, C. (2011). Assessing the cumulative impact of alcohol marketing on young people's drinking: Cross-sectional data findings. *Addiction Research & Theory*. 19 (1), 66-75.

- Gordon, R., Moodie, C., Eadie, D., & Hastings, G. (2010). Critical social marketing - The impact of alcohol marketing on youth drinking: Qualitative findings. *International Journal of Nonprofit and Voluntary Secotr Marketing*. 15 (3), 265-275.
- Griffiths, R., & Casswell, S. (2010). Intoxicogenic digital spaces? Youth, social networking sites and alcohol marketing. *Drug and alcohol review*. 29 (5), 525-530.
- Hanewinkel, R., Sargent, J. D., Poelen, E. A., Scholte, R., Florek, E., Sweeting, H., et al. (2012). Alcohol consumption in movies and adolescent binge drinking in 6 European countries. *Pediatrics*. 129 (4), 709-720.
- Hellman, M. (2011). Studying young recipients of alcohol marketing-Two research paradigms and their possible consolidation. *Nordic Studies on Alcohol and Drugs*. 28 (5-6), 415-431.
- Jernigan, D. (2013). Why South Africa's proposed advertising ban matters. *Addiction*. 108, 1183 - 1185.
- Jones, S. C., & Gordon, R. (2013). Regulation of alcohol advertising: Policy options for Australia. *Evidence Base*. 1 (2), 1 - 37.
- Kinard, B. R., & Webster, C. (2010). The Effects of Advertising, Social Influences, and Self-Efficacy on Adolescent Tobacco Use and Alcohol Consumption. *Journal of Consumer Affairs*. 44 (1), 24-43.
- Lazlett, A.-M., Catalano, P., Chikritzhs, T., Dale, T., Doran, C. M., Ferris, J., et al. (2010). *The Range and Magnitude of Alcohol's Harm to Others*. Canberra: Alcohol Education and Rehabilitation Foundation.
- Lee, G. A., & Forsythe, M. (2011). Is alcohol more dangerous than heroin? The physical, social and financial costs of alcohol. *International Emergency Nursing*. 19 (3), 141-145.
- Lin, E.-Y., Caswell, S., You, R. Q., & Huckle, T. (2012). Engagement with alcohol marketing and early brand allegiance in relation to early years of drinking. *Addiction Research & Theory*. 20 (4), 329-338.
- Livingstone, S., & Brake, D. R. (2010). On the rapid rise of social networking sites: New findings and policy implications. *Children & society*. 24 (1), 75-83.
- Manning, M., Smith, C., & Mazerolle, P. (2013). The societal costs of alcohol misuse in Australia. *Trends and issues in crime and criminal justice*. April (454), 1 -6..
- Mart, S. M. (2011). Alcohol marketing in the 21st century: new methods, old problems. *Substance Use & Misuse*. 46 (7), 889-892.
- McCreanor, T., Lyons, A., Griffin, C., Goodwin, I., Moewaka Barnes, H., & Hutton, F. (2013). Youth drinking cultures, social networking and alcohol marketing: implications for public health. *Critical public health*. 23 (1), 110-120.
- Montgomery, K. C. (2011). Balancing the Needs of Young People in the Digital Marketplace. *Journal of Children and Media*. 5 (3), 334-337.
- Moreno, M. A., Briner, L. R., Williams, A., Walker, L., & Christakis, D. A. (2009). Real use or “real cool”: adolescents speak out about displayed alcohol references on social networking websites. *Journal of Adolescent Health*. 45 (4), 420-422.
- Nicholls, J. (2012). Everyday, everywhere: alcohol marketing and social media—Current Trends. *Alcohol and alcoholism*. 47 (4), 486-493.
- Niland, P., Lyons, A. C., Goodwin, I., & Hutton, F. (2013). “Everyone can loosen up and get a bit of a buzz on”: Young adults, alcohol and friendship practices. *International Journal of Drug Policy*. <http://dx.doi.org/10.1016/j.drugpo.2013.05.013>
- O'Keeffe, G. S., & Clarke-Pearson, K. (2011). The impact of social media on children, adolescents, and families. *Pediatrics*. 127 (4), 800-804.

- Parry, C. D., Burnhams, N. H., & London, L. (2012). A total ban on alcohol advertising: Presenting the public health case. *SAMJ: South African Medical Journal*. 102 (7), 602-604.
- Parry, C. D., Patra, J., & Rehm, J. (2011). Alcohol consumption and non-communicable diseases: epidemiology and policy implications. *Addiction*. 106 (10), 1718-1724.
- Parry, C. D., Rehm, J., Poznyak, V., & Room, R. (2009). Alcohol and infectious diseases: an overlooked causal linkage? *Addiction (Abingdon, England)*. 104 (3), 331-332.
- Pettigrew, S., Roberts, M., Pescud, M., Chapman, K., Quester, P., & Miller, C. (2012). The extent and nature of alcohol advertising on Australian television. *Drug and alcohol review*. 31 (6), 797-802.
- Pollay, R. W., & Gallagher, K. (1990). Advertising and cultural values: Reflections in the distorted mirror. *International Journal of Advertising*. 9, 359-372.
- Primack, B. A., Nuzzo, E., Rice, K. R., & Sargent, J. D. (2012). Alcohol brand appearances in US popular music. *Addiction*. 107 (3), 557-566.
- Ridout, B., Campbell, A., & Ellis, L. (2012). 'Off your Face (book)': Alcohol in online social identity construction and its relation to problem drinking in university students. *Drug and alcohol review*. 31 (1), 20-26.
- Sashittal, H. C., Sriramachandramurthy, R., & Hodis, M. (2012). Targeting college students on Facebook? How to stop wasting your money. *Business Horizons*. 55 (5), 495-507.
- van Amsterdam, J., & van den Brink, W. (2013). The high harm score of alcohol. Time for drug policy to be revisited? *Journal of Psychopharmacology*. 27 (3), 248-255.
- Wettlaufer, A., Cukier, S., Giesbrecht, N., & Greenfield, T. K. (2012). The marketing of responsible drinking: Competing voices and interests. *Drug and alcohol review*. 31 (2), 231-239.
- World Health Organisation. (2010). *Global strategy to reduce harmful use of alcohol*. Geneva: World Health Organisation.