

## **The Influence of Reference Groups on Alcohol Consumption: A Tri-Country, Social Marketing Study of Young Women**

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### **Abstract**

The purpose of our tri-country, social marketing study was to compare and contrast the influence of reference groups on alcohol consumption among young women attending university. With risky alcohol consumption highly prevalent among young women, our study examined reference group influence on those that consume alcohol responsibly as well as those who do not. Our self-administered quantitative survey was administered in three countries – Australia (n=305); Germany (n=325) and Wales (n=354). Multinomial and binomial logistic regression found that both subjective and group norm influenced the consumption of alcohol by young women in Wales. In Germany, group norm was not a significant predictor of alcohol consumption in contrast to Australia, where group norm influenced low-risk, risky and high-risk alcohol consumption.

Keywords: social marketing, binge drinking, university students

## **The Influence of Reference Groups on Alcohol Consumption: A Tri-Country, Social Marketing Study of Young Women**

### **Introduction**

Effective social marketing intervention requires a sound understanding of the drivers of a particular behaviour, which in the case of our study is alcohol consumption. As a prominent public health issue, independent research has revealed that risky alcohol consumption is apparent in three cohorts: a) young adults 18 to 24 year of age; b) university students and c) young women (Australian Institute of Health and Welfare (AIHW), 2004, 2005; Chikritzhs *et al.*, 2003; Leung, 2003; Wechsler *et al.*, 2003). Our study amalgamates these cohorts, investigating alcohol consumption among young women between the ages of 18 to 24 years who attend university.

Intuitively, young women attending university are prone to reference group influences, even though empirical evidence can only confirm this for university students in general (Bauerle 2003; Shim and Maggs 2005). With alcohol the drug of choice for many people and excessive consumption has been linked to cancer, physical illness and cognitive difficulties, our study is germane (National Health and Medical Research Council (NHMRC), 2001). Rather than focusing singularly upon extreme alcohol consumption as other studies have, we believe a more meaningful picture is achieved by looking at the influence of reference groups on both those that consume responsibly and those who do not. Furthermore, our tri-country study provides an even broader perspective of alcohol consumption behaviour among young female university students than the literature has to date. As such, it can be seen that our study is novel in many ways, with our primary research problem for this paper being: ‘are reference group influences a significant predictor in differentiating between low-risk, risky and high-risk alcohol consumers?’ Specifically, we hypothesise that subjective norm and group norm are significant predictors of alcohol consumption among young female university students in Australia, Germany and Wales.

### **Background**

Binge drinking among young women is one of the public health issues dominating social marketing. Applying marketing theory to social causes, such as binge drinking, has the potential to bring about benefits to the quality of peoples lives and society as a whole (Andreasen, 2006; Bagozzi, 1975; Bartels, 1974; Kotler, Roberto and Lee, 2002; Kotler and Zaltman, 1971; Maibach, Rothschild and Novelli, 2002). Emerging in the 1970s, social marketing has remained a predominantly applied discipline, with tentative links to Polonsky, Carlson and Fry’s (2003) ‘harm chain’ concept and Vargo and Lusch’s (2004) co-production component of their service-dominant logic model (Noble, 2006; Previte and Fry, 2006). Our study into binge drinking adopts the orthodox ‘downstream’ social marketing perspective whereby the focus is upon influencing the behavior of individuals’ directly (Noble, 2006). The first step in this journey, however, is to understand the behavior and then from this platform, effective social marketing interventions can be developed.

### **Reference Groups and their Influence on Young Women’s Alcohol Consumption**

Couched in the consumer behaviour literature, the influence of reference groups is well-known, with individuals often acting in accordance with an allied social group (Bearden and

Etzel, 1982; Childers and Rao, 1992). Reference groups can be a group or an individual, who exerts some influence over the evaluations, aspirations and behaviours of another (Park and Lessig, 1977). The reason why is that it is grounded in the two functions that reference groups perform, being: as a comparison for self-appraisal and a source for personal norms, attitudes and values (Childers and Rao, 1992). To illustrate, when attending university, young students are more susceptible to reference group influences as they are at a stage in life when they are still defining their image and egos (Park and Lessig, 1977).

Of particular interest in ours, as it has been in other studies into alcohol consumption, was the normative component of reference group influence due to health behaviour often being guided by perceptions of the beliefs and behaviour of others (Rimal and Real, 2003). Irrespective of the conceptualisation and measurement debates in the literature (see Bagozzi and Lee, 2002; Berkowitz 2004; Lapinski and Rimal, 2005; Neighbors *et al.*, 2006; Rimal and Real, 2003), the importance of subjective norm and group norm as influencer of behaviour is apparent (Ajzen and Fishbein, 1980; Johnston and White, 2003; Terry and Hogg, 1996). This being the case, they are the key concepts of interest in our study of young female students' alcohol consumption as they have been in other university-based studies of alcohol use (e.g. Berkowitz, 2004; Broadwater *et al.*, 2006; Johnston and White, 2004; Rimal and Real, 2003). To date, it is known that university students frequently overestimate the quantity in addition to the frequency of peers' consumption of alcohol (Broadwater *et al.* 2006; Maddock and Glanz, 2005; Perkins, 2002).

Given that health behaviour is often guided by perceptions of others' beliefs and behaviour, norms are often included in alcohol studies as they may validate and in some cases initiate an individual's alcohol consumption (Broadwater *et al.*, 2006; Rimal and Real, 2003). Norms contain both an attitudinal and behavioural component and are, in essence, beliefs about a particular behaviour and depiction of the status quo (Perkins, 2002). The subjective norm measure in the theory of reasoned action measures injunctive norms, or perceptions of the expectations of 'important others' formed through experiences with peoples' reactions to a particular behaviour. Individuals are often motivated to comply with these norms (Rimal and Real, 2005) and hence subjective norms are useful in predicting health-related behaviours (Finlay, Trafimow and Moroi, 1999). In contrast, group norms are more specific and thus pertain to a clearly identified reference group (Bagozzi and Lee, 2002).

As you might expect, research surrounding both subjective norm and group norm have produced mixed results depending upon the context, cohort and behaviour being studied. For example, studies of intentions to exercise and sun-protective behaviour found that group norm was important and subjective norms irrelevant (Terry and Hogg, 1996). Whilst, a study of binge drinking behaviour among university students, found both subjective and group norms were apparent (Johnston and White, 2003). For our tri-country study of the alcohol consumption of young women at university, the roles of subjective and group norm were unknown. Thus, the focus of our endeavours was to address this gap in the literature.

## Method

A self-administered questionnaire was developed from existing scales and then subject to an expert panel review (n=6) and pre-testing (n=45). The useable sample from Australia totalled 305 responses. Germany (n=321) and Wales (n=361) also produced samples of a comparable size. Our study is similar to others in that collecting self-reported alcohol consumption was the only means by which to gather the data (Harrell, 1997). Indeed, research by Brener, Billy

and Grady (2003), Cooper *et al.* (1981), Dufour (1999), Harrison (1997) and Patrick *et al.* (1994) have demonstrated that self-reported methods for alcohol consumption are both accurate and reliable.

Existing scales were drawn from the National Drug Strategy Household Survey (AIHW, 2005) and the classification of respondents as low risk, risky and high risk consumers were based on the industry standard classification system presented in the Australian Alcohol Guidelines (NHMRC, 2001). Thus, the NHMRC (2001) nominal scale was used to classify respondents by their answer to the question: "On a day when you drink alcohol, how many standard drinks do you usually have?" Importantly, a standard drinks table was included as an attachment to the questionnaire to help respondents identify how many standard drinks they typically consume; thus alleviating any bias in the reporting of alcohol consumption. Furthermore, participants were instructed not to discuss their answers with other people while completing the survey to limit the likelihood that respondent's would overstate their alcohol consumption to impress their friends and peers. Measured on 7-point semantic scales, composite variables were created for group norm (4 items; loadings 0.81-0.90;  $\alpha=0.89$ ) and subjective norm (4 items; loadings 0.84-0.89;  $\alpha=0.88$ ).

In the absence of an appropriate sampling frame, quota sampling was used which was advantageous in that it ensured control of the age and gender characteristics of the target population (Moser, 1952). As recommended by Sudman and Kalton (1986), selection bias was minimised by collecting data on various days, at various times and in various locations around the campuses. Data was collected at a regional university in Australia, a rural university in Germany and a city university in Wales. For each country a multinomial logistic regression was conducted as there were three risk classifications. A series of binary logistic regressions subsequently validated these findings.

## Results

Firstly, Table 1 shows the alcohol consumption by young female university students, classified as low-risk (four or less standard drinks), risky (five to six standard drinks) and high-risk (seven or more standard drinks) in accordance with NHMRC (2001). Australia reported the highest percentage of high-risk alcohol consumption, Wales the highest percentage of risky drinking and Germany the highest percentage of low-risk drinking.

**Table 1: Classification of Alcohol Consumption**

		Australia		Germany		Wales	
Category		Mean(SD)	n(%)	Mean(SD)	n(%)	Mean(SD)	n(%)
Sub- jective norm	Low-risk	3.06(1.35)	122(40.0)	3.08 (1.02)	195(60.0)	3.06(1.12)	131(37.0)
	Risky	3.51(1.13)	75(24.6)	3.76 (0.98)	77(23.7)	3.83(1.00)	167(47.2)
	High-risk	4.55(1.16)	108(35.4)	4.19 (0.98)	53(16.3)	4.31(1.24)	56(15.8)
	<b>Total</b>	<b>3.70(1.39)</b>	<b>305(100)</b>	<b>3.67 (0.99)</b>	<b>325(100)</b>	<b>3.73(1.12)</b>	<b>354(100)</b>
Group norm	Low-risk	4.17(1.43)	122(40.0)	3.93 (1.12)	195(60.0)	4.71(1.18)	131(37.0)
	Risky	4.84(0.93)	75(24.6)	4.27 (1.25)	77(23.7)	5.56(0.82)	167(47.2)
	High-risk	5.56(0.89)	108(35.4)	4.69 (1.20)	53(16.3)	5.95(0.68)	56(15.8)
	<b>Total</b>	<b>4.82(1.29)</b>	<b>305(100)</b>	<b>4.29 (1.19)</b>	<b>325(100)</b>	<b>5.41(1.23)</b>	<b>354(100)</b>

Next, the multinomial and then binary logistic regressions were conducted to assess whether subjective and group norm were significant predictors in differentiating between low-risk, risky and high-risk alcohol consumption. Table 2 shows the results of the hypothesis testing.

**Table 2: Results of Hypothesis Testing**

		Australia	Wales	Germany	
Multinomial Logistic Findings	<b>H1.</b> <i>Subjective norm</i> is a significant predictor in differentiating between low-risk, risky and high-risk alcohol consumers.	Supported	Supported	Supported	
	<b>H2.</b> <i>Group norm</i> is a significant predictor in differentiating between low-risk, risky and high-risk alcohol consumers.	Supported	Supported	Unsupported	
Bivariate Logistic Findings	Low-risk vs Risky	Subjective Norm Group Norm	Unsupported Supported	Supported Supported	Supported Unsupported
	Low-risk vs High-risk	Subjective Norm Group Norm	Supported Supported	Supported Supported	Supported Unsupported
	Risky vs High-risk	Subjective Norm Group Norm	Supported Supported	Supported Supported	Unsupported Unsupported

For *Australia*, the findings indicated that the final model significantly outperformed the constant only model  $\chi^2(\text{DF} = 4, n = 304) = 103.24, p < 0.05$ . Both subjective norm ( $\chi^2(\text{DF} = 2, n = 305) = 27.85, p < 0.05$ ) and group norm ( $\chi^2(\text{DF} = 2, n = 305) = 27.05, p < 0.05$ ) contributed to the prediction of alcohol consumption. However, the likelihood-ratio tests indicate that only one of the independent variables discriminated between all three groups. The subsequent series of binary logistic regression sought to further explore these. The findings reveal that both subjective norm and group norm discriminated between the binary of 1) low-risk vs high-risk and 2) risky vs high-risk. However, the Wald criteria showed the subjective norm ( $z = 0.819, p > 0.05$ ) was not a predictor of alcohol consumption between the binary, low-risk vs risky.

The *Wales* multinomial logistic regression also found that the final model significantly outperforms the constant only model  $\chi^2(\text{DF} = 84, n = 354) = 201.933, p < 0.05$ . Both group norm ( $\chi^2(\text{DF} = 40, n = 354) = 79.906, p < 0.05$ ) and subjective norm ( $\chi^2(\text{DF} = 44, n = 354) = 85.019, p < 0.05$ ) significantly contributed to the prediction of alcohol consumption. The subsequent series of binary logistic regression confirmed these findings, with group norm and subjective norm discriminating between all three alcohol consumption classifications.

Finally, the *German* multinomial logistic regression also found that the final model significantly outperformed the constant only model  $\chi^2(\text{DF} = 108, n = 325) = 193.582, p < 0.05$ . However, the likelihood-ratio tests indicated that only one of the independent variables discriminated between the groups. Subjective norm ( $\chi^2(\text{DF} = 62, n = 325) = 123.964, p < 0.05$ ) significantly contributed to the prediction of alcohol consumption. In contrast, group norm ( $\chi^2(\text{DF} = 46, n = 325) = 55.41, p > 0.05$ ) did not contribute. The binary logistics regression revealed that group norm was not a predictor for alcohol consumption for any of the binary combinations. Furthermore, subjective norm was found to make a significant contribution to the alcohol consumption of low-risk vs risky comparison ( $z = 17.42, p < 0.05$ ) and the low-risk vs high-risk comparison ( $z = 23.251, p < 0.05$ ).

### Conclusions and Implications

It can be concluded from the research that in Wales both subjective and group norm influenced the consumption of alcohol, while in Germany group norm did not influence

young women's drinking choices at all. In Australia, subjective norm was not a significant differentiator between low-risk and risky alcohol consumption categories while group norm was a significant influencer for all three alcohol consumption categories. This appears to parallel in part Johnston and White's (2003) and Terry and Hogg's (1996) alcohol consumption research which concluded that group norm was more important than subjective norm. Furthermore, the group norm findings from Australia and Wales indicate that the drinking behaviour of an individual tends to reflect the environment in which they are surrounded as advocated by Grube and Morgan (1990). Regarding subjective norm, previous research conducted on different cohorts found no evidence of the role of subjective norm in alcohol consumption (McMillan and Conner, 2003; Trafimow, 1996). This was confirmed in our study for the Australian low-risk vs risky and the German risky vs high-risk binominal results; yet disconfirmed for the remaining categories and the Welch study for the specific cohort of young women between 18 to 24 years attending university.

On the whole, it can be seen from our study that reference groups influence the consumption of alcohol by young women attending university in Australia, Wales and Germany. Each country had its own nuances in regard to the role of subjective norm and group norm, which is an important finding. The mixed results of our study to not lend themselves to conclusive generalisations, however, therein lay their value. The consumption of alcohol by young women at universities differs by country. The implication, perhaps unsurprisingly, is that the influence of significant others and reference groups has cultural foundations and social marketing interventions need to be culturally congruent. For example, Wales and Australia may benefit from an educational campaign about the misconception that all university students binge drink as a mechanism suggested by Berkowitz (2005) to address group norm.

### **Limitations and Future Research**

Our research involved a cross-sectional study of a particular group of young women attending selected, single campus Australian, Welsh and German universities based upon a quota sample and assessed self-reported behaviour on a self-administered questionnaire. Irrespective of the limitations that these aspects impose on the generalisability of our findings, the strengths and novelty of our research remain apparent. We suggest that future research may include conducting this study at other Australian and overseas universities. Also a comparison of the alcohol consumption of university and non-university young women would be fruitful.

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