Good man, you enjoy your beer!

An investigation of online forum posts on binge drinking from a health belief perspective

Anjali Saroop

A thesis submitted to
Auckland University of Technology
in fulfilment of the requirements for the degree of
Master of Communication Studies (MCS)

2013

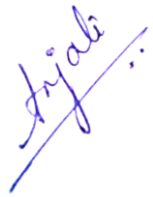
School of Communication Studies
Primary Supervisor: Gudrun Frommherz

TABLE OF CONTENTS

LIST OF FIGURES & TABLES

ATTESTATION OF AUTHORSHIP

"I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning"



Anjali Saroop

May 2013

DEDICATION

To,

Mamu, my most beloved mother, for I am nothing without you,

Adina Lila, my dear friend, your support and encouragement has seen me through,

Gudrun, my supervisor, my thesis would have no meaning without you,

Anirban, my favourite cheerleader, my woes find a way to you,

and above all,

Radha Madhava, for knowing my heart and carrying me through.

ACKNOWLEDGEMENTS

I would like to take this opportunity to acknowledge the immeasurable contribution of my research supervisor, *Gudrun Frommherz*. Her guidance is the backbone of my work. Very early on in this journey, she understood my strong and weak points and directed me accordingly. She played the role of a true friend. She never let her expectations of me relax, for that I am ever thankful to her. She stimulated my intelligence and guided my thought process to produce an original, significant and credible body of work. She was always concerned about my personal needs. She would regularly enquire about my job, my living arrangements and my well-being. She also ensured that I had an appropriate environment to work on my thesis.

By giving me her best, she brought out the best in me. Thank You *G*!

This journey has been a roller coaster ride, and I would like to apologize to my dear ones who have unfortunately been at the receiving end of my low moods. Their unconditional support gave me the much needed confidence and courage to move ahead. I would like to express my gratitude to *Adina Lila* and *Nandu,* who have done their best to make me feel at home in a foreign land. My heartfelt thanks to *Arundhati, Gopesvari, Nitya Priya, Gaura Priya, Acyuta Bhava, Kasi Priya, Tracy, Tilakini, Diksha,* the entire gang at *The Loft and New Varshana*! I have no words to express what your association means to me.

Thank You.

ABSTRACT

Binge drinking, recognized as a risky behaviour, is prevalent in adults and teenagers in major parts of the world. This study expands the understanding of people's attitude towards binge drinking, by investigating posts on the topic made by participants of an online forum from a health behaviour perspective. The research examines whether the online forum influences change in participants' drinking habits. The research uses an original health behaviour model derived from a number of existing health models. Findings of the study suggest that participants binge drink for several reasons, from regulating their emotions to defying moral codes. The posts on the forum were seen to influence participants to consider their binge drinking habits and support behaviour change; however not all of them appeared to be a healthy influence on participants.

The framework designed for the research may be applied by health care professionals to investigate attitudes of people towards binge drinking and accordingly guide them to healthy behaviour change. Health communication professionals can employ the framework for developing communication campaigns against binge drinking.

Chapter 1: Introduction

"*Drunken teenager, 19, accidentally ran over and killed his mother as she begged him not to drink and drive"* (Bains & Arkell, 2013)

Unfortunately, many such horror stories of binge drinking regularly make their way to the news headlines. The above news story shows the serious implications of binge drinking on individual and societal well-being. Some people may discount the importance of this news, considering it an extreme and rare consequence. However, death is not the only possible serious outcome of binge drinking. Binge drinking is considered as a health impairing behaviour (Stroebe, 2011) and is known to be responsible for more than 50 types of injury and disease (Centers for Disease Control & Prevention, 2012a). Given the nature of its consequences, it is not surprising that binge drinking has become a matter of social, political and public concern (Herring, Berridge, & Thom, 2008).

In common terms, binge drinking is understood as an excessive consumption of alcohol over a short period of time (Corbin, 2006). Binge drinking is prevalent in adults and teenagers in major parts of the world. In New Zealand, twenty one per cent of adults are found to be binge drinkers (Fryer, Jones, & Kalafatelis, 2011). On weekend nights, binge drinkers seem to take over the streets in the Auckland city centre. When I first came to this country, I was shocked to see people's drunken behaviour. They seemed to have no regard for their own safety, let alone that of others. In their drunken state, they appeared indifferent to the disturbance they were creating in their surroundings. Most of all, I was appalled by their complete lack of self-respect and respect for their associates; they seemed eager to make a fool of themselves and physically abuse themselves and their friends. The New Zealand government, regulatory bodies, welfare groups and parents are finding it difficult to account for the binge drinking behaviour of teenagers and young adults (McAllister, 2012). McAllister (2012) finds that, in spite of being conscious of the possible impact of binge drinking on personal and social life, people in all age groups continue to binge drink. While many studies have been made to understand the motivations for binge drinking, their focus seems to be limited to teenage/ younger adults or college and university students.

This study seeks to expand the existing understanding of people's attitude towards binge drinking, by investigating an online forum's posts on the topic. A mere understanding of people's attitude towards binge drinking may not be sufficient to tackle this social issue. Thus, the research also examines whether an online forum, where participants express their attitude towards binge drinking, can influence change in their drinking habits. Unlike much research on binge drinking, which use interviews and surveys, this research employs a novel way of investigating participants' binge drinking behaviour. It examines the participants' posts on an online forum, thus ensuring that the participants' inputs are in a setting that is not influenced by the presence of the researcher. Thus, by investigating a diverse subject group in a unique environment, the research seeks to make significant contributions to the body of knowledge on binge drinking behaviour research.

Having laid out the research context and its significance here, the next section reviews the literature on binge drinking, online forums and health behaviour research. Following the literature review, is a description of a unique framework designed for the research on the basis of the theories presented in the literature. The subsequent section is the research methodology with reasons for the use of qualitative content analysis and a description of the research design. The methodology is followed by a quantitative summary, a qualitative analysis and discussion of the study results. This section also integrates the existing literature, the research framework with the results to answer the research questions. The concluding chapter summarizes the key findings of the research, and considers their implications. The limitations of the current study along with scope for further research have been identified here. The section also discusses the contribution of the study to the existing body of knowledge.

Chapter 2: Literature review

This chapter presents an overview of the literature relevant to the research context. The chapter is structured in three sections, with each section focusing on a specific topic of research interest.

The first section of the review focuses on binge drinking and considers definitions of binge drinking, its influence on and its prevalence in different demographics. The next section of the review draws attention to the structure and characteristics of an online forum. The concluding section of the review deals with health behaviour. It imparts a basic understanding of health behaviour and the prominent theories proposed in this field.

2.1 Binge Drinking

The first section of the literature review explains the concept of binge drinking and introduces the criteria used for defining the same. The impact of binge drinking on personal and societal life has been outlined. This section also presents the prevalence of binge drinking in different socio-economic groups and geographic regions of the world.

2.1.1 Definition

Traditionally, the term binge drinking is used in context with the drinking behaviour of alcoholics. It usually characterises an extended period of significant alcohol intake (Corbin, 2006; Wechsler & Nelson, 2001). However, the use of this term is no longer limited to signifying a certain phase of alcoholism (Wechsler & Nelson, 2001). Binge drinking is now commonly used to denote an excessive consumption of alcohol over a short period of time (Corbin, 2006). MCM research (2004) also captures a few frequently used definitions of binge drinking including drinking with the intent to get drunk, drinking until the drinker is no longer in control of him or herself and occasional heavy drinking (as cited in Cagney, 2006). According to the Institute of Alcohol Studies, this excess consumption takes place in a “single session” and tends to lead to inebriation (2007, p. 3). A definition by Wechsler, Davenport, Dowdall, Moeykens and Castillo (1994) includes the effects of binge drinking; “consumption of a sufficiently large amount of alcohol to place the drinker at increased risk of experiencing alcohol-

related problems and to place others at increased risk of experiencing second hand effects" (as cited in Wechsler & Nelson, 2001, p. 287).

While it is commonly agreed that binge drinking implies an excessive intake of alcohol, there is a lack of consensus on the measures used for quantifying binge drinking (Carey, 2001). Some researchers quantify binge drinking as consumption of five or more standard drinks for men and as four or more drinks for women on a single occasion (Wechsler, Dowdall, Davenport & Castillo, as cited in Lange & Voas, 2001, p. 2). Commonly referred to as the 5/4 measure, this benchmark has been used in much research on drinking behaviour (Lange & Voas, 2001).

Criteria used for defining binge drinking vary in different parts of the world. For example, in the United States, Centers for Disease Control (CDC) (2000) and the Substance Abuse and Mental Health Services Administration (Gfroerer et al., 1996) employ the 5/4 measure introduced by Weschler et al. in their public communication of risk and drinking behaviour (as cited in Lange & Voas, 2001, p. 310). Thus, an intake of five or more drinks (>=89ml or 70g of pure alcohol) - for men and four or more drinks (>=71ml or 56g of pure alcohol) - for women is identified as binge drinking. The 'Monitoring the Future' surveys (Johnston, O'Malley, & Bachman, 1995) and the 'Core alcohol and drug survey' (Presley, Meilman, & Lyeria, 1994) also use this measure to identify "heavy use" (as cited in Lange & Voas, 2001).

Unlike the CDC which quantifies binge drinking in terms of the number of drinks consumed, the National Health Services (NHS) in the United Kingdom identifies binge drinking in terms of units of alcohol consumed. The threshold of alcohol intake employed by the NHS to identify binge drinking is also lower than that used by the CDC. The NHS and National office of Statistics in the United Kingdom quantify binge drinking as eight or more units (>= 80ml or 64g of pure alcohol) for men and six or more for women (>= 60ml or 48g of pure alcohol) in a single session (NHS, 2010; Drinkaware, 2012).

Anderson (2008) in his report on binge drinking in Europe, highlights the lack of a standardised definition for binge drinking. For the purpose of his report he uses a

"working definition" of binge drinking as "a consumption of 60g alcohol (men) and 40g alcohol (women) in a period of about two hours" (p. 15).

While national health bodies in the United States and Europe employ a gender-centric approach to defining binge drinking, the Alcohol Advisory Council (ALAC) of New Zealand uses a common definition for men and women. ALAC's alcohol monitor, considers consumption of seven standard drinks or more (>=70g of pure alcohol) by adults on a single occasion as binge drinking (Fryer, Jones, & Kalafatelis, 2011). For minors (<18 years) consumption of five or more standard drinks on a single occasion (>=50g of pure alcohol) is considered binge drinking (Fryer, Jones, & Kalafatelis, 2011).

The measures seen above identify binge drinking in terms of number of drinks/units of alcohol consumed. Another approach for quantifying binge drinking has been through the measure of alcohol content in blood, known as blood alcohol concentration or BAC (Lange & Voas, 2001, p. 311). The United States National Institute on Alcohol Abuse and Alcoholism (NIAAA) employs this approach to quantify binge drinking. According to NIAAA, a consumption pattern that results in the percentage of alcohol in the blood to be 0.08 per cent or greater can be classified as binge drinking (Centers for Disease Control & Prevention, 2012b).

As seen above, though institutions and researchers may use a common generic definition of binge drinking, the precise measures employed for quantification of the term may not necessarily be the same (Anderson, 2008). In addition, due to differing rates of alcohol consumption and constitutional ability to tolerate the effects of alcohol, these measures may not be appropriately applied to everyone (NHS, 2010). Lange and Voas (2001, p. 5) maintain that "an instance that could be defined as binging may vary substantially from individual to individual". Of the varying definitions of binge drinking seen above, the generic definition was found to be the best suited for this research context. Thus, this research understands binge drinking as "drinking heavily in a short space of time to get drunk or feel the effects of alcohol" (Drinkaware, 2012).

The definitions of binge drinking employed by researchers and health bodies in different parts of the world have been seen in the above section. The following section details the effects and prevalence of binge drinking.

2.1.2 Effects and Prevalence

Binge drinking is known to have serious implications on individual and societal well-being. Given the nature of its consequences, binge drinking has become a matter of social, political and public concern (Herring, Berridge, & Thom, 2008). Excessive drinking has been associated with over 54 types of injury and disease (Centers for Disease Control & Prevention, 2012a). Binge drinking is known to increase the probability of other risky behaviours such as drunk driving, unprotected sexual acts, and sexual and physical aggression (Corbin, 2006). Wechsler et al. (2002), state that in comparison to those who do not binge, binge drinkers are more vulnerable to the negative consequences of such risky behaviours (as cited in Wechsler & Nelson, 2001). Vehicular accidents, sexually transmitted diseases, unintended pregnancies, alcohol-related injuries and legal issues are some of the common implications experienced by binge drinkers (Corbin, 2006). Binge drinking can also cause medical conditions such as gastritis, pancreatitis, meningitis, alcohol poisoning, liver disease, neurological damage, hypertension, stroke, cardiovascular diseases, and impaired control of diabetes (Naimi et al., 2003; Centers for Disease Control & Prevention, 2012b).

Binge drinking has been associated with interpersonal violence in the form of homicide, assault, rape, and domestic violence (Centers for Disease Control & Prevention, 2012b). Binge drinking can lead to child neglect, child abuse and children born with foetal alcohol spectrum disorders, thereby affecting family life (Centers for Disease Control & Prevention, 2012b). A considerable number of alcohol-related deaths have been a consequence of binge drinking (Centers for Disease Control & Prevention, 2012b). Binge drinking is known to cause acute impairment, thereby affecting the ability to function optimally (Naimi et al., 2003). The consequent loss of productivity may affect work life (Naimi et al., 2003). In addition to hampering one's personal, social and work life, drinking too much has financial costs. For example, according to Centers for Disease Control and Prevention (2012b), in 2006 excessive drinking cost the United

States economy $223.5 billion. These costs were incurred through health care expenses, crime, and lost productivity.

An increase in the intensity of binge drinking (i.e., the number of drinks consumed) increases the probability of experiencing negative consequences (Wechsler & Nelson, 2006, as cited in Esser, Kanny, Brewer, & Naimi, 2012). Nevertheless, adult binge drinkers frequently undertake such behaviour (Naimi, Nelson, & Brewer, 2010; Centers for Disease Control & Prevention, 2012c), hence regular monitoring of binge drinking behaviour is essential for evaluating its impact on public health and for the design of evidence-based preventive strategies (Esser et al., 2012). Governmental health bodies of various countries conduct periodic surveys to estimate the binge drinking population. For example, the Centers for Disease Control and Prevention reports that more than 17.1% adults (38 million) in the United States binge drink (2012a).

Anderson (2008) prepared a report for the German Centre for Addiction Issues (DHS) that indicates the prevalence of binge drinking on the European continent. According to him, over 20% (80 million) of Europeans aged 15 years and above binge drink at least once a week. He also highlights countries where binge drinking is relatively more prevalent; Ireland has one of the biggest populations of binge drinkers (54%), followed by Spain (33%). Finland and Sweden have a comparatively smaller population of binge drinkers, 17% and 11% respectively (Anderson, 2008).

New Zealand's Alcohol Advisory Committee indicates that 21% (687,540 thousand) of adults in New Zealand are binge drinkers (Fryer, Jones, & Kalafatelis, 2011). The National Drug Strategy Household Survey, produced by the Australian Institute of Health and Welfare indicates a similar percentage (19.5%, 4.3 million) of binge drinkers in that country (2008).

Binge drinking has been found to be most prevalent among younger age groups (Moore, Smith, & Catford, 1994; Quigley & Marlatt, 1996). For example, in the United States, the 18-24 age group was reported to have the highest prevalence of binge drinking (28.2%) and intensity (9.3 drinks) (Centers for Disease Control & Prevention, 2012c). In Europe, 24% of the people in the 15 to 24 age group were recorded as binge drinkers

(Anderson, 2008). The ALAC's alcohol monitor reports that 44% of New Zealanders in the 18-24 age group are binge drinkers (Fryer, Jones, & Kalafatelis, 2011).

However, Anderson's finding suggests that binge drinking is not just limited to the young (2008). ALAC, in New Zealand reported that 40% of people over the age of 40 binge drink. Binge drinking has also been reported in older age groups. For example, 18% of Europeans aged 55 and above have reported to binge drink at least once a week (Anderson, 2008). Similar findings have been brought out by Centers for Disease Control and Prevention, United States (2012c). According to their weekly Mortality and Morbidity report, the frequency of binge drinking is highest in people over 65 years of age at 5.5 episodes per month. Thus, while the prevalence of binge drinking is highest among the younger age groups, it is the people who are above 65 years of age who binge drink most often (Centers for Disease Control & Prevention, 2012c).

The prevalence of binge drinking appears to increase with levels of income and education (Centers for Disease Control & Prevention, 2011; Anderson, 2008). However, those with more education have also been found to drink less on each occasion (Centers for Disease Control & Prevention, 2011; Anderson, 2008). For example, in the United States, binge drinkers with household incomes greater than $50,000 indicated a considerably lower average number of binge drinking episodes (3.6) and a lower average largest number of drinks consumed (6.5) than those with household incomes less than $50,000 (Centers for Disease Control & Prevention, 2011). The opposite pattern of binge drinking has been observed among the lower socio-economic groups. Those with lower levels of education, income or occupational designation, as well as the unemployed reported the lowest binge drinking prevalence (Anderson, 2008; Centers for Disease Control & Prevention, 2011). However, this group was also found to have the highest average frequency of binge drinking episodes (4.9) and the average largest number of drinks consumed (7.8) (Centers for Disease Control & Prevention, 2011). This pattern of prevalence and intensity of binge drinking appears to be consistent in different parts of the world (Anderson 2008; Centers for Disease Control & Prevention, 2011; Fryer, Jones, & Kalafatelis, 2011). In New Zealand, binge drinkers are more likely to earn less than $50,000 per annum (Fryer, Jones, & Kalafatelis, 2011).

In the United States, binge drinking prevalence was also considerably higher in wealthier states than in poorer states (Center for Disease Control & Prevention, 2011). However in New Zealand, there is no such significant difference between binge drinkers and non-binge drinkers in terms of their geographic location. 71 per cent of binge drinkers reside in medium sized towns or large cities, which is the same for non-binge drinkers (Fryer, Jones, & Kalafatelis, 2011).

There is a discord between the characteristics of the socio-economic profile identified above for binge drinkers and the characteristics for other health risks (e.g., smoking and obesity) which are found to be more prevalent among groups with lower education and income (Centers for Disease Control & Prevention, 2009). A few possible reasons have been cited for a greater prevalence of binge drinking among the higher income groups. For example, in comparison to smoking, binge drinking is not considered as a risky behaviour (Lee, Griffin, & Melvin, 2009). Also, the subject of binge drinking has not received intense attention in terms of awareness and preventive measures (Lee, Griffin, & Melvin, 2009).

Summary

This literature review has highlighted the varying definitions employed for identifying binge drinking. Generally, binge drinking is characterised by a high alcohol intake over a short space of time. According to research data brought out by different governmental health bodies, binge drinking is prevalent in adults in major parts of the world. While binge drinking is not restricted to a certain age group, it has been found that it is most prevalent in the younger groups. It has also been seen that binge drinking tends to be more prevalent in people with higher income and education. However, the intensity of binge drinking is higher in the lower socio-economic groups. Binge drinking is a cause for serious concern since it has implications not only on the binge drinker but also on the well-being of the society as a whole.

2.2 Online forums

This research aims to understand the attitude of people towards binge drinking by investigating an online forum's posts on the topic. The purpose of this section of the literature review is to briefly describe the structure and inherent characteristics of an online forum. This understanding will be crucial in analysing posts that are made by participants' on binge drinking on the online forum chosen for the purpose of the study, Partyvibe.com.

Social media refers to online tools and technologies that enable people to communicate with each other by facilitating group conversations, the sharing of pictures, videos, and audio (Safko & Brake, 2009). Sterne (2010) puts forth a simple and inclusive definition of social media; user friendly online tools that allow dissemination of individually generated content. Based on their purpose of use, Sterne (2010) classifies social media into the following broad categories: forums and message boards, review and opinion sites, social networks, blogging and microblogging, bookmarking, and media sharing (e.g., pictures, audio and video).

Of the social media formats identified here, the forum was a pioneering tool employed for online communication and networking (Safko & Brake, 2009). It was initially employed as a private Usenet in the 1970s (Safko & Brake, 2009). The development and use of public internet forums began with the initial public use of the Web in 1995 (Safko & Brake, 2009). A forum is a platform that facilitates online community dialogue on a continual basis (Safko & Brake, 2009). Online communities have been defined in multiple ways. Certain researchers consider online communities as an environment that fosters support, empathy and friendship (Rheingold, 2000; Safko & Brake, 2009). Another definition stresses the structure and appraisal of technological platforms of online communication and group building (Leimeister & Krcmar, 2005). Essentially, an online community acts as a meeting ground for people with similar interests or circumstances (Safko & Brake, 2009; Pfeil & Zaphiris, 2010).

An online community or a forum can be employed for debate, polls, advice seeking or the sharing of ideas (Safko & Brake, 2009). A group of people referred to as members

or contributors, along with a moderator, are collective users of the forum (Safko & Brake, 2009). Becoming a member usually requires one to formally register with the forum (Safko & Brake, 2009). The forum allows members to initiate conversation or engage in existing conversations on topics of personal interest through posted messages (Safko & Brake, 2009). A post is a textual message or a comment typed by a member (Safko & Brake, 2009). Once submitted, the message gets listed after or before the previous post, based on the chronological order being followed on the forum (Safko & Brake, 2009). This structure, where posts on a certain topic are arranged sequentially, is known as a thread (Safko & Brake, 2009). A thread is thus a form of communication, which allows members to continually share their thoughts on a discussion topic (Safko & Brake, 2009).

Moderators have complete control on the posts and threads to ensure that they are in accordance with the regulatory framework set up for the forum (Safko & Brake, 2009). To this purpose, the moderator may edit, delete content, issue warnings to members or disallow them (Safko & Brake, 2009). Moderators are usually selected from amongst the members (Safko & Brake, 2009). A member who consistently disregards the forum's etiquette is referred to as a troll (Safko & Brake, 2009). A troll purposefully posts negative and provocative content which may lead to a burst of angry comments from other members known as flaming (Safko & Brake, 2009). Flame wars occur when members continue to post confrontational and provocative comments (Safko & Brake, 2009). It is the prerogative of the moderator to intervene in such cases (Safko & Brake, 2009). The online discussion is generally open to public access wherein people may view posts and threads made by members (Safko & Brake, 2009). However, a person unregistered with the forum as a member may be unable to make any posts on the threads (Safko & Brake, 2009). People who often visit a forum without contributing to the thread are known as lurkers (Safko & Brake, 2009).

Safko and Brake (2009) posit that a forum engenders communal bonding. In this regard, it is noteworthy to consider Tonnies's (1955) identification of communities. Tonnies (1995) defines communities as communities of kinship, communities of locality, and communities of the mind. The concept of 'communities of the mind' is of interest to this study. As suggested by the name, shared interests play a significant role in holding

together a community of the mind. The members of this community may not necessarily be bound by kinship or close geographical proximity, but their common interest encourages communal ties (Budiman, 2008).

Kramish et al. (2001), suggest that some people find it easier to discuss sensitive issues such as personal health on an online forum (as cited in Im & Chee, 2006). According to Suler (2004), when people are in an online environment they are more open to self-disclosure. He suggests that when online, people have the independence to reveal, conceal or alter their identity to the extent they choose (Suler, 2004). Thus the online environment allows people an anonymity, which makes them less vulnerable and therefore more open to self-disclosure (Suler, 2004). Another important feature of computer-mediated communication is the invisibility it affords to a user (Suler, 2004). Members feel more open about expressing themselves since they do not have to face other's expressions of disapproval, boredom, indifference or similar emotions that may impede them from expressing freely (Suler, 2004).

Communication on an online forum is asynchronous in nature i.e. in non-real time (Suler, 2004), members do not have to cope with someone's instantaneous reaction and therefore they feel more comfortable about self-expression (Suler, 2004). Another important aspect of an online forum is that it minimizes one's status or authority (Suler, 2004). Everyone on a forum has an equal opportunity to voice their opinion (Suler, 2004). Thus in an online forum, members may not feel apprehensive of facing disapproval or rebuke from an authority figure, and hence they may be more willing speak out or misbehave (Suler, 2004). The above characteristics of communication on an online forum may encourage its members to freely express their views and opinions on the topic of discussion. Researchers also believe that online forums can be a likely alternative to traditional face-to-face groups (Kramish et al., as cited in Im & Chee, 2006).

This research examines the posts made by participants on Partyvibe.com. This website is essentially a bulletin board with several categories; each representing a broad subject area such as drugs, love and sex, music, rave, radio and life. Each category contains forums (specific subject areas) which contain threads (conversations on a topic). The

website also hosts an internet radio station and offers music to download. In addition, it has a section for advertising classifieds and party listings (including festivals and free parties). The website is thus "centred around a community of party collectives and sound systems. Site contains news, event listings, MP3s, drug resource, party photographs and a message board" (Alexa, n.d.). Members of the website have access to a chat room and can also upload their party pictures on the website. Table 2.1 indicates the visitors by country for the website (Alexa, n.d.). It can be seen that approximately 60 per cent of the traffic to this website is from the United Kingdom, the United States and India.

Table 2.1

Visitors by Country for Partyvibe.com

Country	% of visitors
United Kingdom	21.4
United States	20.7
India	18.1
Philippines	6.0
Canada	3.5
France	3.0
Germany	2.2

Note. Metrics sourced from Alexa (http://www.alexa.com/siteinfo/partyvibe.com#)

Figure 2.1 indicates that more males than females in the age group of 18-24 seem to browse this website.

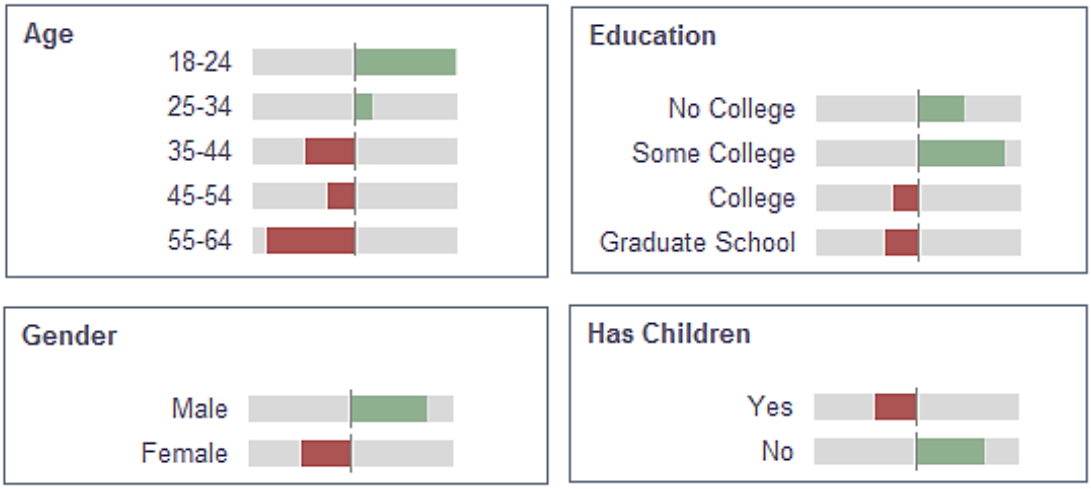


Figure 2.1. Audience Demographics for Partyvibe.com. Adapted from Alexa (http://www.alexa.com/siteinfo/partyvibe.com#)

The metrics also indicate that most of these males have no children and have received some college education. According to site information available on Alexa (n.d.), visitors seem to spend on an average 56 seconds viewing each page and about two minutes on the site during each visit.

Summary

This literature review has introduced the basic structure and the characteristics of communication of an online forum. A brief description of the purpose, structure and site traffic of the forum Partyvibe.com has also been presented. The following section discusses health behaviour and the prominent models of this field.

2.3 Health behaviour

The negative impact of binge drinking on health and its prevalence has been presented in an earlier section. Understanding why people undertake such a potentially harmful behaviour mandates a basic grounding in the field of health behaviour. This section of the literature review facilitates a fundamental understanding of health behaviour by presenting definitions and prominent models employed in this field.

2.3.1 Definition

Kasl and Cobb (1966) define health behaviour as an action performed by an individual with the intent of preventing a disease or detecting it in its asymptomatic phase (as cited in Matterne, Diepgen, & Weisshaar, 2011, p. 1189). Conner and Norman (2005) regard this definition to be limited in scope, as it does not consider individuals with identified symptoms or disease (as cited in Matterne, Diepgen, & Weisshaar, 2011, p. 1189). Gochmann (1997) provides a more inclusive definition of health behaviour as any behavioural patterns, actions or habits "that relate to health maintenance, to health restoration and to health improvement" (p. 3). Stroebe (2011) uses an objective driven definition of health behaviour. He defines health enhancing/impairing behaviour as behaviour that is known to benefit/damage personal health. Thus, exercising and eating a well-balanced diet may be considered an example of health enhancing behaviour while smoking and high consumption of alcohol can be considered examples of health impairing behaviour (Stroebe, 2011).

2.3.2 Health Behaviour Models

Health promotion campaigns have aimed at creating awareness of the negative impacts of binge drinking on personal health and social life (Johnston & White, 2003). Nonetheless, there is little evidence to prove that understanding the health risks associated with binge drinking leads to an actual decrease in the occurrence of this behaviour (Johnston & White, 2003). This incongruence between beliefs and behaviour is common and has been frequently observed in studies (Wicker, 1969). This attitude-behaviour discrepancy has led researchers to investigate the characteristics of behavioural decision-making and its influencers (Johnston & White, 2003). Many

theories and models have been proposed and developed as an outcome of these efforts (Johnston & White, 2003).

A major part of research in the field of health-related behaviour has been towards appraising the explanatory and predictive validity of proposed theories including the Health Belief Model (Rosenstock, 1966; Becker, 1974, as cited in Nigg, Allegrante, & Ory, 2002), the Self-Determination Theory (Deci and Ryan, 1980, as cited in Nigg et al., 2002), Social Cognitive Theory (Bandura, 1986), Theory of Reasoned Action/Planned Behaviour (Ajzen and Fishbein, 1980 as cited in Nigg et al., 2002; Ajzen and Madden, 1986) and the Trans-Theoretical Model (Prochaska, DiClemente, & Norcross, 1992), among others. Most research on health behaviour is centred on theoretical constructs laid out by these frameworks (Allegrante & Roizen, 1998, as cited in Nigg et al., 2002). Glanz, Lewis and Rimer (1997) had similar findings when they analysed the theoretical frameworks employed in articles published in the field of health education, medicine, and behaviour change from 1992-1994 (as cited in Noar & Zimmerman, 2005, p. 277). Their findings reveal that the Health Belief Model (HBM), Theory of Reasoned Action (TRA) /Planned Behaviour (TPB), Social Cognitive Theory (SCT) and the Trans-Theoretical Model (TTM) are the most commonly used models in health behavioural research (as cited in Noar & Zimmerman, 2005, p. 277).

Rimer (2008), and Rosenstock, Strecher, and Becker (1988) suggest that the Health Belief Model is a value expectancy theory which was formulated by a few social psychologists, in the 1950's while trying to understand people's negative disposition towards tuberculosis screening initiatives (Rosenstock, 1974, as cited in Janz & Becker, 1984). In the following two decades, other value expectancy theories such as the Theory of Reasoned Action/Planned Behaviour and Social Cognitive Theory gained ground (Rimer, 2008, Rosenstock et al., 1988). While the above theories emphasise understanding and predicting health behaviour, the Trans-Theoretical Model focuses on intentional behaviour change (Noar & Zimmerman, 2005). Alternately known as Stages of Change (SOC), Prochaska and DiClemente began work on this model in the late 70's and it developed in time with contributions from others in the field (Rimer, 2008).

The above theories essentially use key constructs of motivation, intentions and behaviour to explain an individual's cognitive framework with respect to his personal and social environment (Nigg et al., 2002). These constructs are known to be crucial even if not sufficient drivers of health related behaviour (Sallis & Owen, 1999, as cited in Nigg et al., 2002). The following section describes the four most commonly employed health behaviour models; HBM, TRA/TPM, SCT and SOC.

2.3.2.1 Health Belief Model (HBM)

Of the frameworks in the field of health behaviour, the HBM has been the longest applied and consequently reviewed (e.g. Aho, 1979; Cummings, Jette, Brock, & Haefner, 1979; Langlie, 1977; Rundall, 1979; Weinberger, Greene, Mamlin, & Jerin, 1981). As cited in Janz and Becker (1984, p. 2), the HBM was initially developed to understand people's avoidance of tuberculosis screening programs and was later extended to understand how patients deal with symptoms (e.g. Kirscht, 1974) and prescribed medical regimens (e.g. Becker, 1974). The HBM has been applied with Preventive Health Behaviours (PHB), i.e. actions taken to avoid illness or injury and Sick Role Behaviours (SRB), i.e. actions taken post diagnosis of a condition to restore good health or to check further development of disease or illness (Janz & Becker, 1984; Strecher & Rosenstock, 1997).

According to Maiman and Becker (1974), the HBM is rooted in recognised psychological and behavioural theory which posits that behaviour is essentially driven by an individual's assessment of a goal's importance, and by the ability of a given action to lead to that goal (as cited in Janz & Becker, 1984, p. 2). The HBM applied this construct to health related behaviours. According to Hochbaum (1958), the HBM is based on the principle that health behaviour is a function of personal beliefs about a disease and the possible means available to decrease its incidence. In other words, health behaviour may be called a function of (1) the desire to avoid disease or to get cured, (2) the level of desire for a given state of health; and (3) the conviction that a certain health action will avoid/cure illness (Becker, Maiman, Kirscht, Haefner, & Drachman, 1977). The original HBM operationalized this construct through the following dimensions (Rosenstock, 1974; Janz & Becker, 1984). Below is a summary of the main dimensions as presented by the authors:

(a) Perceived susceptibility – One's assessment of personal vulnerability to a condition. The probability that one will engage in preventive behaviour depends on how vulnerable they see themselves to the condition (Redding, Rossi, Rossi, Velicer, & Prochaska, 2000). Redding et al. (2000) also claim that people tend to underrate their personal susceptibility to negative conditions.

(b) Perceived severity - One's appraisal of the seriousness of impact of a given condition on personal and social life (e.g., death, disability, pain, impaired ability to work, family life, and social relations). The combined perceptions of susceptibility to and seriousness of a condition constitute a health threat (Redding et al., 2000).

(c) Perceived benefits – One's perception of the advantages of undertaking recommended health behaviour i.e. one's appraisal of the ability of the health behaviour to reduce the health threat.

(d) Perceived barriers – One's perception of the physical, psychological, monetary, or other disadvantages of undertaking a suggested behaviour (Becker et al., 1977).

While a high health threat may drive behaviour, it does not necessarily dictate the action path adopted (Cartwright, 1949). The choice of an action path is driven by the perceived effectiveness of the available action paths in reducing the threat (Redding et al., 2000). Redding et al. (2000) explain that prior to deciding on a certain action path, an individual cognitively analyses each available path in terms of its benefits and barriers; also known as outcome expectation. Usually an action path where the benefits outweigh the barriers will be adopted (Redding et al., 2000). In summarizing the above dimensions, Rosenstock (1974) notes "[t]he combined levels of susceptibility and severity provided the energy or force to act and the perception of benefits (less barriers) provided a preferred path of action" (as cited in Janz & Becker, 1984, p. 2).

In addition to the four primary dimensions seen above, the model also factors in catalysts that initiate action or behaviour change. These catalysts are termed as "cues to action" and they can be factors internal to an individual (e.g. experience of certain symptoms) or external (such as social exchanges, mass communication etc.) (Janz &

Becker, 1984; Redding et al., 2000). Redding et al. (2000) propose that the interaction of HBM dimensions may also trigger action. In cases where perceived susceptibility and severity are high, the degree of stimulation required to cause action may be very low. On the contrary, when these perceptions are low, a much stronger stimulation may be needed to result in action. While a part of the HBM, 'cues to action' as a variable, has not received sufficient attention in research and hence its significance in predicting health behaviour is not well established (Rosenstock, 1990; Harrison, Mullen & Green, 1992).

Along with 'cues to action', health related behaviours are also considered to be subject to influence from demographic, socio-psychological, and structural variables (Janz & Becker, 1984). Known as mediating factors (Redding et al., 2000), these variables may influence perceptions of susceptibility, severity, benefits and barriers, thereby indirectly affecting behaviour (Rosenstock, 1990). As research in the area of health related behaviour continues, the original HBM has expanded (Becker & Maiman, 1975) to include other variables found to play a role in influencing health behaviour, namely 'motivation' (Redding et al., 2000) and 'self-efficacy' (Janz & Becker, 1984). These variables are discussed individually below.

In addition to the original HBM variables, health motivation is also considered to influence behaviour (Becker & Maiman, 1975). Health motivation can be considered as the measure of a person's willingness to modify behaviour (Strecher & Rosenstock, 1997). This variable essentially denotes the variances in people's dispositions towards matters of health (Becker et al., 1977).

'Self-efficacy' is another variable that is included in the expanded HBM (Redding et al., 2000). Bandura defines self-efficacy as "the conviction that one can successfully execute the behaviour required to produce the outcomes" (1977, p. 193). The original HBM does not consider the concept of self-efficacy since the context in which it was proposed did not require people to access their efficacy expectations to a significant extent (Rosenstock et al., 1988). HBM originally focused on understanding people's disposition towards accepting immunizations (Rosenstock et al., 1988). Since this behaviour is fairly simple and does not require high self-efficacy for performance, this

variable was not distinguished (Rosenstock et al., 1988). However, altering habitual behaviours (e.g., smoking, drinking) is not as simple as performing a one off immunization activity (Rosenstock et al., 1988). Unless one believes in his or her personal ability to bring about such change, effective intervention is difficult (Rosenstock et al., 1988). Thus, successful behaviour change necessitates that,

> [P]eople must (as the HBM theorizes) have an incentive to take action, feel threatened by their current behavioral patterns and believe that change of a specific kind will be beneficial by resulting in a valued outcome at acceptable cost, but they must also feel themselves competent (self-efficacious) to implement that change (Rosenstock et al, 1988, p. 179).

Janz and Becker (1984), reason that self-efficacy can be considered as a part of the "perceived barriers" dimension of the HBM. They clarify this with an example: a smoker who fails repeatedly at his attempts to quit would not have much confidence in his ability to quit successfully i.e. his self-efficacy would be quite low (Janz & Becker, 1984). In such a scenario, his low self-efficacy or his failure to quit in the past would act as a barrier for attempting to quit in the future (Janz & Becker, 1984). Contrary to the viewpoint of Janz and Becker (1984), Rosenstock et al. (1988) argue that instead of considering 'self-efficacy' as one of the barriers, it should be maintained as a separate component. According to them, this would improve the predictability of the model and make it possible to account for variances.

Research by Ajzen and Fishbein (1980) shows that adoption/maintenance of a certain behaviour is also influenced by "the person's beliefs that specific individuals or groups think he should or should not perform the behaviour" (as cited in Janz & Becker, 1984, p. 44). Termed as "social approval", Janz and Becker (1984) believe that this component may be considered as an aspect of the perceived benefits or perceived barriers dimension of the HBM. They reason that performing a behaviour that is socially approved can be considered as a benefit while undertaking an action that is socially disapproved can be regarded as a barrier. For example a person wanting to quit smoking, may not make efforts in that direction as he may fear rejection by his pro-smoking colleagues (Janz & Becker, 1984).

This section has detailed the different variables of the health belief model, namely perceived susceptibility, perceived severity, perceived barriers, perceived benefits, cues to action, mediating factors and health motivation. The influence of self-efficacy and social approval has also been outlined. The following section briefly presents the limitations of the HBM model.

Limitations to HBM research

Janz and Becker (1984) reviewed and summarized results from 46 (29 studies published from 1974-1984 and 17 studies conducted prior to 1974) HBM-related investigations. These reviews strongly support the ability of HBM's dimensions to explain and predict health related behaviours (Janz & Becker, 1984). The dimension of perceived barriers has a dominating influence over multiple study designs and behaviours (Janz & Becker, 1984). While perceived susceptibility and benefits (Becker, 1974) are seen to be equally important, the former plays a greater role in accounting for preventive health behaviours (PHB) rather than sick role behaviours (SRB). Perceived severity has the lowest influence and was only found significant in SRB (Becker, 1974; Janz & Becker, 1984).

Contrary to Janz and Becker's review findings, Sheeran and Abraham's (1996) review of the HBM noted that HBM variables have a very weak correlation with behaviour. According to Becker (1974), the HBM works best in studies where people account for their past personal behaviour and is least effective in studies which have attempted to change beliefs to obtain behaviour (Becker, 1974). In the words of Haefner (as cited in Becker, 1974, p. 103) "a conceptual model that 'postdicts' everything and predicts little is of minimal use". The scope of the model is also limited to accounting for health related beliefs and attitudes and does not suggest any alternatives for modifying them (Janz & Becker, 1984).

Sheeran & Abraham further criticise the model by stating that there are no standard methods available for operationalizing its variables (1996). The model does not define the quantity of each dimension required for behaviour to occur (Becker, 1974). Consequently, every researcher appears to employ a different method of defining scales and measuring variables (Janz & Becker, 1984). Comparing findings across studies

therefore becomes challenging (Becker, 1974). However, Janz & Becker (1984) assert that in spite of different measures, the model dimensions remain predictive of health behaviours.

According to Janz and Becker (1984), the HBM is limited in its ability to account for certain variances in health related behaviours. For example, the model has limited relevance to behaviours with substantial habitual components (e.g. smoking) since such behaviours tend to override the conventional psycho-social decision-making process (Janz & Becker, 1984). Janz & Becker (1984) state that health related behaviour is difficult to account for when it is undertaken for non-health reasons (e.g. avoiding smoking in public to gain social approval). They further posit that the dimensions of the HBM may not be applicable in scenarios where monetary and/or environmental factors deter the adoption of a recommended action path (e.g. a labourer in an unhealthy environment). The HBM is based on the premise that most individuals place serious importance on their health and that cues to action are widely prevalent (Janz & Becker, 1984). The model has restricted application where these assumptions are not true (Janz & Becker, 1984). Irrespective of the shortcomings of the HBM, Becker (1974) maintains that it is the best developed conceptual framework to account for people's health related behaviour.

2.3.2.2 Theory of Reasoned Action (TRA)

Developed by Fishbein and Ajzen, the Theory of Reasoned Action (TRA) aims at understanding several different behaviours by employing a few concepts woven together in a distinct theoretical framework (1975, as cited in Manstead, Proffitt, & Smart, 1983). Multiple research designs performed in different contexts have supported this theory (e.g. Bentler & Speckart, 1979; Ajzen & Fishbein, 1980; Ajzen, Timko, & White, 1982; Manstead, Proffitt, & Smart, 1983). The theory has been applied to various health-related behaviours such as weight loss, smoking, alcohol abuse, HIV risk behaviours, and mammography screening (Redding et al., 2000).

According to the TRA, intention is the precursor to behaviour. Thus whether or not one performs certain behaviour largely depends on the degree of intention to perform (or not to perform) that behaviour (Fishbein, 2004). Intention can be considered as the

probability of one attempting the behaviour in question (Fishbein, 2004). The theory determines intention through two components; attitude and subjective norm (Ajzen & Madden, 1986). Attitude in this context is understood as one's general appraisal (either approving or disapproving) of the behaviour in question (Ajzen & Madden, 1986). Subjective norm refers to the perception of one's social circle's outlook towards the behaviour (either approving or disapproving) (Ajzen & Madden, 1986). Fishbein (2004) posits that the role of attitude and subjective norm in determining intention will vary with the behaviour and population being considered. A behaviour may be determined by attitude in a given population and the same behaviour may be a determined by subjective norms in another population (Fishbein, 2004).

As indicated above, TRA determines intention through attitude and subjective norm. In addition, the theory also specifies the drivers of attitudes and subjective norm (Ajzen & Madden, 1986; Fishbein, 2004). Attitude is thought to be influenced by behavioural beliefs (Ajzen & Madden, 1986). Each behavioural belief associates a certain outcome with the behaviour (Ajzen & Madden, 1986). The evaluation of this outcome (positive or negative), influences the attitude towards the behaviour (Ajzen & Madden, 1986). This influence is weighted by the strength of the belief that the behaviour will result in the outcome under consideration (Ajzen & Madden, 1986). The overall attitude towards the behaviour is the aggregate of the product of the strength and outcome evaluation of each salient belief (Ajzen & Madden, 1986). Thus, one may have a strong positive attitude toward a certain behaviour if one believes that it will lead to positive outcomes (Fishbein, 2004).

In the same way attitude is determined by behavioural beliefs, subjective norm is determined by normative beliefs (Fishbein, 2004). Normative belief is one's perception of whether the behaviour in question would be approved of or disapproved by his or her significant referent individuals/groups (Ajzen & Madden, 1986). The contribution of normative belief to subjective norm is weighted by an individual's motivation to conform to the referent in question (Ajzen & Madden, 1986). Thus, the perceived pressure (subjective norm) to perform the behaviour will be higher if one is motivated to comply with important others who are in favour of the behaviour.

This section imparts a basic understanding of the TRA. The theory posits that behaviour is driven by intention to perform a certain action, which in turn is influenced by attitude and subjective norms.

Limitations to the TRA

Despite its success, TRA suffers from a few limitations (Ajzen & Madden, 1986). Firstly, intention and behavioural criterion must be measured on the same level (Ajzen, 1982; Ajzen & Fishbein, 1977, as cited in Ajzen & Madden, 1986). For example, to predict whether one would attend school on a regular basis, the corresponding intention has to be assessed i.e. whether one intends to attend school regularly (Ajzen & Madden, 1986). The second issue is that the theory requires intention to remain constant in the interval between the measurement of intention and observation of behaviour (Ajzen & Madden, 1986). The probability of a change in intention due to unexpected events is directly proportional to the length of the time interval (Ajzen & Madden, 1986). Consequently, the accuracy of prediction would be inversely proportional to this time interval (Ajzen & Madden, 1986).

Another major limitation of TRA highlighted by Fishbein & Ajzen (1975) is that it necessitates for the observed behaviour to be under volitional control (as cited in Ajzen & Madden, 1986). Volitional behaviours can be considered as behaviours on which a person has complete behavioural control (Azjen & Madden, 1986). A person can be said to have complete behavioural control if he can choose at will to perform or not perform certain behaviour (Azjen & Madden, 1986). Behavioural control can be seen as a continuum, where on one end are behaviours that face very few problems of control and on the other end are behaviours or behavioural events over which one has very limited control (Azjen & Madden, 1986). For example, one may face limited problems of control in trying to read a book but problems of control become pronounced and salient when one aims at achieving a more difficult goal such as quitting smoking or drinking (Azjen & Madden, 1986). The TRA does not consider the significance of one's control over performance of the behaviour (Azjen & Madden, 1986). Ajzen (1988), states that TRA was developed for exclusively volitional behaviours or easy behaviours (as cited in Armitage & Conner, 1999).

The following section introduces the Theory of planned behaviour which was developed to overcome the TRA's limitation of volitional control.

2.3.2.3 Theory of Planned Behaviour (TPB)

The TRA bases behaviour solely on intention; thus it cannot be effectively applied where one has limited control over a behavioural goal (Azjen & Madden, 1986). Control of planned behaviour can be hindered by factors both internal (e.g. skills) and external (e.g. time) to an individual. Thus, in behaviours with limited volitional control, it is not only essential to evaluate intention but also measure an individual's ability to exercise control over the behaviour in question. Consequently, Ajzen (1985) extends the original theory by incorporating the concept of behavioural control which he calls the Theory of Planned Behaviour (as cited in Azjen & Madden, 1986).

The significance of actual control in influencing behaviour is apparent: the opportunities and means available to a person would be expected to regulate the probability of behavioural achievement (Azjen & Madden, 1986). While the importance of control is evident, Azjen and Madden (1986) highlight that it is not practically possible to obtain an appropriate measure of actual control prior to observing the behaviour. They reason that in several cases, intended action is hindered by unforeseen factors, which are mostly accidental in nature and hence cannot be anticipated in advance.

Azjen and Madden (1986) recommend that the difficulty experienced with actual control can be overcome by measuring Perceived Behavioural Control (PBC). Azjen and Madden (1986) define PBC as a perception of how easy or difficult performing a certain behaviour is going to be. Azjen and Madden (1986) state that as beliefs concerning behaviour outcomes are seen as determinants of attitude, and normative beliefs as determinants of subjective norms, beliefs about resources and opportunities can be taken as drivers of perceived behavioural control. The greater the resources and opportunities individuals think are at their disposal and the lesser the difficulties they foresee, the higher the perceived control over their behaviour (Azjen & Madden, 1986). The authors claim that like behavioural and normative beliefs, these beliefs on control can be considered as separate and independent drivers of behaviour. According to the authors, these control beliefs may be derived from personal experience or those of acquaintances and friends.

Armitage and Conner (2001) suggest that PBC interacts with behaviour directly or through intention. They state that when interacting through intention, the extent of PBC's influence depends upon the type of behaviour. Thus, according to them, PBC may not play an influential role in predicting intentions where attitudes or normative influences are relatively strong. They also expect PBC's influence on the intention-behaviour relationship to be minimal in conditions of complete volitional control. Accordingly, in scenarios with limited volitional control, PBC can be expected to moderate the intention-behaviour relationship (Baron & Kenny, 1986). However, Ajzen (1991) found little evidence to support the idea of the moderating role of PBC (as cited in Armitage & Conner, 2001). Ajzen (1991) claims that in situations where intention can explain only limited variances in behaviour, PBC can be expected to predict behaviour independently (as cited in Armitage & Conner, 2001).

Ajzen (1991) proposes that the notion of self-efficacy is comparable to PBC (as cited in Armitage & Conner, 2001). However Norman and Hoyle (2004) and Armitage and Conner (1999) argue that it is important to distinguish between self-efficacy and PBC (Manstead & van Eekelen, 1998). Bandura (1986, 1992) elucidates that self-efficacy relates to internal control factors and associated cognitive perceptions, while PBC is a set of more external and general factors. In a comparison of theories (TRA, TPB and SCT), Dzewaltowski, Noble, and Shaw (1990) found that self-efficacy, rather than PBC has a direct impact on behaviour.

The above section introduces the concept of PBC and an understanding of its interaction with intention and behaviour. The following section briefly outlines the limitations of TPB.

Limitations to TPB research

The TPB is among one of the leading models for prediction of human social behaviour (Ajzen, 2011). The theory is well applied to a range of health enhancing and health impairing behaviours (Conner & Armitage, 1998; Conner & Sparks, 2005). It has also been supported by many meta-analytical reviews (Armitage & Conner, 2001).

A limitation of TPB is that it uses self-reports which are found to be vulnerable to self-presentational biases (Gaes, Kale, & Tedeschi, 1978, as cited in Armitage & Conner, 2001). When compared with relatively objective measures of behaviour, self-reports have been found to be unreliable (Armitage & Conner, 1999).

Another limitation of TPB, like TRA, is that the intention behaviour correlation is negatively impacted by the time interval between the measurement of intention and observation of behaviour (McEachan, Conner, Taylor, & Lawton, 2011). Ajzen (2011) explains that the greater this interval, the higher is the likelihood of occurrences that influence one's behavioural, normative or control beliefs thereby modifying attitudes, subjective norms or perceptions of control thus creating revised intentions. He further adds that this tends to reduce the predictive validity of intentions that were evaluated prior to the changes. However, Kor and Mullan (2011) argue that a low correlation between intention and behaviour has been observed even during small time intervals (as cited in Ajzen, 2011). Ajzen (2011) accounts for this variance with a lack of actual control over behaviour. Armitage and Conner (2001) suggest that the ability of PBC to predict behaviour depends on how closely it represents actual control. Consequently, they contend that a disagreement here can create difficulties in accounting for variances in behaviour using PBC.

The above section has presented the limitations faced by TPB. Thus far value expectancy theories such as HBM, TRA and TPB were detailed. The following section presents a behaviour change model; the Trans-Theoretical model of behaviour (TTM), also known as the Stages of Change (SOC) model.

2.3.2.4 Trans-Theoretical model of behaviour (TTM/SOC)

Prochaska and DiClemente's (1983) TTM is one of the leading conceptual resources in the field of health communication (as cited in Whitelaw, Baldwin, Bunton, & Flynn, 2000). The TTM is an outcome of Prochaska and DiClemente's efforts to consolidate several perspectives on smoking behaviour change (Prochaska & DiClemente, 1983). The TTM aims at explaining how people deliberately change their behaviour on their own or with the help of psychotherapy (Prochaska, DiClemente, & Norcross, 1992). The TTM consolidates contemporary cognitive theoretical frameworks such as the

HBM and the TRA to present a novel comprehensive, multi-layered outlook towards health behaviour change (Whitelaw et al., 2000). The model is known as trans-theoretical as it brings together concepts and structures of change from multiple theories of intervention (Prochaska & Velicer, 1997).

The TTM model employs three core constructs (DiClemente & Prochaska, 1998). The first construct known as 'stages of change' postulates that behaviour change is dynamic and involves progress through five stages; precontemplation, contemplation, preparation, action and maintenance (Prochaska, DiClemente, & Norcross, 1992). Second, the model proposes that movement through these stages takes place via ten specific processes of change (Whitelaw et al., 2000). Finally, the concept of levels of change relates to the fact that people face varying issues at each level. DiClemente and Prochaska identified these constructs during an empirical investigation of the importance of the processes of change smokers employ in trying to quit smoking (1982, as cited in Prochaska & DiClemente, 1982). Since then, the scope of the stage model has expanded to incorporate research and applications with a wide range of health and mental health behaviours such as alcohol and substance abuse, anxiety and panic disorders and AIDS prevention (Prochaska & Velicer, 1997). The three core constructs of the TTM have been explained individually below:

Stages of Change:

Prochaska and Velicer (1997) regard change as a phenomenon that takes place over a period of time. The process of change entails movement across a series of stages described below:

Precontemplation is the stage where people do not see themselves taking any action in the next six months (Prochaska, DiClemente, & Norcross, 1992). Prochaska and Velicer (1997) believe that insufficient knowledge about the consequences of behaviour or low self-efficacy due to failure of prior attempts may be reasons for people being in this stage. They further state that in either case, the tendency is to avoid activities that may lead to increased cognition of their high risk behaviours.

The next stage, contemplation, comprises people who are conscious of the problem behaviour and are seriously considering change but are yet to take a firm stand (Prochaska, DiClemente, & Norcross, 1992). According to Prochaska and Velicer (1997), the people in this stage well realize the advantages and disadvantages of changing behaviour, but tend to stay in this phase for a long time due to their ambivalent feelings towards the behaviour. Prochaska and Velicer call this tendency "chronic contemplation" or "behavioural procrastination" (1997, p. 39).

Preparation is a stage where people are expecting to take action in the next month, and have unsuccessfully attempted some significant action in the previous year (Prochaska, DiClemente, & Norcross, 1992; Prochaska & Velicer, 1997). According to Prochaska, DiClemente, and Norcross, this stage is a combination of "intention and behavioural criteria" (1992, p. 4). The people in this state have a decided course of action such as getting a self-help book, or talking to their counsellor or physician (Prochaska & Velicer, 1997).

In the action stage, people have made explicit modifications in their behaviour in the past six months (Prochaska & Velicer, 1997). Prochaska and Velicer (1997) state that since action is manifest, it is often considered as behavioural change. However, they clarify that TTM considers action as only one of the stages of behavioural change. They also emphasise that a change in behaviour can be considered as an action only if it meets certain criteria. According to them, these criteria must be unanimously considered as appropriate by field experts to reduce susceptibility to the condition. For example, they illustrate that in the case of smoking; only complete abstinence would be considered a qualifying criteria for action.

Maintenance is the stage in which people focus their efforts on avoiding relapse, however they do not need to use change processes as often as people in the action stage (Prochaska & Velicer, 1997). Prochaska and Velicer (1997) suggest that these people possess high levels of self-efficacy and are not easily enticed into past behavioural patterns. For addictive behaviours, Prochaska, DiClemente, and Norcross (1992), claim that maintenance can extend from six months to an unspecified period past the first action. They also consider maintenance of a new health enhancing behaviour for more

than six months without reverting to addictive behaviours as a qualifying factor for this stage.

Progress through the stages discussed above is nonlinear, especially with addictive behaviours, where relapse is a high probability. The spiral pattern of change proposed by Prochaska, DiClemente, and Norcross (1992), suggests that while people move forward through the stages from contemplation to maintenance, a majority of them will relapse i.e. go back to an earlier stage. They also remark that not many relapsers revert to the initial stage where they began, but after relapsing to an earlier stage, they progress to the next stage.

Prochaska and Velicer's (1997) TTM of health behaviour change proposes an additional stage of change; termination. According to them, this stage comprises of people who have maximum self-efficacy and do not experience any temptation to go back to their old behaviour. Prochaska and Velicer (1997) maintain that the people in this stage irrespective of their emotional or mental state are confident of not relapsing. However, they acknowledge the rarity of this condition and consequently do not focus on it in their work.

The above section has presented TTM's first construct i.e. stages of change. The following section introduces the second core construct of TTM, processes of change.

Processes of Change

The stages of change construct helps in understanding how attitudes, intentions and behaviours shift with time (Prochaska, DiClemente, & Norcross, 1992). The processes of change are the second most important aspect of TTM; they facilitate understanding of how these shifts occur (Prochaska, DiClemente & Norcross, 1992). Prochaska (1979) identified these change processes while performing a theoretical comparative analysis of prominent psychotherapy systems (as cited in Prochaska, DiClemente, & Norcross, 1992). The processes of change stated in TTM are chosen by investigating change techniques recommended across different theories, in some cases even those with disparate theoretical orientations (Prochaska, DiClemente & Norcross, 1992). These processes represent subtle and obvious activities that people (self-changers,

psychotherapy clients, and mental health professionals) engage in as they move through the stages while trying to change problem behaviours (Prochaska & Velicer, 1997; Prochaska, DiClemente & Norcross, 1992). These processes are introduced below:

Prochaska, DiClemente, and Norcross (1992), and Prochaska and Velicer (1997) cite *Consciousness Raising* as the preliminary change process. According to them, it relates to obtaining information that leads to a higher cognizance of the reasons, consequences and cure for certain problem behaviours. They state that interventions employed to improve awareness include feedback, education, confrontation, interpretation, media campaigns and use of literature.

Dramatic Relief involves strong emotional involvement through the experience and expression of feelings about one's problem and its solutions (Prochaska, DiClemente, & Norcross, 1992; Prochaska & Velicer, 1997). Prochaska, DiClemente, and Norcross (1992), and Prochaska and Velicer (1997) suggest that psychodrama, role playing and grieving are interventions that can help in achieving dramatic relief.

Prochaska, DiClemente, and Norcross (1992), and Prochaska and Velicer (1997) suggest that *Self-re-evaluation* is a cognitive and affective evaluation of one's own self-image with and without a certain unhealthy habit. They consider value clarification, healthy role models and imagery as means of driving people towards self-re-evaluation.

Prochaska, DiClemente, and Norcross (1992), and Prochaska and Velicer (1997), explain *Environmental Re-evaluation* as a cognitive and affective evaluation of the impact of the presence or absence of a personal habit on one's social environment. They state that such assessment can be driven by empathy training, documentaries, and family interventions. Considering the effect of personal smoking on others, or being conscious of appearing as a positive or negative role model are some examples of evaluating one's effect on the social environment (Prochaska, DiClemente, & Norcross, 1992; Prochaska & Velicer, 1997).

Self-liberation is having a conviction in one's ability to change and making a commitment to work in that direction (Prochaska, DiClemente, & Norcross, 1992;

Prochaska & Velicer, 1997). Prochaska, DiClemente, and Norcross (1992), and Prochaska and Velicer (1997), also term self-liberation as willpower and suggest that it can be improved through multiple choices, public testimonies and decision-making therapy.

Prochaska and Velicer (1997) explain *Social Liberation* mandates increased opportunities or options for non-problem behaviours available in society. For example, smoke free zones and salad bars in school lunches (Prochaska & Velicer, 1997).

Counterconditioning requires adoption of healthy behaviours as an alternative for problem behaviours (Prochaska, DiClemente, & Norcross, 1992; Prochaska & Velicer, 1997). For example, relaxation can be used to counter stress, assertion can be used to face peer pressure, and cigarettes can be replaced by nicotine-free substitutes (Prochaska, DiClemente, & Norcross, 1992; Prochaska & Velicer, 1997).

Prochaska, DiClemente, and Norcross (1992), and Prochaska and Velicer (1997), state that *Stimulus Control* involves avoiding or countering cues that provoke problem behaviours. All of the authors claim that avoidance and self-help groups work to provide stimuli that aid change and decrease the probability of relapse.

Reinforcement Management relates to bolstering one's efforts to change by rewarding oneself for making changes or being rewarded by others (Prochaska, DiClemente, & Norcross, 1992; Prochaska & Velicer, 1997). Prochaska, DiClemente, and Norcross (1992), and Prochaska and Velicer (1997), suggest contingency contracts, overt and covert reinforcements, positive self-statements, and group recognition as methods for providing strong reinforcement and thereby increasing the likelihood of repeated healthier responses.

Prochaska, DiClemente, and Norcross (1992), and Prochaska and Velicer (1997), emphasise that *Helping Relationships* allow one to freely express their problems with someone caring and trustworthy. Social support can be obtained from rapport building, therapeutic alliance, counsellor calls and buddy systems (Prochaska, DiClemente, & Norcross, 1992; Prochaska & Velicer, 1997).

Prochaska and DiClemente (1985) find that of the above processes, *Helping Relationships, Consciousness Raising*, and *Self-liberation* were most frequently used in the problem areas of smoking, psychological distress, and obesity (as cited in Prochaska, DiClemente, & Norcross, 1992). Their findings also reveal *Reinforcement Management* and *Stimulus Control* as the least used processes (as cited in Prochaska, DiClemente, & Norcross, 1992).

Integration of stages and processes of change

Prochaska, DiClemente, and Norcross (1992) stress that each of the processes described above applies specifically to a particular stage of change. Table 2.2 is an integration of the stages and processes of change as per the authors' suggestions.

Table 2.2

Integration of Stages of Change and Processes of Change

Precontemplation	Contemplation	Preparation	Action	Maintenance
Consciousness Raising Dramatic Relief Environmental Reevaluation				
	Self-reevaluation			
		Self-liberation		
			Reinforcement Management Helping Relationships Counterconditioning Stimulus Control	

Note. Adapted from "In search of how people change: Application to addictive behaviours" by Prochaska, J. O., DiClemente, C. C., and Norcross, J. C, 1992, *The American Psychologist, 47*(9), p. 1109.

Prochaska, DiClemente, and Norcross (1992) find that precontemplators use limited time and energy for problem-associated cognitive and affective processing. Consequently, they identified that the use of change processes in this stage is relatively low. They posit that moving towards contemplation, cognitive, evaluative and affective processing increases. They suggest as people become more aware of themselves and their problem, they engage in a cognitive and affective reassessment of themselves, their values, the problem, and its impact on their important others. In their studies Prochaska, DiClemente, and Norcross (1992) found that a few of the changes from this stage carry over to the preparation stage. They also found that people in this stage start working towards action. In the action stage they identified that people experience strong will power and self-liberation and people employ behavioural processes to modify stimuli that frequently cause relapse. According to Prochaska, DiClemente, and Norcross (1992) progressing from action to maintenance involves identification of probable causes of relapse and possible methods for dealing with them without doubting self-efficacy and using pathological response as a recourse. For example, one could draw support from the feeling that one was progressing towards being the kind of person one

wanted to be (Prochaska, DiClemente, & Norcross, 1992). Prochaska, DiClemente and Norcross (1992) assert that progress through the stages is possible when prescribed change processes are applied at the appropriate stage (Mau et al., 2001).

The above sections have explained the three core constructs of TTM; stages of change, process of change and integration of stages and processes of change. The following section presents the views of other researchers in the field of health behaviour on TTM.

Limitations to TTM research

While the TTM is popular and has been widely applied in its field in comparison to other stage models, it has been criticised for weak evidence in its support (e.g. Whitelaw et al., 2000; Brug & Kremers, 2005). Investigations have also failed to find strong strong support with respect to its applicability to promote alternative behaviours (Armitage & Conner, 2000).

Concerns over the validity of the model have been expressed by many researchers (e.g. Davidson, 1992; Farkas et al., 1996) especially with regards to the construct of stages and their distinction (e.g. Weinstein et al., as cited in Brug & Kremers, 2005). While Bandura (as cited in McKellar, 2005) believes that TTM is not an authentic stage model, Proachaska and Velicer (1997) confirm that it is. Bandura reasons that “human functioning is simply too multifaceted and multi determined to be categorized into a few discrete stages” (1997, as cited in McKellar, 2005, p. 252). Also, the stage transition determinants proposed by TTM have not been strongly supported (Brug & Kremers, 2005).

In addition to a clear distinction between stages, there is no unanimity on an effective way of mapping people to appropriate stages of change (Whitelaw et al., 2000; Brug & Kremers, 2005). For example, while assessing narratives by smokers, McKie, Laurier, Lennox and Taylor (1999) find that in a span of time as short as a few minutes, people could traverse through varying stages of change (as cited in Whitelaw et al., 2000). Lechner, Brug, Vries, Assema, and Mudde (1998), state that one cannot be confident of the validity of self-reported behaviour with respect to stages. In their 1998 study they find that each time they used a different method of assessment, the participants reported

themselves to be in a different stage. They thus concluded “subjects who were in action or maintenance according to traditional classification were classified in precontemplation stage according to the alternative classification method” (Lechner et al., 1998, p. 8). Conner (2005) suggests that these discrepancies in mapping stem from the inconsistencies in the stage construct.

Another debate surrounding the TTM concerns the effectiveness of stage matched interventions. Whitelaw et al. (2000), in their review of the literature on the TTM, found very limited data while evaluating the actual outcome of application of TTM. They realized that ‘behavioural change’ as an outcome has not been measured in most literature. Riesma et al. (2002, 2003), in their review found that there is insufficient evidence to demonstrate the effectiveness of stage matched interventions (as cited in Whitelaw, 2005). The model has been suggested to be ineffective in attaining goals set for promoting health-enhancing behaviours, for example, improving smoking cessation levels (e.g. Aveyard et al., 1999), an increase in the number of breast screening examinations (e.g. Crane et al., as cited in Whitelaw et al., 2000), implementing dietary changes (e.g. Greene & Rossi, 1998), increased physical activity levels (e.g. Naylor, Simmonds, Riddoch, Velleman, & Turton, 1999), or improving weight, BMI, blood pressure and serum cholesterol (e.g. Steptoe et al., 1999, as cited in Whitelaw et al., 2000).

Whereas the above studies question the effectiveness of stage-based interventions, Prochaska (2003) defends it by citing supporting opinions from Spencer et al.’s review (2002, as cited in Whitelaw, 2005). Employing interventions that are tailored for a given stage has shown to increase adherence in patients with chronic illness (e.g. Miller, Hill, Kottke, & Ockene, 1997) such as diabetes (e.g. Doherty, Hall, James, Roberts, & Simpson, 2000; Joseph, Griffin, Hall, & Sullivan, 2001). A telephone counselling intervention which was developed by Jones et al. (2003) from the TTM was found to have a big effect.

However, Adams and White (2005) claim that while such stage-targeted interventions may be effective in moving people to a further stage; their ability to change actual behaviour is in doubt. Nevertheless, they do not discount the fact that progression

through these stages may lead to increased intention or motivation which is a crucial step in determining behaviour change (Sheeran, 2002; Brug & Kremers, 2005). Also, Brug and Kremers (2005) do not entirely support the claim that stage-matched interventions are unsuccessful in changing behaviour. According to them, stage-targeted activity can lead to a high probability of short-term behavioural changes. However, according to Sutton (2000), there is insufficient evidence to demonstrate that stage-matched initiatives are capable of achieving either short-term or long-term behavioural changes. Harré (2005) defends the model by stressing that the interventions employed are responsible for such failure and not the model.

The above section has presented the views of researchers in the field of health behaviour on TTM. It may be said that TTM has received a mixed response, with a set of researchers supporting the application of stage-matched interventions and another denouncing the validity of the stage construct in itself.

Summary

This chapter presented literature in the field of binge drinking, online forums and health behaviour. Following is a summary of key points brought out on each of these topics.

The first section of the review focuses on binge drinking. Generally, binge drinking is characterised by a high alcohol intake over a short space of time. According to research data brought out by different governmental health bodies, binge drinking is prevalent in adults in major parts of the world. While binge drinking is reported to be more prevalent in people with higher income and education, its intensity is higher in the younger and lower socio-economic groups. Binge drinking is a cause for serious concern since it has implications not only for the binge drinker but also for the well-being of the society.

The next section of the review presents the basic structure of an online forum. The inherent characteristics of a forum such as anonymity, invisibility, asynchronicity and minimization of status and their implications on communication have been highlighted.

The final section in the literature has reviewed the multiple definitions of health behaviour and prominent models employed in this field. Four commonly employed

models were presented in detail namely the Health Belief Model, the Theory of Reasoned Action, the Theory of Planned Behaviour and the Trans-theoretical Model. The perspectives of different researchers in the field of health behaviour on these models were highlighted.

Based on the understanding obtained from the literature review, the researcher proposes a framework well-suited for the research context in the following chapter.

Chapter 3:Theoretical Framework

The literature review on health behaviour in the previous chapter presented four prominent models used for explaining and changing people's health beliefs and actions. This chapter critically reviews the suitability of these models for the research context. It considers the strengths and limitations of each model and then proposes an integrative framework that best serves the research purpose.

3.1 Critical review of existing health models

The Health Belief Model (HBM) employs the principal dimensions of perceived susceptibility, severity, barriers, benefits and self-efficacy to explain health related beliefs and attitudes. However, the model does not propose any methods to alter beliefs and attitudes (Janz & Becker, 1984). In addition, Becker (1974) states that the model's effectiveness in obtaining behaviour by changing beliefs is relatively low.

The TRA bases behaviour solely on intention; thus it cannot be effectively applied where one has limited control over a behavioural goal (Azjen &Madden, 1986). Consequently, Ajzen (1985) extends the original theory by incorporating the concept of behavioural control which is known as the Theory of Planned Behaviour (as cited in Azjen & Madden, 1986). Thus according to TPB, behaviour is a combined function of three variables; attitude, subjective norm and perceived behavioural control. It is important to consider how the measurement of these variables can be applied in the research context. The attitude of the participants towards binge drinking can be measured qualitatively through the language and tone employed in the posts. The second variable, subjective norm can be defined in the context of this study as participants' perception of whether moderate drinking/avoidance of binge drinking would be approved or disapproved by their important others. In a pilot study conducted as a part of this research, the analysis of posts revealed that the participants were more inclined to share their own views and beliefs on drinking rather than their perceptions of what their important others think. Johnston and White (2003) measured university students' perceptions on what their important others think of binge drinking using the Likert scale:

‘‘If I drink five or more standard alcoholic beverages in a single session in the next two weeks most people who are important to me would’’; 1 approve to 7 disapprove” (Johnston & White, 2003, p. 68).

A self-report approach as used by Johnston and White (2003) above gives direct and clear insight into an individual’s perception of his important others’ views on binge drinking. It is difficult to obtain such information in this study as there is limited direct interaction with the participants and the analysis is bounded by the posts made by them. Without information on what a participant’s referent group/individuals think of moderate drinking, measuring subjective norms is difficult. The third variable, perceived behavioural control (PBC) in the context of this study can be defined as one’s perception of how easy moderate drinking would be or how difficult it would be to avoid binge drinking. The pilot study indicated that in some instances participants expressed whether avoiding binge drinking was in their control, while in other instances they did not. Thus, the measurement of PBC may not be possible for each post. Thus, of the three components of the TPB; attitude, subjective norm and PBC, only measure of attitude can be reliably applied to the online discussion.

The TTM is based on three principal constructs; stages of change, processes of change, and stage-matched interventions (Prochaska, DiClemente & Norcross, 1992). Many researchers have expressed doubts over the validity of the construct of stages and their distinction (Davidson, 1992; Farkas et al., 1996; McKellar, 2005, Brug & Kremers, 2005; Conner, 2005). There is also considerable ambiguity associated with the process of mapping people into relevant stages (Whitelaw et al., 2000; Brug & Kremers, 2005; Lechner et al., 1998).

The above review identifies key pointers with regards to each model; HBM is well recognized for its ability to predict behaviour but criticized for its inability to effect behavioural change. The TPB has three components, attitude, subjective norm and PBC, of which as explained above, only the measure of attitude can be reliably applied to the online discussion. Thus TPB cannot be applied in its entirety to this analysis. TTM is criticized for the limited ability of its stages construct to predict behaviour change,

however, its processes of change construct has been appreciated for its ability to systematically guide behaviour change.

This section has presented the strengths and limitations of key models in the field of health behaviour. The following section proposes a model that seeks to combine the strengths and overcome the limitations of these models.

3.2 Research Framework

The above section highlights that TPB cannot be applied in its entirety to the analysis and hence it may not prove suitable for the purpose of this research. The other two models discussed earlier were HBM and TTM. Both these models have been applied successfully in context with different health behaviours. Nonetheless, each has their own limitations. This research employs a framework that brings together salient features of both models in a manner that overcomes their individual weaknesses. The proposed framework employs HBM's dimensions' ability to predict behaviour along with TTM's change processes that facilitate behaviour change. Thus, established constructs from both models have been brought together in a way that complements each other; one predicts behaviour while the other facilitates it. The given framework combines the health beliefs of HBM with the change processes of TTM, thus, the researcher designates it the Health Belief Change Process Model (HBCPM). The HBCPM's application to serve the research purpose is explained below.

3.2.1 HBCPM Constructs

The HBCPM model is represented by Figure 3.1.

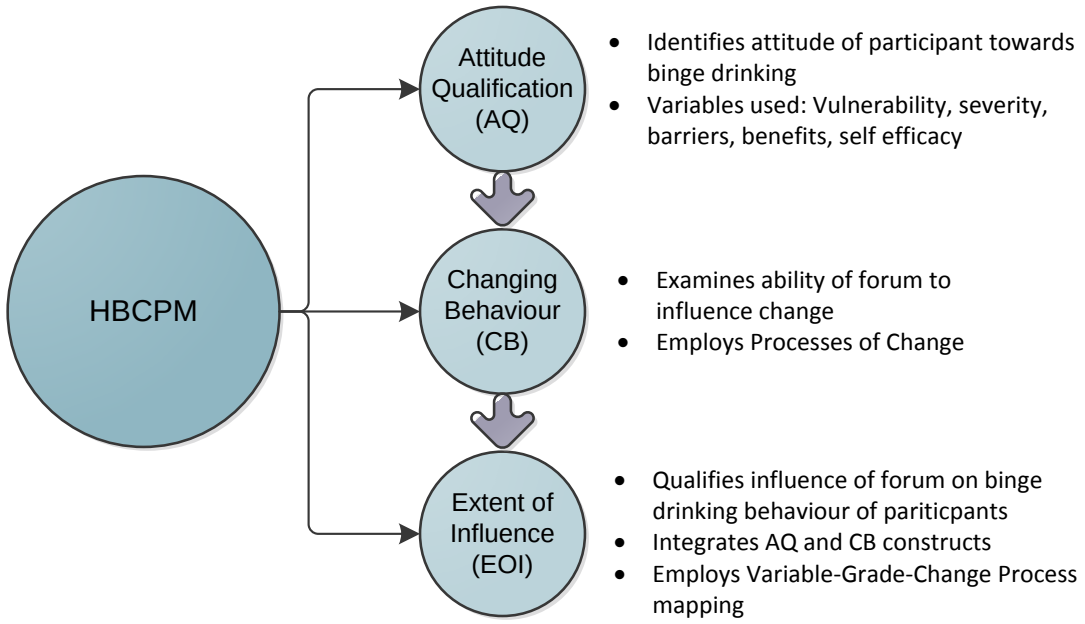


Figure 3.1. Health Belief Change Process Model (HBCPM)

HBCPM has two primary constructs and a secondary construct; Attitude Qualification (AQ), Changing Behaviour (CB) and Extent of Influence (EOI). Each construct is targeted at achieving a specific research aim.

3.2.1.1 Attitude Qualification (AQ)

The first construct, Attitude Qualification (AQ), aims to understand the attitude of participants on Partyvibe.com towards binge drinking. AQ measures attitude through the variables of perceived susceptibility, perceived severity, perceived barriers, perceived benefits and self-efficacy. The posts made by participants are analysed to identify the presence of any of these variables. Thus, AQ examines the language and tone employed by participants in their posts to understand their perspectives on vulnerability, severity, benefits, barriers and self-efficacy. Based on this examination, AQ grades participants' perceptions of each of the above variables as low, high or absent. For example, a certain participant may consider consequences of binge drinking to be highly severe; another may believe them to be less severe while some other participant may not make any comment on severity at all. The gradations (low/high/absent) of perceptions of different variables (vulnerability, severity, benefits, barriers and self-efficacy) are aggregated to facilitate insight into the attitude of participants towards binge drinking.

3.2.1.2 Changing Behaviour (CB)

The second construct of HBCPM is Changing Behaviour (CB) and it aims at understanding the ability of the forum Partyvibe.com to change the binge drinking behaviour of its participants. CB examines the participant's posts to identify the application of change processes. The processes of change allow participants to progress towards changing their binge drinking behaviour. Thus, if the change processes (*Consciousness Raising, Dramatic Relief, Environmental Re-evaluation, Self-re-evaluation, Self-Liberation, Social Liberation, Reinforcement Management, Helping Relationships, Counterconditioning, Stimulus Control*, and enhancing self-efficacy through *Modelling/ Verbal Persuasion*) are found to be applied in the posts, then it may be said that the forum has the ability to influence its participants to change their binge drinking behaviour.

3.2.1.3 Extent of Influence (EOI)

The third construct of HBCPM known as Extent of Influence (EOI) integrates the first two constructs Attitude Qualification and Changing Behaviour. This construct qualifies the influence of the forum on the binge drinking behaviour of its participants. To understand the quality of influence extended by the forum, EOI draws upon the Trans-Theoretical Model's concept of stage-matched interventions. According to Prochaska, DiClemente and Norcross (1992), each of TTM's change process applies specifically to a particular stage of change (precontemplation, contemplation, preparation, action and maintenance). EOI parallels this concept. It posits that each of the change processes of the CB construct (*Consciousness Raising, Dramatic Relief, Environmental Re-evaluation, Self-re-evaluation, Self-Liberation, Social Liberation, Reinforcement Management, Helping Relationships, Counterconditioning, Stimulus Control*, and *Modelling/ Verbal Persuasion*) apply specifically to a particular grade (low/high/absent) of an AQ variable (vulnerability, severity, benefits, barriers and self-efficacy). Thus, the forum may exert a high influence on participants' behaviour if the prescribed change processes are applied to the appropriate grade of variables. For example, consider a participant who regards the consequences of binge drinking as trivial. Thus, in this case, the variable 'severity' has a 'low' grade. In order to influence behaviour change for 'low' grade 'severity', the change processes of *Consciousness Raising, Dramatic Relief*

and *Environmental Re-evaluation* are best suited. Consequently, if posts that are addressed to this participant apply any of these three change processes, then it will be thought that the forum exerts a high influence on the participant's behaviour. Thus, according to EOI, when the appropriate 'Variable - Grade - Change process' mapping is applied then the forum can exert a high influence in facilitating a positive change in participant's behaviour.

Table 3.1 represents the Extent of Influence construct (EOI) i.e. the appropriate 'Variable - Grade - Change process' mapping. As stated before, this mapping is an integration of the Attitude Qualification (AQ) construct and Changing Behaviour (CB) construct.

Table 3.1
Extent of Influence: Variable-Grade-Change process Mapping

Variable	Grade	Change Process
Vulnerability Severity Self-Efficacy	Absent/Low	Consciousness raising Dramatic relief Environmental re-evaluation Modelling/ Verbal Persuasion
Vulnerability Severity Self-Efficacy	High	Self-re-evaluation Self-liberation Social Liberation Reinforcement management Helping relationships Counter-conditioning Stimulus control

This section has presented the HBCPM designed for the study by integrating two health behaviour frameworks. The following section outlines the merit of the integration.

3.2.2 Advantages of the integration

The framework employed in this research selectively integrates constructs from TTM and HBM and hence overcomes limitations of both these models. The advantages of the integration are discussed below.

Janz and Becker (1984) point out that HBM does not indicate specific methods for achieving behaviour change. Becker (1974) adds further that in studies where the model has been used to change behaviour, it has not been found very effective. The HBCPM designed for this research overcomes these limitations by mapping TTM's change processes to one's perceptions of HBM's dimensions. These processes allow individuals to achieve their goals and progress towards behaviour change (Prochaska & DiClemente, 1982; Prochaska, DiClemente, & Norcross, 1992) and they have been appreciated for their systematic guidance of behaviour change. Thus, this framework achieves the dual purpose of behaviour prediction through HBM's dimensions and guiding behaviour change through TTM's change processes.

Multiple researchers have expressed doubts over the validity of the construct of stages and their distinction (Davidson, 1992; Farkas et al., 1996; McKellar, 2005, Brug & Kremers, 2005; Conner, 2005). There is also considerable ambiguity associated with the process of mapping people into relevant stages (Whitelaw et al., 2000; Brug & Kremers, 2005; Lechner et al., 1998). This ambiguity was also observed during the pilot study. Since there are no clear determinants of stages, it was difficult to identify the stage of change to which a participant could be mapped. Participants also seemed to move from one stage to another in consequent posts. In certain cases, participants appeared to be in multiple stages at a given instant. To circumvent this ambiguity, the designed framework does not employ the stages of change as prescribed in the TTM. Instead, it expresses stages of change through gradations (absent/low/high) of Attitude Qualification (AQ) variables (susceptibility, severity, barriers and self-efficacy). The Extent of Influence (EOI) construct of HBCPM uses a grade of an AQ variable to identify the participants' level of change in the online discussion. For example, as per the TTM, people in the precontemplation stage do not think that they have a problem and hence they see no reason to change their behaviour. From the EOI perspective, this attitude is characteristic of people who either do not see themselves vulnerable to a certain condition or they underestimate the severity of its impact on their lives. Thus people in the precontemplation stage can be represented by low grades of vulnerability and severity. The pilot study has found that AQ variables' grades can be clearly identified from the posts, thereby reducing the subjectivity of the process. The grades stay relatively constant over subsequent posts. Hence employing AQ variable grades to

identify level of change eliminates the ambiguity associated with the TTM's stages construct.

The framework also takes into account participants' varying AQ variable grades. For example, in the case of participants who do not consider binge drinking a problem, the framework seeks to identify if arguments have been presented to stimulate a correct cognition of AQ variables and if the relevant change process has been applied. For participants who already see binge drinking as a problem and are experiencing difficulties in overcoming the problem, it identifies whether the relevant process of change has been applied. Thus, the framework does not limit itself to identifying the possibility of change for only a certain category of participants on the online discussion, but looks at identifying different change dynamics that may be taking place on the thread.

The HBM does not specify standard guidelines for operationalizing its variables (Sheeran & Abraham, 1996). This has been seen as a limitation by some researchers (Becker, 1974). However, the lack of defined variables has allowed this research the flexibility to tailor HBCPM in a manner that suits the study design best. Both models, the HBM and the TTM have been mostly employed in research designs that use surveys and interviews. This study however does not involve any direct interaction with its participants and relies solely on the exchanges that take place between them on an online forum to obtain information. Hence, it was essential to design a framework that would suit this context. The research has used the abstraction associated with HBM and TTM to design a framework that can be applied appropriately to this study. The same purpose could probably not be achieved with a model with clearly set and defined variables.

The above section explains how HBCPM overcomes the limitations of the Health Belief Model and the Trans-theoretical Model. It also presents the merits of the integrative framework.

Summary

The chapter has discussed four prominent frameworks in the field of health behaviour from the perspective of their suitability to the research context. It identifies the gaps in existing frameworks and proposes a Health Belief Change Process Model (HBCPM). The model defines three constructs, each designed to serve a specific research purpose. The advantages of the model over other prominent frameworks have been presented.

Having discussed the theoretical framework for the research in this chapter, the next chapter shall focus on the methodology employed for the research.

Chapter 4: Methodology

This chapter presents the research methods employed and outlines its suitability for the research. While the interest of the study lies with a qualitative understanding of binge drinking behaviour, this research employs both quantitative and qualitative approaches to examining alcohol threads on an online forum Partyvibe.com. The research design including sampling, method of data collection and analysis is detailed. The research process employs content analysis for data collection, coding and analysis. The concluding section of the chapter discusses the validity and reliability of the research method employed. The research proposes to provide insights on the following areas of the research focus:

RQ1. Attitude of the online community/forum participants towards binge drinking

RQ2. Role of the online community/forum in changing the binge drinking behaviour of its participants:

2.1 Can the forum influence its participants to change their binge drinking behaviour?

2.2 What is the extent of influence extended by the forum on its participants, in terms of changing their behaviour?

4.1 Content Analysis

Content analysis, traditionally deals with "the objective, systematic and quantitative description of the manifest content of communication" (Berelson, 1952, p. 18). However, this definition has evolved with time, and now it also includes analyses of latent content (Graneheim & Lundman, 2004). Weber (1990) supports the use of content analysis for interpretation of latent content. He suggests that content analysis facilitates insight into the attitudes and themes that pervade a given message (as cited in Stemler, 2001). The research focus is to understand the attitude of an online community towards binge drinking through the textual posts made by its participants. Content analysis enables such examination and is thus a well suited method for the research context. The findings of Preece and Maloney-Krichmar (2005) suggest that many researchers prefer content analysis for analysing forum discussions over other methods

from the fields of sociology and social psychology. Pfeil and Zaphiris (2010) also affirm that content analysis is frequently used to examine exchanges on online communities.

Apart from interpreting attitudes and themes in textual messages, content analysis has certain characteristic features that make it the best method for this research. For example, Hsieh and Shannon (2005) state that content analysis is an unobtrusive method. According to Webb, Campbell, Schwartz, and Sechrest (1966), for the social sciences; the subjects' awareness of being observed; researcher interaction effects on the subjects; and the subjects' preferences for making specific responses, are a few of the several ways in which errors are introduced in data analysis (as cited in Krippendorff, 2004). Krippendorff (2004) emphasises that controlled experiments, interviews, focus groups, surveys and projective tests are especially vulnerable to such errors. However, being an unobtrusive technique, content analysis is immune to such biases altogether (Krippendorff, 2004). In the context of this research, employing an unobtrusive method allows the researcher to be invisible to the community members. Thus, the online community members have the freedom to share their views and feelings without feeling inhibited by the researcher's presence (Pfeil & Zaphiris, 2010; Suler, 2004). Suler (2004) also believes that such an environment promotes a higher degree of self-disclosure from its participants. Thus, using content analysis the researcher may be able to gather data that is richer than would be possible through other, obtrusive methods.

Content analysis is also well suited to capture the asynchronous nature of communication of online forums (Pfeil & Zaphiris, 2010; Suler, 2004). On an online forum a member may make a post, the response to which may be made in the interval of a few minutes, hours, days or months. Since content analysis is not limited by time (Collis & Hussey, 2003), it allows the researcher the flexibility to analyse a thread of backdated posts that constitute a discussion rather than a few real time posts that may not convey significant meaning. Methods such as interviews and observations generally occur in real time and do not allow for such flexibility. According to Suler (2004), in an asynchronous exchange, since the responses are not real time, people move quickly towards deeper expressions of their thoughts and feelings that obviate social norms.

Thus by capturing asynchronous communication on the forum, content analysis enables an understanding of participants' attitudes that is not pressured into conforming to social norms.

In addition to the above, Krippendorff (2004) brings out two key characteristics of content analysis, which enhance its suitability to serve the research purpose. He first asserts that the unstructured nature of content analysis maintains the integrity of the conceptions of the data's sources. He further adds that content analysis is a context-sensitive method that "allows the researcher to process as data texts that are significant, meaningful, informative, and even representational to others" (p. 41). An unstructured and context-sensitive method as content analysis is well suited for the research context, since it preserves the integrity of the participant's thoughts and feelings i.e. content analysis does not treat the participant's individual perceptions towards different aspects of binge drinking as disembodied units, but acknowledges the participant's psycho-social background in which these feelings are rooted. This method of data capture and analysis enables deeper insights into a participant's attitude toward binge drinking.
Thus, given the features of content analysis described above and its consequent suitability for the research context, it has been chosen as the method for achieving the research purpose.

According to Elo and Kyngas (2008), content analysis can be employed using a deductive or an inductive approach. Lauri and Kyngas (2005) state that an inductive approach is typically used when prevailing theory or research literature on a certain phenomenon is limited (as cited in Elo & Kyngas, 2008). However, in cases where knowledge on the phenomenon exists, but is insufficient or would benefit from further description (Hsieh & Shannon, 2005), the deductive approach is employed (Potter & Levine-Donnerstein, 1999). It has been seen in the literature review presented in an earlier chapter, that there are several prominent theories in the field of health behaviour. Thus, the deductive approach is suited to the research purpose. Hsieh and Shannon (2005), also call the deductive approach the directed approach since it uses existing theories to guide the research process (Potter & Levine-Donnerstein, 1999).

The key feature of the directed approach is its ability to support (Catanzaro, 1988) or extend existing theory (Hsieh & Shannon, 2005). The directed approach employed in this research also extends existing theory by integrating two health behaviour frameworks to overcome their individual limitations. The theoretical framework (HBCPM) designed to this purpose has been elucidated in the previous chapter. Potter and Levine-Donnerstein (1999) explain that deductive content analysis uses existing theories for defining coding schemes; likewise, this research draws constructs from existing health behaviour models for the development of coding categories and rules. The research also uses these models to identify the relationships between codes and to operationalize the structure of the analysis. Elo and Kyngas (2008) affirm that the process of basing the research coding and analysis on existing theory is a characteristic of the deductive approach. Research areas where the deductive approach to content analysis has been used include an investigation of patients' readiness for dietary change (Kasila, Poskiparta, Karhila, & Kettunen, 2003) and to understand psychiatric patients' participation in their care (Latvala, Janhonen, & Moring, 2000).

While the theoretical support employed in the deductive approach described above acts as strong backbone for the research process, it also suffers from certain inherent limitations. Hsieh and Shannon (2005) claim that since this approach is grounded in existing theory, the researcher may approach the data with a strong bias. They further argue that there is a greater likelihood of finding evidence that is in agreement with the theory than that found to be in contradiction. They also believe that an excessive reliance on the theory may cause the researcher to overlook important contextual aspects of the phenomenon.

Thus the above section gives reasons for the choice of content analysis as the research method and its limitations. The following sections outline the research design.

4.2 Sampling

This section details the next step in the research process; sampling. The section is split into two focus areas; sample selection and size followed by message units.

4.2.1 Sample Selection and Size

Neuendorf (2002) defines sampling as the process of choosing units for examination from the larger population. She further adds that the methods used for sampling can be classified into two basic distinct categories; probability sampling and non-probability sampling. Fink and Gantz (1996) recommend the use of probability sampling in the social sciences, however being constrained by time, this research employs non-probability sampling methods. This research analyses posts made on a thread on an online forum. Hence the sampling design involves three levels; identifying an online forum sample, a thread sample and a post sample. The sampling process employed for each of these levels is discussed below.

4.2.1.1 First Level Sampling

The first level of sampling involves identification of an online forum sample. The research employs purposive sampling for the same. According to Bernard (2002, as cited in Tongco, 2007), purposive sampling requires the researcher to deliberately choose a sample that can provide the information required to answer the research question (Lewis & Sheppard, 2006, as cited in Tongco, 2007). This research seeks information to understand the influence of a forum discussion on participants who do not intend to change their binge drinking habits. Consequently, the sampling process here specifically identifies forums whose members are not inclined to alter their drinking habits. The Google search engine has been used to search for such forums online. In the initial search, keywords such as “alcohol” and “binge drinking” were used. However, the search results suggested forums that are essentially support groups dedicated to help people who are experiencing difficulties in changing their drinking habits. The members on these forums are already seeking change, whereas the purpose of this research is to study the influence of the forum discussion on people who are not looking to change their drinking habits. Hence these search results were ignored. In the revised search, keywords such as “message boards” and “forums” were used. Forums

that appeared in the search result were checked to identify the topics discussed (threads). Starting from the topmost forum that appeared in the search result, each forum was checked until one with threads on binge drinking was identified; www.partyvibe.com.

This forum describes itself; “Party Vibe is about the stuff of our lives, the love and sex we feel and enjoy, the music that moves us and the drugs that have touched us. It was originally launched in December 1997” (Partyvibe.com). This forum was included in the sample for two primary reasons. Firstly, this forum is not a self-help group, thus the probability of its participants not being biased against binge drinking is higher than if it were a self-help group. Secondly, the forum discusses various other topics, hence it follows that its participants have varying interests. Consequently, there is a greater likelihood of their having different attitudes towards binge drinking thereby allowing for insight into different perceptions people have on binge drinking. Partyvibe.com has 31 threads on the topic ‘alcohol’. The number of posts on each of these threads range from 43 to 7, with an exception of one thread that has about 1900 posts. The aggregate of posts on alcohol threads is 2,535. Since this forum has a large number of threads and posts on the topic of alcohol and binge drinking, other forums that appeared in the search results were not considered.

4.2.1.2 Second Level Sampling

Given the time constraints faced by the research it was not feasible to study all the alcohol related threads on Partyvibe.com. Collis & Hussey (2003) assert that it is important for the researcher to decide the basis of selecting a sample if there is a large volume of written data existing. As seen in the above section, purposive sampling has been used to identify a forum sample. Likewise, purposive sampling is employed to select a thread sample. The following criteria have been used to identify a thread sample:

i. Thread topic is not biased against binge drinking or its effects:

   A thread topic biased for/against binge drinking may dissuade certain members from participating in the discussion and revealing their views. There is also a probability of only one-sided opinions being expressed in

such threads. Consequently, the data captured and analysed may be erroneous and may jeopardize the validity of the research. Hence such threads are not included in the sample.

ii. The thread topic limits the scope of opinions expressed :
In the process of identifying a sample it was found that a few thread topics tend to limit the scope of response posts. For example, consider the thread topic “what are you drinking right now?” This thread has 1900 response posts; however they are limited to one word responses, naming the drink being consumed. Such threads do not provide insights relevant to the research and thus they are not included in the sample. The threads incorporated in the sample are conversational in nature and constitute a discussion, where participants respond to each other’s opinions.

iii. Number of posts on the thread should not be less than 10:
This criterion ensures that each thread included in the sample was a discussion, with posts from many members thereby allowing the researcher to study different perceptions and attitudes on binge drinking.

The purpose of the above criteria is to include varying opinions or views on binge drinking. Proportionate representation of the population is not a primary concern of the sampling logic employed here. Trochim (2006) also terms this method as heterogeneity sampling. The above criteria have been applied to all threads on the topic of alcohol on Partyvibe.com. Of the total population of 31 threads, only ten threads were found to meet the criteria set above. Thus only these ten identified threads constituted the sample for further processing in the research.

4.2.1.3 Third Level Sampling

As seen in the above section, a sample of ten threads has been identified for the research. There are a total of 321 posts on the selected thread sample. Since the research is constrained by time, it was decided to employ a quota sampling technique to obtain a feasible sample size for posts. Trochim (2006) refers to this method as non-proportional quota sampling. Ten consecutive posts from each thread were chosen for analysis.

The key aspects of the sampling process used for identifying a forum sample, thread sample and a post sample have been summarized in Table 4.1:

Table 4.1

Sample Information

Sampling Level	Sample Parameter	Sampling Method	Sample Size
Level 1	Forum sample	Purposive sampling	1 Forum
Level 2	Thread sample	Purposive sampling	10 Threads
Level 3	Post sample	Quota sampling	100 Posts

While the above section presents the sampling design, the following section details the units employed in the research.

4.2.2 Message Units

Neuendorf (2002) defines a unit as a discernible message on which variables for content analysis are measured. This study uses the posts to a forum's thread as message units from which variables for content analysis are identified and systematised. Since a post characterises a complete piece of information that is meant to be self-explanatory and does usually not require further elaboration, it also serves as the sampling unit (Hofstetter, 1981, as cited in Gordon & Miller, 2005).

In addition to the sampling unit, Krippendorf (2004) suggests two further units used for content analysis; recording unit and context unit. Riffe, Lacy and Fico (2005) describe recording units as specific pieces of content that are systematically categorised in the coding process. This research examines each post in order to code and to analyse content by means of methodically identified variables. The sampling units of the post that convey information with respect to emerging variables are individually recorded, and hence they represent distinct recording units (Popping, 2000). A sampling unit may have multiple recording units. Weber (1990) suggests that recording units could be noted in utterances, words, sentences or the whole text of the post. According to Krippendorf (2004), recording unit and sampling unit are often different from each other. This holds true when only a certain part of the post holds data relevant to a

variable and consequently, it acts as an individual recording unit. In this case the recording unit becomes a subset of the sampling unit (Stewart, Shamdasani & Rook, 2007). However in cases where the whole post is representative of a variable, the sampling unit and the recording unit are congruent. Gordon and Miller (2005) confirm this, stating that when thematic questions are asked of the content, as in the case of this research, the whole sampling unit may also be used as the recording unit. Since this study analyses the data captured by the recording units, they also serve as the unit of analysis.

The next unit type suggested by Krippendorf (2004), known as context units, delineate the body of text to be considered in interpreting recording units (Popping, 2000). In some cases the context unit may be the same as the recording unit, particularly when the recording unit constitutes multiple words or phrases of a post. However when the recording unit is comprised of a few words, the context unit tends to be larger and it maybe a subset of or equal to the sampling unit (post). In certain cases, the context set by a post in which the recording unit occurs, may be insufficient for its interpretation. In such scenarios, the context unit may include multiple posts in order to set relevant context for the analysis of the recording unit.

Riffe et al. (2005) find that a majority of studies employing content analysis tend to use more than one of the three units defined above. In this study, the posts to the forum's threads have been used as sampling units. The segments of each post that signify information on variables represent the recording units. The recording units also function as the unit of analysis for the study. The context unit used may be equivalent to a recording unit or a post, or may also include multiple posts. Thus, this study employs all three unit types laid out by Krippendorf (2004) for use in content analysis. This section outlines the units employed in the study; the following section is a brief on the coding schema used for data collection and analysis.

4.3 Coding

Hsieh & Shannon (2005) define coding as the process of organising the units of analysis into specific content categories. As described earlier, this research employs the

deductive approach to content analysis which uses existing theory to identify coding categories (Potter & Levine-Donnerstein, 1999). Existing health behaviour models have been used to guide the development of the coding scheme used in this research.

The theoretical framework designed for this research, Health Belief Change Process Model (HBCPM) lays out two primary constructs; Attitude Qualification (AQ) and Changing Behaviour (CB). The previous chapter explains the variables in each of these constructs. AQ measures attitude through the variables of perceived susceptibility, perceived severity, perceived barriers, perceived benefits and self-efficacy. AQ grades participants' perceptions of each of the above variable as low/absent or high (except benefits and barriers; only the presence of these variables is examined). Each grade of an AQ variable is considered as a coding category. Thus the AQ construct produces eight coding categories; (i) low/absent perceived vulnerability, (ii) low/absent perceived severity, (iii) low/absent self-efficacy, (iv) high perceived vulnerability, (v) high perceived severity, (vi) high self-efficacy, (vii) perceived benefits and (viii) perceived barriers. The second construct of HBCPM, CB, lays out twelve change processes. Each of these change processes is treated as an individual coding category. Thus the CB construct produces twelve coding categories (*Consciousness Raising, Dramatic Relief, Environmental Re-evaluation, Self-re-evaluation, Self-Liberation, Social Liberation, Reinforcement Management, Helping Relationships, Counterconditioning, Stimulus Control*, and *Modelling/ Verbal Persuasion*).

An aggregate of twenty coding categories have been used for the study. The operational definitions for each coding category are derived from the theory on HBCPM, and respectively from the Health Belief Model (HBM) and the Trans-theoretical Model (TTM). The coding schedule has been used to identify the presence of these twenty codes in each post (sampling unit). The codes are identified through cognitive (e.g., ideologies, rules, self-concepts) and emotional aspects (e.g., sympathy in health care, road rage) that are either manifest or latent in the post content. The coding process is organized in a Microsoft Excel spread sheet. Each utterance in a post that indicates the presence of a code is recorded separately and represents a recording unit. All recording units are organized vertically and the codes are arranged horizontally. A binary '1' is placed at the intersection of each recording unit and the respective code represented by the recording unit. Table 4.2 illustrates the coding process:

Table 4.2:

Coding Sheet Structure

Sampling Unit/ Context Unit	Recording Unit	Codes																		
		LPV	LPS	BARRIERS	LSE	HPV	HPS	HSE	BENEFITS	CR	DR	ER	SRE	SEL	RM	HR	CC	SC	MOD	SOL	VP
i have given up everything at the moment....and have a fond liking for amphetamine.....my poor body wont know whether its coming or going...first it was tranqed up to the eyeballs.....and now its whizzed up to the hilt.....ahhh well im sure i'll	i have given up																		1		
	.my poor body wont know whether its coming or going...first it was tranqed up to the eyeballs.....and now its whizzed up to the hilt.										1										
i would love to stop drinking but i no i dont have the will pawer. amphetamines are good to. i dont take them as much as i drink. idely id like to cut back all that i take and not always be looking to get wastid hawever much fun it mite be. but good luck with ceping up the not drinking	i dont have the will pawer			1	1																
	not always be looking to get wastid					1	1						1								
	good luck with ceping up the not drinking															1					

LPV	Low/absent perceived vulnerability	LPS	Low/absent perceived severity	LSE	Low/absent self-efficacy	HPV	High perceived vulnerability	HPS	High perceived severity
Barriers	Perceived barriers	HSE	High self-efficacy	Benefits	Perceived benefits	CR	Consciousness raising	DR	Dramatic relief
ER	Environmental re-evaluation	SRE	Self-re-evaluation	SEL	Self-liberation	SOL	Social liberation	RM	Reinforcement management
HR	Helping relationships	CC	Counter-conditioning	SC	Stimulus control	MOD	Modelling	VP	Verbal persuasion

Weare & Lin (2000) consider coding as the less intellectually stimulating aspect of content analysis, however, I would not necessarily agree with this. In this research, the coding of posts in most cases requires a deeper understanding of the latent meaning of the message. Also, since the overall approach of this study is qualitative, insightful and sensible coding is a key challenge in order to identify content which is useful for a later qualitative discussion of the data. Thus each recording unit requires considerable contemplation before it can be identified as indicative of a given AQ or CB variable. For each post, understanding the context in which it is set and, accordingly, identifying the participant's attitude through language and tone used represents a challenging task. Identifying cognitive aspects of the message is relatively easier, since they tend to be manifest; however recognizing the emotions that underlie the post content is much more difficult. Thus the coding process in this research involves much intellectual labour and engagement.

4.4 Data Collection Methods

Im and Chee (2006), find that many studies have supported the feasibility of using electronic data collection methods. In this study, different data has been collected at three levels of sampling and in each stage only electronic data has been used.

In the first level of sampling, Google search has been used to identify forums and message boards. In the first search cycle keywords such as 'alcohol' and 'binge drinking' have been used. Since the search results were not relevant to the study, another search was conducted with keywords such as 'message boards' and 'forums'. However, the search results suggested forums that are essentially support groups dedicated to help people who are experiencing difficulties in changing their drinking habits. The members on these forums are already seeking change, whereas the purpose of this research is to study the influence of the forum discussion on people who are not looking to change their drinking habits. After examining the topics discussed on several forums, the website Partyvibe.com was identified which had threads on alcohol along with other topics. This website was chosen since it is the first forum that appeared in the search results which was not an alcohol support group. Thus, on the basis of its page ranking on Google search results, it was inferred that people interested in talking about alcohol in general without the specific intent of changing their behaviour, would approach this forum. In addition, the website was chosen since it has threads on several

different categories as indicated in the literature review. Thus it was inferred that the website would have an audience with varying interests. Consequently, there was a greater likelihood of their having different attitudes towards binge drinking thereby allowing for insight into different perceptions people have of binge drinking.

The consecutive data collection has been from the forum's website (http://www.partyvibe.com/). The search functionality of this website has been used to identify threads relevant for the study. This in-site search was conducted using the keyword 'alcohol'. The sampling criteria described in the earlier section were employed to select the required sample of threads from the search results. For each selected thread, the number of replies, views and users has been captured.

Ten consecutive posts were recorded from each of the selected threads. The content of each post along with its meta data (user name, date, post #) was copied in its entirety into an excel spread sheet. Thus all data used for the study; starting from the identification of a forum to recording the posts for content analysis has been sourced from the internet.

4.5 Methods of Data Analysis

Mayring (2000) and Krippendorff (2004) posit that content analysis can be primarily applied employing a quantitative and/or a qualitative approach. According to, Pfeil and Zaphiris (2010), the fundamental difference in these two approaches is their focus, even though both apply the basic principles of content analysis. They state that quantitative content analysis aims at understanding a certain phenomenon through statistical analysis of data. Pfeil and Zaphiris (2010) suggest that qualitative content analysis concentrates on identifying the varying themes innate to the data, understanding their possible meanings, distribution and interaction with each other.

This study favours a qualitative approach for analysing data yet also relies on quantitative input. The primary reason for choosing the qualitative approach is that it allows insight into the various possible meanings (manifest and latent) of the posts. Krippendorff (2004) speaks in favour of quantitative content analysis stating that it reduces a considerable amount of textual data into numerical formats for statistical analysis. However Thomsen, Straubhaar, and Bolyard (1998) argue that the process of

reduction carries an inherent risk of losing the finer nuances associated with the text. They claim that the methods employed in quantitative content analysis do not bring out the different layers of meaning that the message may hold. They further add that such understanding of meaning is possible through qualitative content analysis that focuses on the message in its entirety.

Boyatzis (1998) describes the process of qualitative content analysis as one involving multiple steps, with the first being coding of the data set. As seen in an earlier section, this research uses the deductive approach to content analysis. Hence variables identified by the research framework (HBCPM) serve as codes or categories. Thus the coding process organizes the posts on the online forum into predetermined categories.

Boyatzis (1998) identifies the next step in the analysis process as identification of themes and interpretation of the identified patterns. In this stage, the research employs statistical analysis. While statistical analysis is primarily used in quantitative content analysis, it may be applied to some extent in the qualitative approach as well (Sandelowski, 2000). This study uses quantitative analysis for the purpose of summarising and presenting the findings in tables. Thus, in order to obtain an holistic understanding of the text, the research employs both quantitative and qualitative analysis. The research in its final step of qualitative analysis compares the identified patterns/ themes with findings presented by other research in the field to identify potential trends, similarities and differences (Boyatzis, 1998).

4.6 Trustworthiness of the research

Elo and Kyngas (2008) posit that the trustworthiness of a research is evaluated in terms of its validity and reliability. According to the authors, a good coding scheme plays a crucial role in determining the validity of a content analysis. Potter and Levine-Donnerstein (1999) assert that a valid coding scheme is faithful to theory and involves its key concepts.

As indicated earlier, this study derives its coding scheme from existing models in the field of health behaviour. The categories used in the coding scheme originate in the constructs of Attitude Qualification and Changing Behaviour laid out by the research framework (HBCPM). The coding rules or guidelines to organise data into these

categories are obtained from the research framework (HBCPM) as well as from existing models in the field of health behaviour; the Health Belief Model (HBM) and the Trans-theoretical Model (TTM). Since the entire coding scheme is rooted in well-established theory, it hopes to achieve both reliability and construct validity (Folger, Hewes, & Poole, 1984, as cited in Potter & Levine-Donnerstein, 1999; Potter & Levine-Donnerstein, 1999).

Apart from validity, the other important measure of the trustworthiness of a piece of research is its reliability. Neuendorf (2002, p. 112) defines reliability as "the extent to which a measuring procedure yields the same results on repeated trials". Daymon and Holloway (2011) believe that in a qualitative study, the personality and background of the researcher strongly influence the interpretation of the study findings. They further add that reliability is difficult to achieve even if care is taken to replicate the study in similar conditions. Hence, they suggest that qualitative researchers should focus on credibility as a measure of trustworthiness instead of reliability.

According to Graneheim & Lundman (2004), credibility of research findings is based on the ability of the categories to cover the data. This research uses purposive sampling to identify threads on the online forum that were most relevant to the research questions. The coding scheme used to code posts on these threads is based on the research framework designed specifically to answer the research questions. Consequently, when the posts are coded, they naturally fit into the twenty theoretically predetermined coding categories. All cognitive and emotive aspects conveyed by the posts are captured by the coding scheme. Whenever a recording unit presents multiple implications, it is coded into relevant categories, thereby ensuring no meaning is missed by the coding scheme. Thus the research findings can be considered credible, since they do cover the data. Daymon and Holloway (2011) posit that the credibility of the research also depends on how well the claims have been supported. The literature review and the study findings will be employed to make strong arguments for the conclusions made in this research.

Stacks (2002) and Hsieh and Shannon (2005) believe that the quality of the research can be further emphasised by clear and elaborate articulation of the steps adopted in the research process. The previous chapter presents in detail the research framework used for the study. The sampling design, coding scheme, data collection and analysis

procedures have been presented elaborately in this chapter in a manner to ensure coverage of all procedural steps.

Thus the above section presents measures taken to ensure trustworthiness of the research.

Summary

The chapter gives the reasons for the use of content analysis as the methodological approach. It explains the sampling design, coding techniques, methods of data collection and analysis. The coding scheme used in this research is grounded in the proposed research framework. The research uses electronic data collection methods and employs a qualitative approach to content analysis. The chapter also justifies the trustworthiness of the research on the basis of the deductive approach used for coding, and the sampling design employed.

The following chapter presents a quantitative analysis of the data collected employing the methodology detailed here.

Chapter 5: Quantitative Analysis

The research aims to understand the attitude of people towards binge drinking. With this objective, the research studies the threads on the subject of alcohol on the forum Partyvibe.com. The research also examines whether the interactions on these threads can influence its participants to change their binge drinking habits. The theoretical framework designed for the research was discussed in an earlier chapter (Chapter 3). The framework has been used to analyse the attitude of thread participants towards binge drinking and the possibility for behaviour change. This data analysis is split in two sections; the first section focuses on the participant's attitude towards binge drinking and the next section studies the ways in which the thread discussions may influence their participants' binge drinking behaviour.

5.1 Attitude towards binge drinking

The HBCPM framework defines the construct of Attitude Qualification (AQ) to measure the attitude of participants towards binge drinking using the variables of perceived susceptibility, perceived severity, perceived barriers, perceived benefits and self-efficacy. The posts made by participants are analysed to identify the presence of any of these variables. Table 5.1 represents the frequency of occurrence of AQ variables in the posts.

Table 5.1

Frequency of Attitude Qualification Variables

Variables	# Posts	% Posts
Severity	69	41
Vulnerability	65	39
Barriers	27	16
Benefits	4	2
Self-efficacy	2	1
	Total: 106	

Findings with respect to each of the above variables have been presented below in detail.

5.1.1 Severity

Of the AQ variables, severity was commonly reflected in posts (41%). As seen in Table 5.2, the percentage of posts expressing contrary views on the severity of the effects of drinking was almost equal.

Table 5.2

Frequency of the AQ Variable - Severity

AQ Variable - Severity	# Posts	% Posts
Expression of High severity	36	34
Expression of Low severity	33	31
	Total: 106	

Thirty four per cent of posts expressed varying opinions on high severity. For example, twenty per cent of the posts considered the effects of drinking alcohol to be severe. Eight per cent opined that binge drinking has severe effects while six per cent considered drinking to be harmful when it exceeds the individual's capacity or tolerance level.

Thirty one per cent of posts communicated their views on low severity. Here, twenty three per cent of post referred to the low severity of the effects of alcohol consumption in general while eight per cent emphasised that binge drinking was harmless.

5.1.2 Vulnerability

After severity, vulnerability is the next most common variable expressed in posts (39%). As observed in the case of severity, posts expressing contrary views on vulnerability were also found to be nearly the same in number.

Table 5.3

Frequency of the AQ Variable – Vulnerability

AQ Variable - Vulnerability	# Posts	% Posts
Expression of Low vulnerability	33	31
Expression of High vulnerability	32	30
	Total: 106	

Twenty seven per cent of the posts herein expressed low vulnerability to the effects of drinking alcohol. Four per cent explicitly conveyed low susceptibility to the effects of binge drinking or excessive alcohol consumption.

As opposed to low vulnerability, in expressing high vulnerability, posts consider different aspects of alcohol consumption. For example, twelve per cent of posts showed high vulnerability to excessive alcohol consumption. Other posts express high vulnerability to the effects of alcohol consumption in general (8%), or specifically in instances where drinking exceeds a certain amount (7%) or when binge drinking (3%).

5.1.3 Barriers

The dimension of barriers was observed in sixteen per cent of the utterances. The barriers identified in the posts broadly referred to obstacles presented by an individual or to those presented by society. Thus I have classified them as personal and environmental barriers respectively.

Table 5.4

Frequency of the AQ Variable – Barriers

AQ Variable - Barriers	# Posts	% Posts
Personal barriers	21	20
Environmental barriers	6	6
	Total: 106	

As seen in Table 5.4, personal barriers represent a large fraction of the overall barriers experienced in changing drinking habits. The prominently perceived hurdle in this

category was the inability to restrain from drinking. Experience of alcohol withdrawal effects was also commonly cited as a barrier in changing drinking habits. Other barriers in this category were identified as the experience of cravings, hesitation in seeking medical help, deliberate ignorance, weak personal resolve and binge drinking being too enjoyable an experience to be given up easily.

Among environmental barriers, a complacent attitude of the individual's social circle and society in general towards drinking was often expressed as being detrimental to modifying drinking behaviour. Ineffective government regulation around alcohol, lack of opportunities for alternate activities and binge drinking being a social norm were the other environmental barriers expressed in posts.

5.1.4 Benefits

Two per cent of the utterances expressed the benefits of giving up drinking and drinking in moderation. The benefits cited were related to personal health and social functioning.

Table 5.5

Frequency of the AQ Variable – Benefits

AQ Variable - Benefits	# Posts	% Posts
Health benefits	3	1.79
Social benefits	1	0.59
	Total: 106	

For example, forum members cited benefits from their own personal experience of giving up drinking. They express improvement in their physical, mental, emotional health along with financial savings. In expressing social benefits, a member cited research findings to indicate how moderate drinking enhances social exchange by removing personal inhibitions.

5.1.5 Self-Efficacy

Only limited references to self-efficacy were identified in the posts (1%).

Table 5.6

Frequency of the AQ Variable – Efficacy

AQ Variable - Efficacy	# Posts	% Posts
Low self-efficacy	2	1
High self-efficacy	0	0
	Total: 106	

These posts only expressed feelings of low self-efficacy. While one post referred to a lack of conviction in personal will power to change habits, the other pointed out the lack of ability of people in general to modify their drinking habits.

As seen from the quantitative data analysis, the variables of severity and vulnerability were most commonly discussed in the posts. A similar percentage of posts were found to express high and low grades of severity and vulnerability. In comparison to the percentage of posts expressing barriers in changing behaviour, those participants discussing the benefits of adopting new behaviour were relatively few. An even lower percentage of posts on feelings of self-efficacy were observed.

5.2 Influence of threads on changing binge drinking behaviour

The HBCPM defines the construct of Changing Behaviour (CB) to understand the ability of the forum Partyvibe.com to influence change in the binge drinking behaviour of its participants. The posts made by participants are analysed to identify the application of processes of change. It was observed that processes of change were applied in 43 per cent of the posts. Observations with regards to each process of change have been presented below.

Table 5.7

Frequency of Change Processes

Processes of Change	# Utterances	% Utterances
Self-re-evaluation	31	25%
Consciousness raising	25	24%
Social liberation	23	24%
Self-efficacy	21	21%
Environmental re-evaluation	19	17%
Self-liberation	18	11%
Dramatic relief	17	10%
Helping relationships	13	8%
Counter-conditioning	10	6%
Reinforcement management	2	1%
Stimulus control	2	1%

As seen in Table 5.7, of the processes of change, *Self-re-evaluation* was found to be the most commonly applied in the threads analysed (25%). All the utterances herein reflect application of the process to the participant themself.

After self-re-evaluation, *Consciousness Raising* (CR) was found to be the most frequently applied process of change on the analysed threads (24%). CR has been observed only in threads where participants have explicitly asked for opinions and guidance on specific binge drinking issues. The advice given in response is based on both personal experience and factual information.

Twenty-four per cent of the utterances reflected the use of *Social liberation* as a process of change. Thirteen per cent of the posts here revolve around ineffective government regulation on alcohol. Seven per cent of the utterances employing social liberation express that the complacent attitude of one's social circle and society in general towards alcohol consumption encourages excessive drinking. Other utterances on social liberation point out the lack of opportunities for alternate activities and an environment replete with stimuli for alcohol consumption (2%).

Twenty-one per cent of utterances employed processes that increase feelings of *Self-efficacy*. These utterances are in response to fellow members' posts that indicate difficulties in overcoming the challenges of changing alcohol behaviour. *Environmental re-evaluation* as a process of change was seen in 17 per cent of the posts. Eleven per cent of the posts discuss how people's drinking affects the social environment. These posts indicate that excessive alcohol consumption leads to several issues such as street violence, destruction of public property, domestic violence, and negative influence on children.

Self-liberation as a process of change has been observed in eleven per cent of the utterances. The utterances here reflect the member's belief and commitment towards changing their drinking habits. About ten per cent of the utterances employed *Dramatic relief* as a process of change. Through these utterances members express their feelings on alcohol, their personal drinking habits and how it affects their life.

Helping relationships was employed by members in a few utterances that sought advice and support and also in respective response utterances (8%). In posts that employ *Counterconditioning*, participants recommend different alternatives to alcohol as a method of overcoming problematic drinking (6%).

Reinforcement management has been employed as a process of change in few utterances (1%). Through these utterances, members not only encourage the efforts of their fellow members in changing their drinking habits but also their own. Like *Counterconditioning*, *Stimulus control* as a process of change has also been employed to suggest ways of modifying drinking behaviour (one per cent). Utterances here advise on avoiding situations that present opportunities for alcohol consumption.

The analysis of the threads shows the application of all the processes of change specified by the research model. The processes of *Self-re-evaluation*, *Consciousness Raising*, *Social Liberation* and *Self-efficacy* augmentation were employed in 80 per cent of the posts. Approximately equal percentages of utterances applied these processes with a maximum deviation of six per cent. *Reinforcement Management* and *Stimulus Control* were found to be the least employed in the utterances.

Summary

The purpose of this chapter was to present a brief overview of the quantitative content analysis of ten threads on the Patryvibe.com forum. The AQ variables of severity and vulnerability laid out by HBCPM were most commonly seen in the posts. It was also observed that a similar percentage of posts expressed high and low grades of severity and vulnerability. In comparison to the percentage of posts expressing barriers in changing behaviour, those participants discussing the benefits of adopting new behaviour were relatively few. All the change processes laid out by the CB construct of the HBCPM were applied in the threads analysed.

The next chapter focuses on a qualitative analysis of the data presented in this chapter.

Chapter 6: Qualitative Analysis and Discussion

The previous chapter presented a quantitative summary of the coded data. The current chapter focuses on a qualitative analysis of the posts. Posts from threads with varying discussion topics have been analysed to allow for a deeper understanding of the attitude of participants towards binge drinking. Twenty posts have been chosen for analysis such that, when supported by the quantitative analysis, they appear to facilitate insights in the research context. The purpose of the analysis is to understand the participants' attitude towards binge drinking, and their views on media messages on binge drinking. The analysis also examines their interactions with (and possible influences on) each other and their manner of reaction to the posts. In order to gain a comprehensive perspective on the afore-mentioned aspects, the following section considers the twenty posts in relation to one another. This approach not only allows an understanding of the context of the posts but also aids a smooth narrative of the text.

6.1 Analysis and Discussion of Posts

Post #1

By 'Poster A' Female (14-02-2008, 23:03)

> ok so since christmas...ihavent really drunk hardlt anything...hasnt been a conscious decision but i just havent wanted to.....hae changed my circle of friends and the people i spend most of my time with now dont really drink.....in fact havent had asingle drink since sparkplug came over before exodus as gave me a can of cider...anyhow ive lost weight....my skin is better and i feel loads better.....this is the longest ihavent drunk since i was 14 and its made me realise how much i used to drink.....anyone else managed to give up alcohol and noticed the benefitgs (apart from financial)....ive even been to the pub and had orange juice....
>
> anyone agree that alcohol is the devil??

The participant, Poster A, uses the phrase "just havent wanted to" to possibly emphasise the fact that she stopped drinking because she did not feel like it anymore. While the language she uses seems causal, her tone appears decisive. It may be inferred that she is trying to convey to the other participants that she does what she feels like doing. Her statement also gives the impression that her decision was free from external influences and solely based on her own feelings. However, based on the other things she says in her post, it appears that her decision was driven more by reason than feelings alone. For example, in the first few words of her post, even before she speaks of her drinking, she

mentions “since Christmas…”. By deliberately inserting space after these words, it appears that she wants the reader to take due notice that she has not been drinking since Christmas. It would have been more plausible to believe that her decision to not drink was ‘feeling driven’, if it was at some other time during the year. The end of the year, i.e. the time around Christmas and New Year, is a period where people tend to drink more on account of the festive spirit. At such a time, deciding to stop drinking because one does not feel like it appears unlikely. Further, she also states that she chose a circle of friends in which no one drinks. It appears that she decided to stop drinking and in order to be able to stick to it; she changed her social circle as well. These decisions appear to be conscious decisions and not ones that are only driven by feelings and emotions. However, it seems that she does not want the thread participants to know that there was a thought process involved in her decision. She rather has them believe that her decision was more feeling based.

The feelings or emotions that she experienced while drinking may have dominated her thought process. She may consider drinking as a process that functions more on a ‘feeling’ plane than on a ‘thinking’ plane. This rationale is supported by the NHS (2010) who affirms that binge drinking makes one emotional. It has been seen in her post that she continued to binge drink as long as it made her feel good. However, when she no longer felt good about drinking, she stopped. Hence, it may be said, that she prioritised her feelings of enjoyment when she drank. Thus, according to the Theory of Reasoned Action, her belief that drinking alcohol will be an enjoyable experience may have influenced her attitude towards binge drinking behaviour (Ajzen & Madden, 1986). The finding corroborates the research by Woody, Urschel and Alterman (1992), who state that people may drink alcohol to experience euphoria or enhance positive emotions.

By the language she uses in the post, she appears to feel good and excited about the fact that she has not been drinking for a while. It seems that by considering alcohol as the ‘devil’ she may be reassuring herself, that she made the right decision to stop binge drinking. She poses a question in her post “anyone else managed to give up alcohol”’. By using the verb ‘manage’ here, it appears that she considers alcohol abstinence a

difficult task, which not everyone can accomplish. The use of words ‘in fact havent’, ‘this is the longest ihavent drunk’ suggest that she considers it a personal accomplishment to have successfully refrained from alcohol for this period. According to the HBCPM, she employs the change process of *Modelling* by which her successful ability to abstain from alcohol boosts her self-efficacy (Bandura, 1977). Bandura (1977) also suggests that increased feelings of self-efficacy lead to an increased confidence in personal ability to repeat the behavioural action in the future. Thus, it can be see that she also successfully employs *Counterconditioning* in a pub where she substitutes her problem drinking by a healthy substitute i.e. orange juice (Prochaska, DiClemente, & Norcross, 1992).

She remarks that her abstinence has given her an understanding of the extent of her drinking. Consequently it may be implied here that while she was drinking, she did not realise the amount of alcohol she was consuming. As indicated earlier, it may be possible that while drinking, she focused more on her feelings and hence only limited cognitive processing may have been involved. This reasoning is supported by the NHS (2010) which states that binge drinking reduces attention span, slows down reaction time, and makes one easily confused. Accordingly, the cognitive awareness required to keep track of how much alcohol she was consuming may have been side lined. Consequently, it may be said that she did not have complete awareness of her alcohol intake and she may have consumed more than she intended to. Thus it is possible that she did not binge drink intentionally.

It may be inferred from her post that she did not rationally consider her behaviour during her drinking days. Thus, according to the Attitude Qualification (AQ) construct of HBCPM, it may be said that she did not evaluate the severity of the consequences of binge drinking and her own vulnerability to them. Thus, she did not consider changing her habits. However, now that she analyses her drinking behaviour using the process of *Self-re-evaluation*, she realizes her high vulnerability to the severe effects of alcohol (Prochaska, DiClemente, & Norcross, 1992). Thus, it may be that she refers to alcohol as the ‘devil’. Consequently, she applies the change processes specified by the Changing Behaviour (CB) construct of HBCPM to modify her drinking habits.

According to the Extent of Influence (EOI) construct, the change processes that she applies are in accordance with her attitude. Brug and Kremers (2005) findings suggest that applying change processes in accordance with attitude leads to a high probability of short term behavioural changes. It can be seen from the post that she could well control her drinking for two weeks until her abstinence broke when 'sparkplug' (another participant) offered her a can of cider. She uses the verb 'gave' to indicate that he offered her some cider. Her choice of verb may suggest that the cider was offered to her in a way that she felt obliged to accept. Thus, even though she did not intend to drink, her intention did not translate into behaviour. According to Azjen and Madden (1986), intended action maybe hindered by unanticipated factors. A few possible reasons for the same may be considered; she could not resist the temptation of drinking or she did not tell him that she has stopped drinking since she was not prepared to face his reaction or she possibly refused the drink, but had to oblige on his insistence. According to the Theory of Reasoned Action explained in the literature review, it seems that subjective norms may have influenced her to accept the drink from him. She may have believed that 'sparkplug' would not approve of her changed drinking habits and consequently she felt compelled to drink (Ajzen & Madden, 1986). Janz and Becker (1984) suggest that drinking for social approval can act as a barrier in the path of behaviour change. Hence it seems that she applied *Stimulus Control* by changing her social circle so that she no longer feels obliged to drink for 'social approval' and simultaneously avoid the stimuli to drink (Prochaska, DiClemente, & Norcross, 1992). It seems that by making this change, she is successfully able to continue her abstinence as she indicates in a later post that she has been able to avoid drinking for seven weeks.

She also appears eager to share the benefits that she has experienced; the word "anyhow ive.." shows a keenness to convey her experience. She asks the thread participants if they have "noticed the benefitgs (apart from financial)". She seems to emphasise the benefits of giving up binge drinking by employing the verb 'notice' and the adjective non-'financial'. It may be implied that in her opinion, the participants may not be aware of the positive side of giving up drinking.

Post #2 is made in response to Poster A's post:

Post #2

By 'Poster B' Male (15-02-2008)

anyhowive lost weight....and i feel loads better

could be the mass amounts of amphetamines uve been taking ;)
i do like my messy nights down town, but its right oover a certain amount.... its shit
like last weekend, i just lost the plot and lost everyone
but i do like a fair few drinks in an eve
its just keeping that level

Based on the tone Poster B adopts in his first statement "could be..amphetaminesuve been taking ;)", he may be making an attempt to subtly create doubt in Poster A regarding her positive experience of quitting drinking. His statement may be attempting to implicitly convey that there are no benefits to quitting binge drinking and that she is confusing her positive experience of quitting binge drinking with that of drug consumption.

The participant here expresses contradicting attitudes. By saying "i do like my messy nights" and "but i do like a fair few drinks" he stresses the fact that he likes to binge drink. Nonetheless, he finds drinking beyond a certain level unpleasant. Prochaska and Velicer call this tendency "chronic contemplation" or "behavioural procrastination" (1997, p. 39). According to them, such people well realize the disadvantages of binge drinking, however they tend to stay in this phase for a long time due to their ambivalent feelings towards the behaviour. The incongruence in his attitude and behaviour towards binge drinking may also be accounted by his low health motivation or willingness to modify behaviour (Strecher & Rosenstock, 1997). The participant's behaviour confirms Johnston and White's (2003) finding that the understanding of health risks associated with binge drinking does not necessarily lead to an actual decrease in the occurrence of this behaviour (Johnston & White, 2003).

The participant uses 'just keeping that level' to indicate the desired level of consumption. However, he does not indicate the measure of this 'level'. He appears to be wishful about drinking to this 'level' but it seems that he himself may not be certain what that level is. Since he has set no upper limit for intake he may let his body set the limit for his drinking. As can be seen in his post, it seems that he drank till he could not

drink anymore. His drinking style is captured in a definition of binge drinking indicated in the literature review; drinking with the intent to get drunk and drinking until the drinker is no longer in control of him or herself (MCM research, 2004, as cited in Cagney, 2006). It may be said that since he has no defined limit for alcohol consumption, he receives no conscious notification from his brain that he has reached the intake limit and must now consider stopping. As a consequence he may end up binge drinking. It may also be noted that while the participant refers to 'just keeping that level' he does not mention the safe drinking limit specified by the standard health bodies. Consequently, there seem to be two possibilities; either he may not be aware of the safe drinking guidelines or he has no regard for them.

The following post is another response made to Poster A's post (#1):

Post #3

By 'Poster C' Male (14-02-2008, 23:32)


I cant live without lager i need my 30 pints a weekend to get through the week. Erm 30 pints thinking about it its a fuck of a lot  It could be more if I count the brandy n cokes as well 

The above participant, Poster C, uses a series of 'crazy' emoticons in responding to Poster A. It is not clear from the post, to what the emoticons are directed. He may consider her quitting alcohol crazy, or alcohol being a devil crazy. In either case, he does not appear to have a positive attitude towards her decision to give up drinking. Nonetheless, it seems from his phrase "Erm 30 pints thinking about it its a fuck of a lot'' that Poster A may have stimulated him to consider his own drinking habits. His saying 'It could be more ' suggests that he further dwells on his drinking habits. In assessing his drinking habits he appears to employ the change process of *Self-re-evaluation* (Prochaska, DiClemente, & Norcross, 1992).

Poster C seems to exaggerate his dependence on alcohol by stating that "I cant live without lager i need.." Here it is not clear, if he is indeed pathologically dependent on alcohol or if it is a psychological dependence. He states that he needs "30 pints a weekend to get through the week". However, when factually considered, the feeling of

being high does not last for more than a few hours of being drunk. Thus, it is not possible, that he feels high throughout the week by drinking 30 pints of lager on the weekend. He seems to believe that without consuming this set amount, he cannot go about his activities of the week. From his post it appears that he is repeatedly driven to drink certain amount of alcohol on weekends. Based on Payne, Govorun and Arbuckle (2008) findings, the participant may treat the weekend as a cue for drinking which may motivate him to acquire and consume alcohol (Wise, 1988). Such a tendency may be considered as characteristic of habitual behaviour. Janz and Becker (1984) suggest that behaviours with substantial habitual components tend to override the conventional psychosocial decision-making process. Thus it may be said that while drinking, he may not consider how much he drinks (as evidenced in his post) and consequently he may not realise that he is binge drinking.

Post #4

By 'Poster D' Male (28-02-2008, 23:11)

all over the news at the moment is that we are a nation of piss heads about to die from chronic organ failure at each others great expense
i see some silly sights in the high street on the weekend and that, but i don't think it is anything different to past generations
i even had a kidney and liver function test a couple months ago as i was in a lot of pain and i started to get the fear that perhaps my lifestyle was about to deny my children a father... a fear fuleed by the media (ag!) but came up fine (turned out to be a spine problem in my lower back, the treatment for which the NHS won't fund)
is alcohol the latest moral panic? they got the smokers,now they are coming for the drinkers
many towns and cities are blighted by theme-pub-booze-markets... is the good, old, british, community pub an imminently endangered species?
shouldi never drink 4 or 5 pints in a night, even if it means that i stop myself from going mad by doing so?
should we all become intensely-observed puritans with 'nothing to hide' (and nothing to laugh about)?
is this the price of prosperity?
too many questions... i need a beer!

From the language used in the first statement of the post, it appears that the participant is frustrated over a perceived media exaggeration of binge drinking. It seems that he finds the media attention irrelevant, since according to him, the binge drinking scene is the same as it was years ago. From the language and the tone he uses, it appears that he is very passionate about his drinking and consequently may find the media's attitude

disconcerting. He associates the term ‘moral panic’ with alcohol. It may be implied that if the participant’s medical diagnosis had been positive, he may not have been irritated by the media hype. He may well have considered it in good regard, since it stimulated him to get a diagnosis. In this case it is also possible that he may not have indicated binge drinking as a moral panic but a tangible risk. Since the diagnosis did not confirm his fears, he appears to have concluded that there are no negative effects of binge drinking and if any, he is not be vulnerable to them. Thus he appears to minimise the risk associated with binge drinking by calling it a moral panic. It can be seen that neither does the participant appear to consider himself vulnerable to the effects of binge drinking, nor does he regard them as severe. It also seems that he perceives himself to be addicted to alcohol and considers it necessary for maintaining his sanity. His perception may also act as a barrier and may prevent him from considering behaviour change (Janz & Becker, 1984). According to the HBCPM, since the participant may not perceive binge drinking as a health threat and only perceive barriers in giving it up, his changing his drinking behaviour is unlikely (Janz & Becker, 1984). It can also be seen in his post that he does not implicitly or explicitly show the inclination to change his drinking habits. Accordingly, his post does not show the application of any change processes. From his concluding remark “too many questions... i need a beer!” it appears that he prefers to binge drink rather than deal with issues that are biased against binge drinking. This inference is supported by Prochaska and Velicer (1997), who suggest that such people tend to avoid activities that may lead to increased cognition of their high risk behaviours.

By the language he uses in his post, it seems that the participant binge drinks to cope with the problems in his life. For example, his phrase ‘nothing to laugh about’ may also imply that for him, drinking may be a primary source of happiness. This finding is supported by Woody, Urschel and Alterman (1992), who state that people may drink to enhance the experience of positive emotions. It seems that he may not have many moments of laughter, other than those while binge drinking. That may be why he believes his sanity depends on it.

By the use of words ‘moral panic’, ‘puritans’ and ‘nothing to hide’ it appears that he himself considers drinking a taboo. From this phrase it may be considered, that the participant derives a certain thrill from activities that are apparently non-puritan, such as drinking and smoking. The participant’s use of the adjective ‘puritan’ may also indicate that he considers the media portrayal of binge drinking as immoral. He seems to impose his own perceptions while interpreting the media’s message. Thus, even if the media message does not carry connotations of morality, he may subconsciously impose them in his interpretation. Consequently he appears to be wary of the media communication and thus may not be receptive of it. Even though the media message may focus on the risk posed by binge drinking to personal and societal wellbeing, the participant may ignore this aspect and be antagonised by the perceived moral judgements passed by the media on his behaviour. Thus, it may happen that he may miss the entire point of the media communication. It is also possible that the participant may disregard media communication since he prefers to be seen as an individual who makes his own decisions about his drinking, free of outside influences. In a bid to exemplify this attitude, he may adopt binge drinking habits that are opposite to those recommended. This tendency can be seen in the following post:

Post #5

By ‘Poster E’ Male (28-02-2008, 23:21)

> Good man you enjoy your beer! The media love scaring us don't they. My thoughts on all this are FEA - Fuck Em All!

The participant seems to be indifferent towards the media. He appears to believe that the media’s occupation is to scare people and consequently he seems to completely disregard what the media says about binge drinking. In addition to being indifferent, a certain dissidence may also be found in his attitude. From his language it may be inferred that he may behave in opposition to what is recommended by the media, just to make a loud statement that he does not care about what the media says. His apparent opposition might also result from denial of his drinking behaviour and/or responsibility for his own behaviour. From his use of the word ‘scaring’ it appears that the participant, like Poster D, does not perceive himself as vulnerable to the severe effects of binge drinking. Thus, as suggested by HBCPM, the participant does not indicate any motivation to change his attitude towards binge drinking (Janz & Becker, 1984).

The above two posts by Posters D and E, may indicate a probable barrier that may limit the effectiveness of mass media campaigns against binge drinking. The participants' appear to firmly believe that the fear appeals employed by the media are exaggerated and irrelevant. It may be assumed that they may perceive media communication with this mind-set and consequently, their interpretation of the media messages may be unfavourably biased.

Post #6

By 'Poster F' Male (17-02-2008, 23:46)

> I wanna give up drinkin but often there aintnothin better to do than down the pub
> people say just dont drink but that never happens

From the participants' statement "nothin better to do than down the pub", two possibilities may be considered; either he lives in a place with no other socializing options or there are places other than the pub where drinking can possibly be avoided, however, he does not find them as appealing. Janz and Becker (1984) posit that the variables of severity, vulnerability, barriers and benefits may not be applicable in scenarios where environmental factors deter the change in behaviour**.** The participant indicates the intention to give up drinking however he also expresses helplessness about the lack of alternative social settings in his environment. The Theory of Planned Behaviour suggests that when intention does not correlate with behaviour, Perceived Behavioural Control can be expected to predict behaviour independently (Ajzen, 1991). From his post, it may be implied that in his perception, he has very limited control over his behaviour; consequently, his intention to not drink does not translate to behaviour. Thus, it seems that until he finds a place that is more promising than a pub, he might continue with his drinking habits and may not move ahead in the change cycle.

Post #7 and #8

By 'Poster H' Male (15-02-2008 and 16-02-2008)

> Since giving up the drink too I cant stand the stuff.
>
> it turns people into twats, makes your breath stink and it makes you do stupid things and it makes ugly people look attractive.
>
> Next door to me is a group of alchies and the anti social problems that come from there is impossible to live with.
>
> Yes: Alcohol is one of the most disgusting drugs we have... and its legal!!!

> Last time I drank so much I was at a free party in Sheffield in April/May time this year.
>
> I cant remember how much I had to drink - and I cant remember how many pills I took either but I know that when I mixed the booze with the wheelchair (Sheffield slang for Coke,Ket and MDMA) everything went a little weird....and wonky!!
>
> Booze is great at the right amount its when you overdoit.
>
> God I aint craved for a Special Brew in years you fuckers, making me talk about booze!!
>
> /me goes to the brew-shop for a 4 pak of Tennants!

The participant expresses in his posts that he has not been drinking for a while. His use of the word 'God' may imply that he undertook serious effort to give up drinking. While in the first post, the participant indicates that he cannot tolerate alcohol; in his second post he also states that he feels tempted to drink because of the conversation. He also employs the present tense 'me goes' in indicating that he is going to get alcohol. Thus it may be inferred that even though the participant has not been drinking for some time, his desire to drink may not be completely eliminated. It also appears that his resolve not to drink may not be very strong, since a virtual conversation seems to have stimulated his desire to an extent that he ignores his dislike for alcohol and decides to immediately buy alcohol. His craving for alcohol appears to overpower his cognition such that he is willing to disregard his previous efforts in abstaining. This inference is in accordance with Prochaska, DiClemente, and Norcross (1992) who suggest that in the process of changing behaviour, relapse is a high probability. They also indicate that there is no fixed period of time for maintenance of changed behaviour, it may extend from six months to an unspecified period past the first action. As can be seen in the case

of this participant, he uses the term “years” to express that considerable time has passed since he last drank; nonetheless he still experiences relapse.

Another point worth noting is that he holds the other participants on the thread responsible for making him talk about booze. In his perception, their posts stimulated his desire to drink alcohol. It seems that the posts on the thread may have negatively influenced Poster H by inciting him to drink. Nonetheless, it appears that Poster H accuses other thread participants in order to waive his own responsibility to control his drinking. Poster H gets involved in the thread discussion on his own. While posting on the thread, he would have probably known that the thread is titled “alcohol..” on a forum for “Alcohol & Drugs”. Consequently, it may be implied that he already knew that this conversation would revolve around alcohol. Also, based on the fact that his post is relevant to the thread, it may be inferred that he read the previous posts on the thread, thus he must have known while posting that the conversation is about alcohol. Nonetheless, he blames the thread participants for involving him in the discussion. It appears that rather than accepting responsibility for his own actions he holds the other participants responsible for his craving alcohol.

Since Poster H is not able to successfully maintain his drinking behaviour change, he may experience feelings of low self-efficacy (Bandura, 1977). Thus, he may seek solace in believing that the situation is out of his locus of control. Consequently, he may validate his urge to binge drink by holding external factors responsible i.e. the thread participants. The following post also illustrates the same tendency; the participant, Poster I seems to be having difficulty in changing his binge drinking habits, and consequently he blames the regulatory bodies for not prohibiting alcohol. In having such an attitude, I believe that the participants, Posters H and I may not be inclined to put in sufficient efforts to change their drinking behaviour.

Post #9

By 'Poster I' Male (22-05-2010)

> Is it bad to drink every night? not always to get drunk but jus to relax? Am I an alchoholic because I drink at the end of every day?
> I wish this stuff would be banned. seriously. I hate the fact I drink every day..

From the series of questions and their tone, it appears that the participant, Poster I, feels anxious about his daily drinking. He also seems to feel helpless about his inability to give up drinking on his own. It appears from his post that he is sure, if he does not soon amend his drinking behaviour he will become an alcoholic. Consequently, it appears that he hopes in desperation for aid from his environment. As a consequence, while the participant asks for advice in his post, from the tone used, it appears that more than advice, he is expecting empathy and consolation from the thread participants. By the tone that he adopts in saying 'not always to get drunk but jus to relax', it seems that he is placating himself by believing that since the purpose of his drinking is innocuous, it will not lead to ill effects. It also appears that he is hoping that other participants will also confirm his belief. The participant's post confirms Safko & Brake (2009) finding that online communities may be used for advice seeking.

Poster I also indicates that he drinks to relax. It may be inferred that he may be leading a stressful life and hence he needs some means of relaxation at the end of each day. It appears that the participant binge drinks to relieve the stress created by some other factor in his life. These inferences corroborate with Wills and Shiffman's (1985) findings that people may drink to alleviate their stress and anxieties. It may also be said here, that while the participant uses alcohol to relax and to relieve stress, it seems that his alcohol consumption itself has become a cause of stress. His use of 'not always to get drunk' may indicate that he tends to drink more often to get drunk rather than to relax.

From his post it may be implied that he reveals his emotional anxieties about his drinking behaviour. As indicated in the literature review, Kramish et al. (2001), suggest that some people find it easier to discuss sensitive issues such as personal health on an online forum (as cited in Im & Chee, 2006). Poster I may be considered very trusting of

the thread participants, since he makes himself very vulnerable by revealing how he truly feels. This inference is in accordance with Safko and Brake's (2009) suggestion that a forum is an ideal example of a trusted network. In addition, Suler (2004) suggests that when people are in an online environment they are more open to self-disclosure. Suler (2004) further adds that since the responses on the thread are not in real time, people move quickly towards deeper expressions of their thoughts and feelings that obviate social norms. As can be seen from the participant's post, he expresses his helplessness and repulsion towards the difference in his attitude and behaviour towards drinking which he may not reveal in his offline life.

According to the Attitude Qualification construct of HBCPM, a participant who feels vulnerable to the severe effects of binge drinking may successfully change their behaviour, if they can overcome the barriers faced in the process (Janz & Becker, 1984). The proposition is evidenced in the post; from the tone in which he asks the question "Am I an alcoholic..." it seems that he feels vulnerable to the effects of binge drinking. The anxiety that can be seen in his post may indicate that he also considers these effects severe. However, he also indicates that he binge drinks to relieve his stress. Thus even though he feels vulnerable to the severe effects of binge drinking, he may not be able to give it up since he faces a barrier; he feels concerned about losing a convenient means of relaxation (Janz & Becker, 1984). Thus even though he wants to change his behaviour, he is unable to overcome the barrier that he faces. Consequently he seems to be stuck in the initial stages of change, i.e. contemplation (Prochaska, DiClemente, & Norcross, 1992). Becker (1974) states that health related behaviour is difficult to account for when it is undertaken for non-health reasons. As indicated earlier, it seems from his post, that he drinks to relieve his stress or to get drunk. In either case, his drinking is not related to a health cause. Thus it is difficult to account for the disparity between his attitude and behaviour.

It can be implied from his post that he also employs the change process relevant to this stage i.e. *Consciousness Raising* to increase awareness about himself and his drinking problem (Prochaska, DiClemente, & Norcross, 1992). According to the Extent of Influence (EOI) construct of the HBCPM, this change process is best suited to the

participant's attitude. The following is a post that addresses the questions raised by Poster I.

Post #10

By 'Poster J' Male (22-05-2010)

> its YOUR fault you drink every day not alcohols. Take responsibility of your own actions. If you dont like what you're doing then stop. If your instinct to drink overcomes your awareness to stop then you have failed the gom jabbar

Poster J appears to adopt a confrontational tone in his post and it seems that he is almost offended by Poster I's attitude towards alcohol. It may be inferred that Poster J only superficially interprets Poster I's post. Instead of understanding Poster I's position, Poster J accuses him of being irresponsible. Poster J's advice may be considered to be too simplistic for Poster I's situation. He asks Poster I to stop drinking; however he does not regard the fact that it may not be so easy for Poster I to do so. He also appears to ignore the emotions expressed by Poster I. From his imperative statements it seems that he is almost giving an ultimatum to Poster I to change his drinking habits. Poster I already appears to be feeling miserable about his drinking, and Poster J's tone may only increase Poster I's guilt. The stance adopted by Poster J contradicts Rheingold's (2000) viewpoint that an online community nurtures friendship. It seems from the post that the language employed by Poster J may decrease Poster I's feelings of self-confidence and efficacy which may consequently affect his efforts to reduce drinking.

It appears from the language used in the post, that Poster J applies the *Self-liberation* (Prochaska, DiClemente, & Norcross, 1992) change process. While, it is positive that a change process has been applied, however it may only have limited relevance given Poster I's state of mind. Poster I may not be yet convinced that his drinking is problematic. In such a scenario, applying a change process that drives him to making a commitment to stop drinking may seem too intimidating. Even if he is influenced to make a commitment, he may not be able to uphold it, since he may still not believe that his drinking is harmful. Thus the above post reflects how Poster J's response may be insensitive to Poster I's needs. Post#11 illustrates a different approach to address Poster I's questions:

Post #11

By 'Poster K' Male (22-05-2010)

> If you feel its a problem then it is. I would suggest looking at the reasons why you drink rather than just shouting at yourself to stop, especially if you are unhappy. If its just a simple habit then perhaps the just stop advice is good, but its probably a lot more complex than that. Otherwise you probably wouldn't be asking for help, you would just have stopped.
>
> I would read about addiction, learn to understand it, learn how to make the changes, small steps, support from other people and so on. Good luck mate

The tone in the above post appears very different from that adopted by Poster J. Poster K seems to empathise with Poster I's problem and subtly points out the flaw in Poster J's advice. Poster K echoes the previous analysis of Poster I's post; he also appears to believe that his drinking is a symptom of some personal problem. He appears to be concerned about Poster I's situation and seems more interested in helping than reprimanding him.

Poster K seems to adopt an objective and pragmatic stance in his post but at the same time he also maintains a friendly approach in writing the post. He appears to consider the situation from Poster I's perspective and advises him accordingly. Unlike Poster J, he does not appear to impose himself on Poster I. His post appears to address Poster I's primary motivation; empathy and consolation. According to the HBCPM, Poster K applies the *Consciousness Raising* change process in his post. This change process is most relevant to Poster I's situation, since it would help him with an increased awareness about the causes, consequences, and cures for his drinking behaviour (Prochaska, DiClemente, & Norcross, 1992). This change process may encourage Poster I to understand his problem better and take the initial steps towards dealing with it. In addition to *Consciousness Raising*, Poster J also applies the change process of *Helping Relationships* to show care and support for Poster I for healthy behaviour change (Prochaska, DiClemente, & Norcross, 1992). His post evidences Safko and Brake's (2009) claim that the environment of an online community fosters support and empathy.

Post #12 reflects another approach to Poster I's issue:

Post #12

By 'Poster L' Male (22-05-2010)

It's best not to drink every day...

The biological mechanisms underpinning alcoholism are uncertain, however, risk factors include social environment, stress, mental health, genetic predisposition, age, ethnic group, and sex. Long-term alcohol abuse produces physiological changes in the brain such as tolerance and physical dependence. Such brain chemistry changes maintain the alcoholic's compulsive inability to stop drinking and result in alcohol withdrawal syndrome upon discontinuation of alcohol consumption. Alcohol damages almost every organ in the body, including the brain; because of the cumulative toxic effects of chronic alcohol abuse, the alcoholic risks suffering a range of medical and psychiatric disorders.

On a lighter note though... LOL!

Figure 6.1. Snapshot of Poster L's post. (Online image, available in public domain). Adapted from Partyvibe.com on February 18, 2013 from http://www.partyvibe.com/forums/alcohol/41531-i-cant-stop-drinking.html

According to HBCPM, Poster L employs the process of *Consciousness Raising* to provide scientific and factual information to Poster I about binge drinking (Prochaska, DiClemente, & Norcross, 1992). The information in his post appears to be directly sourced from a health website. It may be considered that since Poster I asked the question on a forum, he may have been keener on gaining insight into the personal opinion and experience of the forum participants. Although pertinent to the question, it may be said that the above post made by Poster L may not be what Poster I is looking for. It is possible that Poster I may decide to overlook this information. Even if he does consider it, the feeling of personal vulnerability to the risk of binge drinking that Poster

L intends to engender may not be as strong to those that could have been aroused if his post narrated a personal experience of the effects of binge drinking. One of the reasons why people use a forum is that it allows people to share their experiences, thoughts and opinions. The exchange tends to be more personal in nature. However when scientific information is added, it appears more a feature of impersonal communication (Mass media, general websites), and the communication may lose its desired impact.

Poster L also adds a picture depicting a consequence of binge drinking. However, he introduces the picture stating 'On a lighter note though... LOL!' On the basis of this statement, it may be said that Poster L adopts a double standard in his post. The text excerpt and the picture that he uses, both focus on the severity of binge drinking. However, by associating the expression 'LOL' with the picture he belittles its importance. It may be said that he does not consider the consequence represented by the picture serious. It appears that while Poster L in his post conveys what the health and regulatory bodies think of binge drinking, he may himself not be convinced of the ill effects of binge drinking. As it was seen earlier, in the case of Poster B in Post #2, Poster L also exhibits the tendency of "behavioural procrastination" (Prochaska & Velicer, 1997, p. 39).

The posts by Posters J and H indicate that participants respond to posts in either friendly or reproachful manner. They seem to interact with each other with a certain familiarity thereby making the discussion on the forum personal. Even though, there may be multiple participants and parallel discussions on a thread, their interaction has the quality of a one-on-one exchange. However, the post by Poster L reflects an impersonal stance where he does not express any of his emotions or experiences.

The posts made by Posters J, K and L in response to Poster I's issues seem to characterise the qualities of both mass media communication and face-to-face communication. The mass media, since it targets a wide audience, is impersonal, in one way it may be said that it maintains a distance from its audience; since its message does not address each of its audience member's needs. Face-to-face communication removes that distance and may be better tuned in to the life of the people interacting. It appears

from the above three posts made by Posters J, K and L, that the thread, like mass media creates a physiological distance between its participants. Nonetheless, it also maintains relevance to its participants, in the sense that the message exchanged is more in tune with the context of the participant's lives like personal face to face communication. These posts may also be considered illustrative of Tonnies's (1955) concept of 'communities of the mind' introduced in the literature review.

Post #13

By 'Poster C' Male (15-02-2008, 20:47)

> ifuckin love it :) lager lager lager.....

Post #14

By 'Poster B' Male (17-02-2008, 12:09)

> welll.... i did it again, thats it!!, i normally have a bottle before i go out, imgonna limit me self too half a bottle and 10 quid intowni hate getting too drunk!!!!

Post #15

By 'Poster C' Male (17-02-2008, 12:13)

> gona start limiting myself to £50 when i go out 

In the first post, Poster C clearly expresses how much he likes to drink. However, in his third post (#15) which is made right after Poster B (#14), he expresses his desire to take some action towards controlling his drinking. Given that he makes this post, just moments after the post by Poster B, it may be said that his decision to control his drinking is directly influenced by Poster B. Poster B also states in his post that he does not like to experience the effects of being excessively drunk. It may be possible that Poster C may also be experiencing similar effects; however he does not publicly acknowledge them on the thread. On reading the post made by Poster B, Poster C may have realized that drinking is pleasant and enjoyable only to a certain extent. Poster C may have also felt that Poster B has similar drinking experiences and thus he may feel a certain solidarity with him. This inference is in accordance with Pfeil and Zaphiris's (2010) suggestion that an online community acts as a meeting ground for people in similar circumstances. Consequently, Poster C may have decided to follow suit, by also

deciding to limit his drinking. This is also reflected in his adopting a similar measure to control drinking as chosen by Poster B. However, while Poster B sets himself a 10 pound limit to avoid getting "too drunk"; Poster C sets himself a 50 pound limit. It may be inferred that Poster B expects to 'feel' drunk after drinking alcohol worth 10 pound, whereas Poster C may not think that alcohol worth 10 pound is sufficient to make him 'feel' drunk. Consequently he seems to decide on a 50 pound limit. It may thus be said that Posters B and C, both have different levels of consumption at which they feel drunk. This inference is supported by Lange and Voas (2001, p. 5) who maintain that "an instance that could be defined as binging may vary substantially from individual to individual".

In discussing an earlier post (#2), it was suggested that it is possible, that when people do not have a defined limit for alcohol intake, they may not receive a conscious notification from their brain to stop drinking. As a consequence they may end up drinking more than desired. This reasoning finds support in the current post. It can be seen here that the participant sets a limit for his drinking to ensure that he does not get too drunk. It may be thus said that when participants do not set a limit for consumption they may end up binge drinking unintentionally.

According to the Attitude Qualification (AQ) construct of the HBCPM, Poster B (#14) acknowledges the severity of the effects of binge drinking and his vulnerability to them. Janz and Becker (1984) posit when susceptibility and severity are high, the degree of stimulation required to trigger behaviour change may be very low. Thus it can be seen that the participant applies the change process of *Self-re-evaluation* where he acknowledges how he feels about getting too drunk (Prochaska, DiClemente, & Norcross, 1992). In addition, he also seems to apply *Self-liberation* where he commits to definite measures to limit his drinking (Prochaska, DiClemente, & Norcross, 1992). According to the Extent of Influence (EOI) construct of the HBCPM, the change processes applied are in accordance with the participant's attitude. It may also be implied from the post that Poster B applies these change processes to himself. Nonetheless, the change processes he applies in his post appear to have influenced change in Poster C. Thus, it may be said that, whether intended or not, posts that

express views and experiences on binge drinking, may stimulate the participants to consider their own drinking habits.

Post #16

By 'Poster A' Female (06-03-2008, 20:06)

> still no drinking for me...its 7 weeks now and idont even want a drink.....well pleased with my little self.....alcohol is bad

Post #17

By 'Poster E' Male (06-03-2008, 20:20)

> Fair play! Didn't you give up the K a while back? (Thats what i'm doing now!)

Post #18

By 'Poster A' Female (06-03-2008, 20:29)

> yeah hun given up everything for a while my body really needed it and im in a place where i can do that now.....ive woken up and realsied that i was getting knowehere very fast im worse off now than i was 5 years ago....taking stock of my life first and then partying can come later...still going out just straight headed

Post #19

By 'Poster E' Male (06-03-2008, 21:01)

> Good on ya for sticking to it and having a recovery period! Drugs are losing their appeal now for me as well. I still do em but it's taking me longer to recover now! 

Post #20

By 'Poster G' Male (06-03-2008, 21:10)

> sounds good guys... av been off alcohol and chemicals for over 2 months now feeling much healthier and more energy to do stuff I never got round to before.. proper getting into mountain biking at the mo.

By considering Posts 16 to 20 together, the influence of posts on the participants can be discussed. The above series of posts indicate that the participants, Posters A, E, and G are sharing the experience of changing their alcohol and drug consumption habits. According to the HBCPM, the four participants seem to apply the process of *Reinforcement Management*, by not only making positive self-statements but also overtly supporting each other's decision and resolve to give up drinking (Prochaska,

DiClemente & Norcross, 1992). They also seem to apply *Self-re-evaluation* where they compare their own self-image with and without their unhealthy drinking habits (Prochaska, DiClemente & Norcross, 1992).

If one compares Post 16 and Post 18 made by Poster A, it may be said that she reveals much more in her second post (#18). It appears that Poster E's inquiry (#17) motivated her to disclose more about her personal life. On the basis of this observation, it seems that since Poster A received a favourable response from Poster E, she may have felt comfortable and encouraged to reveal more about her experience. Consequently she may have been motivated to make an additional post where she expresses why she considered changing her drinking behaviour. This rationale is supported by Safko and Brake (2009) who posit that a forum engenders communal bonding. Based on Budiman's (2008) description of forums, this community may not necessarily be bound by kinship or close geographical proximity, but their common interest in sharing their experience of dealing with binge drinking encourages communal ties.

The posts made by Posters A and E appear to have a domino effect as they seem to have inspired Poster G (#20) to express his experience of quitting drinking and drugs. It appears that he makes this post as a consequence of seeing posts by Posters A and E which talk about quitting. He talks about the changes he has felt in himself since quitting binge drinking. He did not bring these points up in an earlier post, where he encouraged a participant to quit. It may thus be inferred that by seeing Posters A and C share their experiences of quitting drinking, he may also have felt like talking about his own. It may thus be implied that when a participant sees others on the thread in a similar situation as him or herself, he or she may feel motivated or inspired to share their experience as well. If the discussion is focused against binge drinking, then it may result in a stronger influence on participants to consider their binge drinking habits.

The above posts (#16 to #20) are made on a thread where participants are criticising media attention on binge drinking (E.g. Post #4, #5). The participant, Poster A, by making a post on her experience of quitting binge drinking, seems to completely change the track of the conversation. While the thread started by criticising the media about

binge drinking, it moves on to participants discussing their own efforts to quit binge drinking. It can be seen here that just one post by a participant may be enough to change the course of the conversation. Thus, if a participant starts reading the discussion because of their interest in the initial post, they may also be exposed to posts that are off the topic. For example, in this case, a participant, who feels irritated by the media for placing negative attention on binge drinking, may go through this discussion to make their own post or to read what other participants think. However, after a few posts they may read posts by participants that are talking about their efforts to quit binge drinking. Thus, as seen in the case of certain earlier posts, it is possible that by reading those posts, the participant be influenced to some extent. In this way, a thread may unintentionally influence a participant and the participant may also be unintentionally influenced by reading posts that they did not mean to read in the first place.

6.2 Research Questions answered

The qualitative analysis and discussion of the posts presented above and the supporting quantitative summary reported in the previous chapter enables the researcher to encapsulate the key findings and address the questions that inspired this research.

6.2.1 Attitude of the online community/forum participants towards binge drinking

The analysis of manifest and latent content of posts in the previous section reveals an explanation for the participants' binge drinking behaviour. The following section presents a review, highlighting the reasons why participants binge drink and the problems they face in changing their habits.

Why do participants binge drink?

From the analysis of posts it appears that many participants binge drink in a bid to control their experience of emotions. These participants seem to expect that binge drinking will relieve stress and produce an experience of happiness and enjoyment which otherwise may be absent from their lives. According to the Theory of Reasoned Action, their belief that drinking alcohol will lead to an improved emotional experience may influence their attitude towards binge drinking behaviour (Ajzen & Madden, 1986).

This finding corroborates the research by Woody, Urschel and Alterman (1992), Wills and Shiffman (1985), and Lang, Patrick, and Stritzke (1999) who state that people may drink alcohol to enhance the experience of positive emotions, and decrease the experience of unpleasant emotions when they are anxious. It seems that participants prefer to binge drink to lose temporary awareness of the issues they face in their lives.

Certain participants appear to binge drink because they feel compelled to follow the drinking codes of the social environment. This finding is in agreement with Ajzen and Madden's (1986) concept of subjective norms which suggests that people may drink for "social approval" (Janz & Becker, 1984). Festinger (1954) confirms this, stating that people may act as per the expectations of the group in order to satisfy their need for association. Janz and Becker (1984) suggest that when people binge drink to avoid social rejection, it may be considered as a barrier to changing their drinking habits. In contrast to avoiding social rejection, it seems that participants may also binge drink for social gain. Certain participants may binge drink since they believe that the consequent disinhibition and increase in self-confidence (NHS, 2010) will enable them to behave in a way that attracts the attention of others. The finding is consistent with those of Cooper, Frone, Russell, and Mudar (1995), Monahan and Lannutti (2000), and Engels, Wiers, Lemmers, and Overbeek (2005) who find that people may binge drink when they expect that alcohol will lead to improved social experiences.

From the posts it also appears that certain participants' may not binge drink intentionally. Participants while drinking, tend to focus more on the experience of their feelings and their cognitive thought processing appears to be relatively low. Accordingly, the cognitive awareness required to keep track of how much alcohol they are consuming may be side lined. Consequently, they may end up drinking more than they intended to. This rationale is supported by the NHS (2010) who affirms that binge drinking reduces attention span, slows down reaction time, makes one emotional and easily confused. Thus it is not surprising that the participants seem to consider in hindsight that they should not have drunk so much; however at the time of drinking, they did not have the realization that they were overdoing it. Thus it may be inferred that not all participants binge drink intentionally.

As indicated above, the cognitive processing of participants' while they are binge drinking appears limited. Consequently, it is possible that they do not rationally consider their behaviour while drinking. It may be implied that they may not evaluate the severity of the consequences of binge drinking and their own vulnerability to them. Subsequently, they continue to binge drink (Janz & Becker, 1984).

Participants seem to associate an automatic attitude towards binge drinking i.e. they appear to be repeatedly driven to drink certain amounts of alcohol at certain times or occasions or in certain environments. This inference confirms with the findings of several other researchers that investigate the link between implicit attitudes and alcohol consumption. According to Payne et al. (2008), based on people's conditioning, they may treat places, people and social situations as cues for drinking. These cues can trigger a motivational state that can direct them to acquisition and consumption of alcohol (Baker, Morse, & Sherman, 1987; Wise, 1988). A stronger association between alcohol cues and consumption was found especially in binge drinkers (Palfai & Ostafin, 2003). For instance a participant states in his post that he needs a set amount of alcohol every weekend (Post #3). Such a tendency may be considered as characteristic of habitual behaviour. Janz and Becker (1984) suggest that behaviours with substantial habitual components tend to override the conventional psychosocial decision-making process. Thus it may be said that while drinking, these participants do not consider how much they drink and consequently they may not realise that they are binge drinking.

From the posts, the participants appear desirous of drinking to just the right amount to get tipsy, however it seems that they themselves are not certain of what that level or quantity is. Participants refer to this desired amount in their posts in an abstract manner. Consequently, it may be said that since some participants have no defined limit for their consumption, they possibly receive no conscious notification from their brain that they have reached their intake limit and must now consider stopping. As a consequence they may end up binge drinking. It appears from the posts that some participants let their body set the limit for their drinking. They seem to drink until they are no longer in control of themselves (MCM research, 2004, as cited in Cagney, 2006).

It may also be noted that the participants do not mention the safe drinking limit specified by the standard health bodies. It is possible that the participants drink to get drunk and the safe drinking limit may not be sufficient to lead to drunkenness. It has been seen in the posts, that the participants report different levels of alcohol at which they feel drunk. This inference is supported by Lange and Voas (2001, p. 5) who maintain that "an instance that could be defined as binging may vary substantially from individual to individual".

Few participants binge drink to experience the thrill of undertaking a risky or a tabooed act. On similar lines, few posts showed that participants adopt binge drinking habits that are in opposition to those recommended by health bodies, the media, or their well-wishers in order to establish their own independence to take decisions regarding their drinking.

The above section discusses a few possible reasons identified from the posts behind participants' binge drinking. The analysis of posts shows that some participants consider changing their binge drinking habits; however they seem to be unsuccessful in doing so. The following section analyses the likely problems faced by these participants in changing their binge drinking behaviour.

Why do participants continue to binge drink in spite of being aware of its negative impact?

The analysis of posts indicates that there are certain participants who have the intention to change their drinking habits; however their intention does not correlate with behaviour. In this category, two types of participant attitudes have been identified. Each type of participant attitude is discussed below.

The first attitude type represents participants who want to change their binge drinking habits and it appears from their posts that they make sincere attempts in that direction. However, they seem to face certain barriers that they cannot overcome and consequently they go back to their drinking habits. This rationale is supported by the HBM, which suggests that even if participants consider change, they may not be

successful if they face barriers in giving up binge drinking (Janz & Becker, 1984). These participants face barriers such as experiencing alcohol withdrawal effects, cravings and reluctance to seek medical help.

The second attitude type represents participants who express the intention to change their habits; however they seem to do nothing about it. According to the Theory of Planned Behaviour, in situations where there is an intention-behaviour mismatch, Perceived Behavioural Control (PBC) can be expected to predict behaviour independently (Ajzen, 1991). Azjen and Madden (1986), suggest that problems of behavioural control become pronounced and salient when one aims at achieving a difficult goal such as changing drinking habits. Consequently, it may be implied that these participants may believe that they do not have much control over changing their drinking behaviour. Thus, as per TPB, it may be implied that even though they have the intention to change their habits, they are unable to do so, since they may believe the situation is out of their control. This is evidenced in multiple posts where participants may not accept or recognize that it is their personal responsibility to take steps to avoid binge drinking. The participants blame external factors for their inability to give up binge drinking but they do not seem to acknowledge that their own drinking habits are the real cause of the problem. For example, some participants blame alcohol, some participants hold the social environment responsible while some others also blame the regulatory bodies for not prohibiting alcohol.

It seems that these participants enjoy binge drinking and hence even if they are interested in controlling their drinking, they may not be motivated to do so. Consequently they appear to experience weak resolve and are unable to restrain themselves from drinking. Some participants seem to adopt an attitude of denial and may avoid activities that can lead to increased cognition of the riskiness of binge drinking (Prochaska, DiClemente & Norcross, 1992). These participants do not seem to be convinced that binge drinking poses a serious health threat. This inference is supported by Lee, Griffin, and Melvin, (2009) who find that binge drinking is not considered a risky behaviour. Unless participants appraise binge drinking as risky, it is unlikely that they will take any steps to change it (Janz & Becker, 1984). For such

participants even if they give up binge drinking, sustenance of change is in doubt as they may not be operating out of an appropriate mental framework (Janz & Becker, 1984). Unsuccessful attempts at changing binge drinking habits may result in feelings of low self-efficacy and will power in the participants (Bandura, 1977). Thus, they may seek solace in believing that the situation is out of their locus of control (Ajzen, 1991). Consequently they may tend to validate their binge drinking habits by holding external factors responsible.

6.2.2 Influence of forum on binge drinking habits

The selected posts were individually analysed earlier in the chapter to evaluate the role of the online forum in influencing change in the participants' drinking habits. This analysis and discussion was based on two principles; firstly, the posts were studied to identify the application of processes of change laid out by the Changing Behaviour (CB) construct of the HBCPM framework, and secondly, the relevance of the applied change processes was examined using the Extent of Influence (EOI) construct defined by the HBCPM. A review of the observations made in this analysis is presented below:

RQ 2.1 Can the forum influence its participants to change their binge drinking behaviour?

It is interesting to note that the posts analysed employ all the processes of change laid out by the HBCPM research framework. Consequently, on the basis of the Trans-theoretical model's stages of change construct described in the literature review, it may be implied that the forum has a diverse group of participants who are at different phases in the process of changing their drinking behaviour (Prochaska, DiClemente, & Norcross, 1992).

According to Prochaska and DiClemente (1985), of the above processes, *Helping Relationships, Consciousness Raising, and Self-liberation* were most frequently used in the problem areas of smoking, psychological distress, and obesity (as cited in Prochaska, DiClemente, & Norcross, 1992). In this study, the quantitative analysis indicates that *Consciousness Raising* was among the most frequently used change process in posts. Prochaska and DiClemente's (1985) findings also reveal

Reinforcement Management and *Stimulus Control* as the least used processes (as cited in Prochaska, DiClemente, & Norcross, 1992). In this study as well, the least used change processes were found to be *Reinforcement Management* and *Stimulus Control*.
Prochaska and Velicer's (1997) TTM of health behaviour change proposes an additional stage of change; termination. According to them, this stage comprises of people who have maximum self-efficacy and do not experience any temptation to go back to their old behaviour. However, they acknowledge the rarity of this condition and consequently do not focus on it in their work. In the analysis of these posts also, there were no participants found who had not experienced any temptation to revert to their old behaviour.

Certain participants in expressing ideas about their drinking behaviour seem to apply the change processes of *Self-re-evaluation, Counterconditioning, Consciousness Raising* and *Self-liberation* on themselves. This finding supports previous research which indicates that self-changers apply change processes as they move through the stages trying to change problem behaviours (Prochaska & Velicer, 1997; Prochaska, DiClemente & Norcross, 1992). As explained in the literature review, these processes have been applied by participants to assess their drinking habits, to acknowledge their feelings about getting drunk and to compare their self-image with and without their unhealthy drinking habits (Prochaska, DiClemente, & Norcross, 1992). Participants also apply these change processes to increase awareness about themselves and their drinking problem, to substitute their problem drinking with alternatives and to commit to definite measures to limit their drinking (Prochaska, DiClemente, & Norcross, 1992). It is worthwhile to note that in contrast to some participants who employ a single change process, there are some participants who employ multiple change processes in a single post. For example, one participant applies four change processes (*Self-re-evaluation, Stimulus Control, Counterconditioning and Modelling*) in a single post. According to the Trans-Theoretical model (TTM) people apply these processes in different stages of change. However, the participant here applies multiple processes, meant for different stages in a single post. The TTM would reason that the participant passes through four stages of change in the time period of writing a single post; however this explanation does not seem plausible. Hence, this finding agrees with concerns expressed by

previous research reviewed in the literature over the validity of the stages of change construct suggested by TTM (Aveyard et al., 1999; Greene & Rossi, 1998).

The analysis showed that the participants also employed the change processes of *Modelling, Consciousness Raising, Helping Relationships and Reinforcement Management* in addressing difficulties faced by fellow participants in modifying their drinking habits. It can be seen that with the exception of *Consciousness Raising*, there is a difference in the change processes applied by the participants to themselves and those applied to others. While *Consciousness Raising* was used in the former case to increase awareness of personal drinking behaviour (Prochaska, DiClemente, & Norcross, 1992), in the latter case, it is used to provide scientific information to others on the biological effects of excessive alcohol consumption and remedial alternatives. The processes of *Modelling, Helping Relationships* and *Reinforcement Management* as indicated in the literature review have been used to boost self-efficacy in fellow participants experiencing low self-confidence and will power (Bandura, 1977), to show care and to support participants that are making an effort to change their drinking habits (Prochaska, DiClemente, & Norcross, 1992).

Contrary to expectations, it was found that irrespective of whether the participants applied change processes to themselves or to fellow participants, in either case they seem to influence change in certain participants. However, this finding does not completely support the idea of stage-matched change processes laid out in the Trans-Theoretical model which states that each change process applies specifically to a particular stage of change (Prochaska, DiClemente, & Norcross, 1992). It can be seen here that even though change processes are not aimed at certain participants let alone their relevance to the participants' stage of change, they still seem to influence some change. Thus, it may be said that, whether intended or not, posts that express views and experiences on binge drinking, may stimulate the participants to consider their own drinking habits.

Since this research examines posts on an online forum, which has not been the case with previous research in this field, certain observations made here cannot be evidenced. For

instance, it was found that posts may intentionally or unintentionally negatively influence a participant by motivating them to binge drink. It is difficult to say which participant's post may motivate or trigger positive or negative change in another participant's attitude and behaviour. It appears that the participants who are making these posts may not be aware of the effect they are having on other participants.

Another interesting finding was that the discussion on threads was not necessarily limited to the topic with which the thread was started. Thus participants may also get unintentionally influenced by reading posts on topics that they did not mean to read in the first place. The posts on the thread also appear to have a domino effect. When participants see others on the thread discussing a situation that they have experienced or are experiencing, they seem to feel motivated or inspired to share their experience. If such a discussion is against binge drinking, then it may result in a stronger influence on participants to consider changing their binge drinking habits or it may encourage those participants who are already trying to change their drinking habits. However, since this finding cannot be supported by previous research, the suggested implications need to be treated with caution.

The above section reviews the findings based on the processes of change applied as per the Change Behaviour (CB) construct of the HBCPM framework. The following section evaluates the findings by analysing the relevance of the applied change processes to the posts.

RQ 2.2 What is the extent of influence extended by the forum on its participants, in terms of changing their behaviour?

While it is positive that these change processes have been applied, it is also important to consider the way they have been applied. From qualitative analysis, it was found that some change processes applied in the posts may not have been appropriately suited to the requirements of the participants to whom they were directed. For example, it was observed that the *Self-liberation* change process was applied to a participant who did not seem to be convinced of the risks of binge drinking and was consequently not able to change his drinking habits. According to the Extent of Influence (EOI) construct laid

out in the HBCPM, applying *Self-liberation*, a change process that demands a commitment to stop drinking, may appear intimidating to a participant who does not yet see binge drinking as risky. Even if the participant is influenced to make a commitment, he may not be able to maintain it, since he may still not believe that his drinking is harmful (Janz & Becker, 1984).

A post that seemed to use *Consciousness Raising* to address the same participant was also observed. As per the EOI construct of the HBCPM, this change process is most relevant to the participant's circumstance, since it would help him with an increased awareness about the causes, consequences, and cures for his drinking behaviour (Prochaska, DiClemente, & Norcross, 1992). This change process may not only encourage him to understand his problem better but also help him take the initial steps towards dealing with it (Prochaska, DiClemente, & Norcross, 1992).

On the basis of the above observations, it may be said that change processes are applied in posts such that they may or may not be appropriately suited to the requirements of the participant to whom they are directed. Consequently, not all of the applied change processes may extend an optimum influence on the participants to whom they are directed.

Summary

The chapter presents a qualitative analysis of posts on threads with different discussion topics. The analysis has shown the different attitudes of the participants towards binge drinking and the media, the differing language and tone they adopt in interacting with each other, the possible influence of posts on participants and varying self-expression. With the exception of a few, most findings could be supported by previous literature. Based on the qualitative and quantitative analysis from the current and previous chapter, the answers to the research questions have been presented. The following chapter summarizes the key findings and discusses their implications. The chapter also identifies the research limitations, its contribution to knowledge and scope for further research.

Chapter 7: Research Conclusion

The purpose of this research is to study the attitude of the forum's participants toward binge drinking and to examine the role of the forum in changing their drinking behaviour. This chapter discusses the key findings in an endeavour to provide insights on the research focus and present their implications on the research context. The discussion is split into two sections. The first section focuses on the key findings in terms of participants' attitudes towards binge drinking and the forum's influence on changing the participants' binge drinking behaviour. The second section presents the implications of the research findings, limitations of the research, its contribution to knowledge and scope for further research.

7.1 Summary of Key Findings

This research was driven by an interest in understanding the attitude of people towards binge drinking. The researcher also wanted to investigate whether a discussion on binge drinking on an online community can influence its participants to change their binge drinking habits. Posts from different threads on an online forum where the discussion revolved around binge drinking were analysed and several insights that answered the research questions were gained.

Through analysis of multiple posts, a few common reasons why people binge drink could be discerned. Certain participants seem to enjoy the experience of binge drinking and like the thrill of undertaking a risky or tabooed act. There were also participants who seemed to binge drink on purpose to defy the standards set by health bodies or the media. While the above participants seem to want to drink, there were also participants not keen to binge drink, but they seemed to binge drink to confirm to the behavioural codes of their social environment. For certain participants binge drinking seems to have become a habit. The analysis also identified participants who while drinking seem to lose track of their consumption and may consequently end up binge drinking unintentionally. Similarly there are some participants who may not set a limit for themselves while drinking and it seems that they continue to drink till they think they

cannot drink any more. For certain participants binge drinking may be a symptom of a personal problem.

The participants were observed to blame external factors such as the social environment and regulatory bodies for their inability to give up binge drinking. These participants do not seem to perceive binge drinking as a serious health threat; hence even if they are interested in controlling their drinking, they may not be sufficiently motivated to make the required effort. Nonetheless, there are participants who attempted behaviour change, but were unsuccessful since they could not overcome the barriers faced in the process. The identified barriers include experience of alcohol withdrawal effects, cravings, and reluctance to seek medical assistance. Only a couple of participants expressed the benefits of giving up binge drinking such as improvement in physical, mental and emotional health and financial savings.

The second focus of the research was to understand the forums' ability to influence its participants to change their binge drinking habits. The analysis indicates that the posts may influence certain participants to consider their binge drinking habits and behaviour change. Posts not only seem to encourage the efforts of participants who are working on behaviour change but also advise participants on possible ways of overcoming difficulties faced in changing behaviour. Nonetheless, the nature of advice given by posts may or may not be appropriately suited to the requirement of the participants to whom they are addressed. For instance, in addition to positively influencing participants, there was also a post that appeared to have a negative effect on a participant. Consequently, not all posts may extend an optimum influence on the participants to whom they are directed.

7.2 Implications of research

The above research findings have a number of important implications for communication and healthcare professionals working to address binge drinking in society.

The research identifies certain crucial aspects of the attitude of participants towards binge drinking which suggest several courses of action for those working on

communication employed against binge drinking. For example, certain participants on the forum have been observed to disregard the media attention given to binge drinking, regarding it as 'hype'. Thus mass media communication against binge drinking should be such that it appears real and believable. Sometimes the exaggeration used in fear appeals can backfire and create the boomerang effect (Atkin, 2001). Such an approach may cause people to disregard the communication completely. Also, messages should be disseminated regularly over a period of time rather than in bursts, so that they do not get passed off as a one-off media activity or an issue that the media has created.

The results of the study indicate that participants on the forum have different attitudes towards binge drinking. This information can be used to develop targeted interventions aimed at specific attitudes of the audience to achieve a higher degree of persuasion. For example, the findings suggest that there is a set of participants who want to give up binge drinking but are unable to do so due to low will power and low self-efficacy. Thus media communication may be designed such that it boosts the feelings of self-confidence and the self-efficacy of those audience members who are considering changing their binge drinking habits. Similarly, the findings point out participants who have given up binge drinking but seem susceptible to relapse. Thus media communication should also focus on positive reinforcement and recognition of those who have successfully changed their behaviour and are experiencing the benefits of abstinence. For both of the above sets of audience, change processes of *Modelling* and *Verbal Persuasion* can be employed to boost the feelings of self-efficacy (Bandura, 1977). The study identifies a lack of suitable alternatives for social meetings as an obstacle in giving up binge drinking. Thus, communication employed against binge drinking, may focus on creating awareness of alternate settings for social encounters and meetings that do not involve alcohol.

The study highlights that participants refer to a 'right level' of drinking as the amount of alcohol one can consume without feeling physically ill. It appears that the participants consider alcohol to have some influence only when its effects are manifest such as feeling high or tipsy or drunk or passing out. However, alcohol consumed begins to affect bodily functions well before these effects are manifest (Patton, n.d.; NHS, 2010). However, the participants do not seem to acknowledge that binge drinking affects the

body internally. It has been also observed from the posts that participants seem to adopt a selective attitude towards the effects of binge drinking, considering some effects risky while trivialising others. They also seem to underestimate the consequences of drunken behaviour. The attitude of one-off binge drinking sessions being harmless has also been observed on the posts. Again participants seem to ignore the fact that consuming a large amount of alcohol in a one off session can be as damaging as a few sessions combined (Smith, 2012). Thus communication on binge drinking should stress awareness of the different effects of binge drinking and their severity. Messaging should especially emphasise how binge drinking affects internal functioning of the body and the seriousness of drunken behaviour. When participants refer to drinking to the 'right amount', they do not seem to consider the standards defined by health authorities to ensure safe drinking. It is possible, that they may not be aware of the existence of such standards. Thus communication must also focus on bringing forth the importance of following the recommended standards for safe drinking set by health authorities.

The study infers that a few participants may perceive binge drinking as an escape from personal complications. The posts show that in such cases, when participants instead of dealing with the root problem, continue to binge drink, their root problem remains unresolved and the frequency of their binge drinking tends to increase. As seen in the posts, they consequently develop a dependence on alcohol and the alcohol consumption itself becomes a cause of stress. Thus it is important that when media communication focuses on binge drinking, the messaging should aim at stimulating the audience to address the actual reason for binge drinking.

Based on the key research findings, crucial factors that should be considered in framing communication messaging against binge drinking have been identified above. The research findings may also have important implications for health care professionals. The study demonstrates how an online community may be used as a therapeutic medium. Based on the analysis, it was found that even though the participants may not be aware of the concept of change processes and how to apply them, their posts still seem to influence fellow participants on the thread. The participants just by expressing their attitudes and sharing their experiences of binge drinking, seem to stimulate other participants on the thread to consider their own binge drinking habits. Thus, irrespective

of whether the participants applied change processes to themselves or to fellow participants, it appears that in either case they seem to influence change in certain participants. Consequently, in addition to support groups set up by researchers and healthcare professionals, even user-defined groups such as the one analysed in this forum can play a role in influencing positive change in their participants. Moreover, the forum that was chosen for analysis comprised threads that did not appear to be setup for discussing binge drinking issues. Thus, even on such a forum where there is no apparent intent to induce participants to change their binge drinking habits, it has been seen that positive influence is possible. On the basis of this analysis, it seems that online communities may be used to influence change in binge drinking habits of participants.

7.3 Limitations

The findings in this research are subject to a few limitations. Firstly, certain posts could not be analysed in their entirety since their language did not seem to convey sound meaning. For example, in certain posts the extent of spelling errors made comprehension of some words very difficult. Consequently, the coherence of the text was lost, which in some cases lead to loss of meaning. The most important limitation lies in the fact that in certain cases, the latent meaning captured from the posts may not be representative of the participants' thought process. This may especially be the case in posts where participants used very limited punctuation. In such posts, the intended tone was not clear, allowing the text to be interpreted in several possible ways. Thus there is a strong possibility that the interpretation of such posts may be influenced by the researcher's subjective views.

Another limitation of this study is that due to time constraints, the number of posts that were analysed qualitatively was relatively small. It was not possible to track different posts made by participants over time, to understand if the forum's influence leads them to change their attitude or binge drinking behaviour. Thus, whatever a participant said, in a certain post that was chosen for analysis, was treated as evidence of their attitude and behaviour. Further posts made by the same participant were not tracked to verify whether their formerly expressed attitude and behaviour changed with time. Thus, it may be that a participant in a post expressed his decision to change binge drinking habits, and then expressed a change of mind in a subsequent post. In such a case, the

findings will consider only the former post, and show that the participant was positively influenced by the forum and decided to change his or her drinking behaviour. However, such an inference may be misleading.

The research evaluates an online community, to examine whether an environment where participants do not know each other personally, can motivate them to reveal their feelings about binge drinking without hesitation and consider advice on changing their habits. Thus the research assumes that the participants are not acquainted with each other outside the environment of the forum. However, it may have been possible that the participants in the forum knew each other before hand. From the observation of a few posts it seems that some participants knew each other personally. It is possible that there may be a difference in the influence of posts exchanged between participants who know each other and those who do not. However, the research regards all posts in the same manner and consequently the findings may be misleading if a large number of the participants whose posts were analysed knew each other before hand.

The research question was inspired by the observation of people's binge drinking behaviour in Auckland, New Zealand. The researcher's interest was to understand the attitude of New Zealanders towards binge drinking through an online community. However, in the secondary research, no New Zealand based online community was found that satisfied the research sample requirements. A United Kingdom based online community seemed to be best suited to the research and was hence used for analysis. From the posts, it seemed that most of the participants were from United Kingdom and a couple from Australia. However, there seemed to be no New Zealanders on the forum. Thus the findings of this study may or may not be applicable to the binge drinking scenario in New Zealand.

As indicated above, the majority of the posts that were analysed were made by participants from the United Kingdom. They used local slang and colloquial terms in their posts which could not always be understood by the researcher. Consequently, the interpretation of the content of such posts has been fragmented and it is possible that the intended meaning may either have been misinterpreted or not completely captured.

In the posts that were analysed, the participants expressed their views on excessive alcohol consumption and getting drunk, however very few indicated the actual quantity of alcohol intake. It may be possible that some participants' estimation of excessive alcohol consumption may not qualify as binge drinking. Consequently, such participants when citing their views on excessive alcohol consumption or drunkenness may not be referring to binge drinking. However, it is difficult for the researcher to identify where the participants are discriminating between excess alcohol intake and binge drinking. Thus, the research treats opinions on excessive alcohol consumption as opinions on binge drinking. Consequently, in cases where participants regarded them as separate; their opinions may have been misinterpreted by the researcher.

Flaming posts were found to disrupt the flow of certain threads to an extent that the participants stopped the discussion on the existing topic altogether and moved to another topic. Since the research used an unobtrusive method of study, it was not possible to manipulate the discussion to get it back on track. In certain cases the conversation was disrupted right when cogent arguments against binge drinking were presented and thus the essence of the conversation was lost. Thus, lack of moderation on the forum became a limitation in cases where it prevented insights on the attitudes of different participants and the thread's influence on them.

7.4 Contribution to Knowledge

A key focus of this study was to examine whether the discussion on the forum could influence its participants to change their binge drinking habits. Based on Stroebe's (2011) definition of health behaviour, binge drinking can be considered as a health impairing behaviour. Many theories and models have been proposed to predict and change people's health behaviour (Johnston & White, 2003). A few of these such as the Health Belief Model (HBM), the Theory of Reasoned Action (TRA) /Planned Behaviour (TPB), the Social Cognitive Theory (SCT) and the Trans-theoretical Model (TTM) have become the most commonly used in health behavioural research (Glanz, Lewis & Rimer, 1997 as cited in Noar & Zimmerman, 2005, p. 277). However, even though these theories are very prominent in their field, it does not mean that they can be applied appropriately to any health behaviour research (National Cancer Institute, 2005). The same was true in the case of this research. As fully explained in an earlier

chapter (Chapter 3), an existing theory that could singlehandedly fit the research topic, the units of analysis and the behaviour in question could not be found in the literature reviewed. Thus, for the purpose of this research, a unique framework, Health Belief Change Process Model (HBCPM) was formed by integrating two distinct theory types; an explanatory theory (Health Belief Model) and a change theory (Trans Theoretical Model).

The HBCPM framework is a significant contribution to the knowledge on health behaviour research since it presents a novel approach to investigating health behaviour and implementing the relevant change processes. The existing theories reviewed, either predict and account for behaviour or guide behaviour change. However the HBCPM not only explains and predicts participants' binge drinking behaviour but it also maps their process of change. Thus, this model provides a holistic structure to examine how an individual does or does not move through the process of behaviour change. It may be said here that the Trans-theoretical Model also lays out the stages of change construct, which charts the progress of an individual through different phases of change. However, the literature review presents arguments that question the validity of the stages of change construct. In observing the posts on the forum, it was found that the participants moved from one stage of change to another in the same post. Thus the practical application of the stages of change construct seems ambiguous. Similarly, the Health belief model does not specify any measures for operationalizing its variables. Whereas, the HBCPM defines three clear constructs with distinct and definite variable measures for each. These variables were successfully found to account for participants' attitude towards binge drinking and their experience of changing their binge drinking behaviour.

The application of the model in this research was primarily limited to account for participants' attitudes and processes of change. However, the model can be applied in practice by health care professionals to understand the attitude of an individual towards certain health behaviours and accordingly guide the change process. Practitioners may also realise that using the HBCPM, a product of two theories, may prove to be more effective than using a single health-behaviour theory or model (National Cancer Institute, 2005). In addition to health care practitioners, the model can also be employed

by professionals working in the field of health communication for developing communication strategies and campaigns. The model can help in segmenting the target audience based on their attitude towards binge drinking, defining communication objectives, creating messages and in evaluating the impact of the messages. Thus the HBCPM can be applied in both fields; health care and health communications.

The second important contribution of this study is to the knowledge of methodology. The methodology used in the research is unique in two ways. This research uses content analysis to understand how participants express themselves in an uncontrolled environment and without the knowledge of the researcher's presence. Based on the literature reviewed, it was found that most research in the field of binge drinking employs an obtrusive method such as surveys and interviews in studying its participants. Thus the use of an unobtrusive method in this research for investigating health behaviour appears to be unique. In addition, this research is conducted on participants in an online forum which is *not* a support group. In the literature reviewed, no other health behaviour research was found to do so. Thus this research shows that individuals' health behaviour can be examined online in an unobtrusive setting.

Finally, the research findings make an important contribution to the body of knowledge on the influence of online forums on binge drinking attitude and behaviour. As indicated above, the literature review was not able to identify research undertaken on generic online communities i.e. non support groups or self-help groups. Thus the findings of this research with regard to the influence the forum has on its participants and how the participants interact with each other in the forum environment assumes significance. Existing research on online support groups indicate that their participants experience emotional relief, decrease in stress and negative emotions and emotional enrichment (Esterling, L'Abate, Murray & Pennebaker, 1999; Cummings, Sproull, & Kiesler, 2002; Bane, Haymaker, & Zinchuk, 2005; Buchanan & Coulson, 2007). However, according to Barak, Boniel-Nissim, and Suler (2008) and White and Dorman (2001), the effectiveness of such support groups in aiding their participants to deal with problems is in doubt. The online forum discussion studied in this research shows that the posts may influence certain participants to consider their binge drinking habits and behaviour change. However a few posts also showed that the discussion may have a

negative effect on a participant. Nonetheless, in comparison to the posts that may positively influence a participant, these were very few in number. Professionals in health care and health communications may use these findings to investigate how such a forum can be used effectively as a channel for addressing the issue of binge drinking.

7.5 Further research

The research findings suggest that the online forum can positively influence its participants to change their binge drinking attitude and behaviour. Further work needs to be done to establish whether the influence of the forum translates into actual behaviour change. As a consequence of the discussion on posts, the participants may show an inclination to change their binge drinking habits; however whether they actually change their behaviour is in question. It would be interesting to assess through a longitudinal study, the correlation between participants' expression with respect to binge drinking on the online forum and their real life binge drinking behaviour. While an unobtrusive method such as the one used in this research works well when faced with resource constraints, a mixed method approach would be better suited. Along with content analysis, interaction with the participants using a qualitative method such as interviews or case studies will establish whether the forum was able to effect behaviour change. In addition, it will also give insights on how the forum affects people's thought processes. This assumes importance in the case of participants who may not reveal much in their posts on how the discussion affects their binge drinking attitude and behaviour.

Further research may also explore how the forum's influence plays out in changing a participant's attitude and behaviour over a period of time. Several aspects may be investigated here; the period and the type of exposure to the thread discussions before the participants decide on behaviour change, the participant's expression of the change cycle on the forum, the support received from the forum and the role of external support. In order to gain a deeper understanding of the potency of the forum's influence, it would be worthwhile to compare how the forum affects different individuals on the same threads.

More broadly, research is also needed to assess the influence of the forum on lurkers. On the forum that was analysed, the number of lurkers in relation to the numbers of actual participants on the thread was relatively high. For example, a thread that was analysed as a part of this study had 38 participants but it was viewed by 11,244 people. Thus, research with this focus can help in understanding if the forum has the ability to influence passive participants.

Summary

The research was inspired by an interest in understanding people's attitudes towards binge drinking and thus an online forum where participants are not inhibited by the presence of the researcher was chosen for the study. The study also investigated whether a conversation on the forum can influence its participants to change their behaviour. Since existing literature did not appropriately serve the research purpose, a framework was designed which was applied using qualitative content analysis to the posts on the forum.

The findings of the research suggest that participants binge drink for several reasons; for enjoyment, thrills, defiance, to escape their personal problems, to conform to the behavioural codes of their social environment and out of habit. Some participants may not be alert enough to watch their intake and consequently end up binge drinking unintentionally. Participants were found to blame external factors for their inability to give up binge drinking. Findings also suggest that the posts on the forum may influence certain participants to consider their binge drinking habits and behaviour change. Posts also seem to encourage and advise participants on changing binge drinking behaviour. However, not all posts may be a healthy influence on the participants.

The research presents the implications of the findings for professionals in health care and health communications and discusses the scope for further research. It is hoped that this study provides insights that can be successfully applied in practice to address the issue of binge drinking faced by society.

REFERENCES

A

Adams, J., & White, M. (2005). Why don't stage-based activity promotion interventions work? *Health Education Research*, *20*(2), 237-243. doi:10.1093/her/cyg105

Aho, W. R. (1979). Participation of senior citizens in the swine flu inoculation program: An analysis of Health Belief Model variables in preventive health behaviour. *Journal of Gerontology, 34*(2), 201-208. doi:10.1093/geronj/34.2.201

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211. doi:10.1016/0749-5978(91)90020-t

Ajzen, I. (2011). The theory of planned behaviour: Reactions and reflections. *Psychology & Health, 26*(9), 1113-1127. doi:10.1080/08870446.2011.613995

Ajzen, I., & Fishbein, M. (1977). Attitude-behaviour relations: A theoretical analysis and review of empirical research. *Psychological Bulletin, 84*(5), 888-918. doi:10.1037/0033-2909.84.5.888

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice Hall.

Ajzen, I., & Madden, T. J. (1986). Prediction of goal-directed behaviour: Attitudes, intentions, and perceived behavioural control. *Journal of Experimental Social Psychology, 22*(5), 453-474. doi:10.1016/0022-1031(86)90045-4

Ajzen, I., Timko, C., & White, J. B. (1982). Self-monitoring and the attitude-behaviour relation. *Journal of Personality and Social Psychology, 42*(3), 426-435. doi:10.1037/0022-3514.42.3.426

Alexa. (n.d.). *Partyvibe.com*. Retrieved February 13, 2013 from http://www.alexa.com/siteinfo/partyvibe.com#

Anderson, P. (2008). *Binge drinking and Europe* (ISBN: 3-937587-04-7). Hamm: German Centre for Addiction Issues (DHS). Retrieved from http://www.ias.org.uk/resources/papers/europe/phproject/bingedrinking-report.pdf

Armitage, C. J., & Conner, M. (1999). The theory of planned behaviour: Assessment of predictive validity and 'perceived control'. *British Journal of Social Psychology, 38*, 35-54. Retrieved from http://eu.wiley.com/WileyCDA/WileyTitle/productCd-BJSO.html

Armitage, C. J., & Conner, M. (2000). Social cognition models and health behaviour: A structured review. *Psychology & Health, 15*(2), 173-189. doi:10.1080/08870440008400299

Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *The British Journal of Social Psychology / The British Psychological Society, 40*, 471-499. Retrieved from http://eu.wiley.com/WileyCDA/WileyTitle/productCd-BJSO.html

Atkin, C. K. (2001). Theory and principles of media health campaigns. In R. E. Rice & C. K. Atkin (Eds.), *Public communication campaigns* (3rd ed., pp. 49-68). Thousand Oaks, CA: Sage Publications.

Australian Institute of Health and Welfare. (2008). 2007 *National drug strategy household survey: Detailed findings* (Drug statistics series no. 22. Cat. no. PHE 107). Retrieved from http://www.aihw.gov.au/publication-detail/?id=6442468195&tab=2

Aveyard, P., Cheng, K. K., Almond, J., Sherratt, E., Lancashire, R., Lawrence, T., ... Evans, O. (1999). Cluster randomised controlled trial of expert system based on the transtheoretical ("stages of change") model for smoking prevention and cessation in schools. *British Medical Journal, 319*(7215), 948-953. Retrieved from http://www.bmj.com/content/319/7215/948.pdf%2Bhtml

B

Bains, I., & Arkell, H. (2013). *Drunken teenager, 19, accidentally ran over and killed his mother as she begged him not to drink and drive*. Retrieved February 11, 2013 from http://www.dailymail.co.uk/news/article-2273361/Lewis-Foster-Drunken-teen-ran-killed-mother-twice-drink-drive-limit.html#axzz2KXFTwH00

Baker, T. B., Morse, E., & Sherman, J. E. (1987). The motivation to use drugs: A psychobiological analysis of urges. In C. Rivers (Ed.), *The Nebraska symposium on motivation: Alcohol use and abuse* (pp. 257–323). Lincoln, NE: University of Nebraska Press.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioural change. *Psychological Review, 84*(2), 191-215. doi:10.1037/0033-295x.84.2.191

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1992). On rectifying the comparative anatomy of perceived control: Comments on 'Cognates of personal control'. *Applied and Preventive Psychology, 1,* 121-126. Retrieved from http://des.emory.edu/mfp/Bandura1992APP.pdf

Bane, C. M. H., Haymaker, C. M. B., & Zinchuk, J. (2005). Social support as a moderator of the big-fish-in-a little-pond effect in online self-help support groups. *Journal of Applied Biobehavioral Research*, *10*, 239–261. Retrieved from http://www.wiley.com/bw/journal.asp?ref=1071-2089&site=1

Barak, A., Boniel-Nissim, M., & Suler, J. (2008). Fostering empowerment in online support groups. *Computers in Human Behavior, 24*(5), 1867-1883. doi:10.1016/j.chb.2008.02.004

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182. doi:10.1037/0022-3514.51.6.1173

Becker, M. H. (Ed.). (1974). *The Health Belief Model and personal health behaviour.* Thorofare, NJ: Slack.

Becker, M. H., & Maiman, L. A. (1975). Sociobehavioral determinants of compliance with health and medical care recommendations. *Medical Care, 13*(1), 10-24. doi:10.1097/00005650-197501000-00002

Becker, M. H., Maiman, L. A., Kirscht, J. P., Haefner, D. P., & Drachman, R. H. (1977). The Health Belief Model and prediction of dietary compliance: A field experiment. *Journal of Health and Social Behaviour, 18*(4), 348-366. Retrieved from http://hsb.sagepub.com

Bentler, P. M., & Speckart, G. (1979). Models of attitude-behavior relations. *Psychological Review, 86*(5), 452-464. doi:10.1037/0033-295x.86.5.452

Berelson, B. (1952). *Content analysis in communication research*. Glencoe, IL: Free Press.

Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Thousand Oaks, CA: Sage Publications.

Brug, J., & Kremers, S. (2005). Commentary 1. In K. Tones (Ed.), *The Transtheoretical Model and stages of change: A critique: Observations by five commentators on the paper by Adams, J. and White, M. (2004) Why don't stage-based activity promotion interventions work?* (pp. 244-247). *Health Education Research, 20*(2), 244-258. doi:10.1093/her/cyh005

Buchanan, H., & Coulson, N. S. (2007). Accessing dental anxiety online support groups: An exploratory qualitative study of motives and experiences. *Patient Education and Counseling, 66*(3), 263-269. doi:10.1016/j.pec.2006.12.011

Budiman, A. M. (2008). *Virtual online communities: A study of Internet based community interactions*. Retrieved from http://etd.ohiolink.edu/sendpdf.cgi/Budiman%20Adrian%20M.pdf?ohiou1215559506

C

Cagney, P. (2006). *A healthy drinking culture: A search and review of international and New Zealand literature (Final report).* (Research Report No. 3451). Retrieved from http://www.alac.org.nz/research-resources/research-publications/healthy-drinking-culture-search-and-review-international-an

Cartwright, D. (1949). Some principles of mass persuasion. *Human Relations; A Quarterly Journal, 2*(3), 253-267. doi:10.1177/001872674900200303

Carey, K. B. (2001). Understanding binge drinking: Introduction to the special issue. *Psychology of Addictive Behaviors, 15*(4), 283-286. doi:10.1037/0893-164x.15.4.283

Catanzaro, M. (1988). Using qualitative analytical techniques. In P. Woods & M. Catanzaro (Eds.), *Nursing Research: Theory and Practice* (pp. 437–456). New York, NY: Mosby Company.

Centers for Disease Control & Prevention (2009). Early release of selected estimates based on data from the 2009 National Health Interview Survey: Current smoking. Retrieved January 07, 2013 from http://www.cdc.gov/nchs/data/nhis/earlyrelease/201006_08.pdf

Centers for Disease Control & Prevention. (2011). CDC health disparities and inequalities report — United States, 2011. *Morbidity and Mortality Weekly Report, 60*(1), 101-104. Retrieved January 07, 2013 from http://www.cdc.gov/mmwr/pdf/other/su6001.pdf

Centers for Disease Control & Prevention. (2012a). *Binge drinking; Nationwide problem, local solutions.* Retrieved September 17, 2012, from http://www.cdc.gov/vitalsigns/BingeDrinking/index.html

Centers for Disease Control & Prevention. (2012b). *Fact sheets; Binge drinking.* Retrieved September 17, 2012, from http://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm

Centers for Disease Control & Prevention. (2012c). Vital signs: Binge drinking prevalence, frequency, and intensity among adults. *Morbidity and Mortality Weekly Report, 61*(1), 14-19. Retrieved from http://www.cdc.gov/mmwr/PDF/wk/mm6101.pdf

Collis, J., & Hussey, R. (2003). *Business research: A practical guide for undergraduate and postgraduate students* (2nd ed.). New York, NY: Palgrave Macmillan.

Conner, M. (2005). Commentary 2. In K. Tones (Ed.), *The Transtheoretical Model and stages of change: A critique: Observations by five commentators on the paper by Adams, J. and White, M. (2004) Why don't stage-based activity promotion interventions work?* (pp. 247-249). *Health Education Research, 20*(2), 244-258. doi:10.1093/her/cyh005

Conner, M., & Armitage, C. J. (1998). Extending the theory of planned behaviour: A review and avenues for further research. *Journal of Applied Social Psychology, 28*(15), 1429-1464. doi:10.1111/j.1559-1816.1998.tb01685.x

Conner, M., & Sparks, P. (2005). The theory of planned behaviour and health behaviour. In M. Conner & P. Norman (Eds.), *Predicting health behaviour* (pp. 170−222). Buckingham, United Kingdom: Open University Press.

Cooper, M. L., Frone, M. R., Russell, M., & Mudar, P. (1995). Drinking to regulate positive and negative emotions: A motivational model of alcohol use. *Journal of Personality and Social Psychology, 69,* 990-1005. Retrieved from http://www.apa.org/pubs/journals/psp/index.aspx

Corbin, W. (2006). Binge drinking. In D. Salkind, & L. Margolis (Eds.), *Encyclopaedia of human development* (pp. 171-172). Thousand Oaks, CA: Sage Publications.

Cummings, K. M., Jette, A. M., Brock, B. M., & Haefner, D. P. (1979). Psychosocial determinants of immunization behavior in a swine influenza campaign. *Medical Care, 17*(6), 639-649. doi:10.1097/00005650-197906000-00008

Cummings, J. N., Sproull, L., & Kiesler, S. B. (2002). Beyond hearing: Where real-world and online support meet. *Group Dynamics: Theory, Research, and Practice, 6*(1), 78-88. doi:10.1037/1089-2699.6.1.78

D

Davidson, R. (1992). Prochaska and DiClemente's model of change: A case study? *British Journal of Addiction, 87*(6), 821-822. Retrieved from http://www.addictionjournal.org

Daymon, C., & Holloway, I. (2011). *Qualitative research methods in public relations and marketing communications* (2nd ed.). New York, NY: Taylor & Francis.

DiClemente, C., & Prochaska, J. (1998). Toward a comprehensive, transtheoretical model of change. In W. Miller, & N. Heather (Eds.), *Treating addictive behaviors*. NY, New York: Plenum Press.

Doherty, Y., Hall, D., James, P. T., Roberts, S. H., & Simpson, J. (2000). Change counselling in diabetes: The development of a training programme for the diabetes team. *Patient Education and Counseling, 40*(3), 263-278. doi:10.1016/s0738-3991(99)00079-8

Drinkaware (2012). *Binge drinking: The facts.* Retrieved September 17, 2012, from http://www.drinkaware.co.uk/facts/binge-drinking

Dzewaltowski, D. A., Noble, J. M., & Shaw, J. M. (1990). Physical-activity participation - Social cognitive theory versus the theories of reasoned action and planned behavior. *Journal of Sport & Exercise Psychology, 12*(4), 388-405. Retrieved from http://web.ebscohost.com.ezproxy.aut.ac.nz/ehost/pdfviewer/pdfviewer?sid=5a4ee473-225a-4cda-ac29-fc94211b3243%40sessionmgr12&vid=2&hid=8

E

Elo, S., & Kyngas, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing, 62*(1), 107–115. doi: 10.1111/j.1365-2648.2007.04569.x

Engels, R., Wiers, R., Lemmers, L., & Overbeek, G. (2005). Drinking motives, alcohol expectancies, self-efficacy, and drinking patterns. *Journal of Drug Education*, *35*(2), 147-166. Retrieved from http://arno.unimaas.nl/show.cgi?fid=4633

Esser, M. B., Kanny, D., Brewer, R. D., & Naimi, T. S. (2012). Binge drinking intensity: A comparison of two measures. *American Journal of Preventive Medicine, 42*(6), 625-629. doi:10.1016/j.amepre.2012.03.001

Esterling, B. A., L'Abate, L., Murray, E. J., & Pennebaker, J. W. (1999). Empirical foundations for writing in prevention and psychotherapy: Mental and physical health outcomes. *Clinical Psychology Review, 19*(1), 79. Retrieved from: http://www.journals.elsevier.com/clinical-psychology-review/#description

F

Farkas, A. J., Pierce, J. P., Zhu, S.-H., Rosbrook, B., Gilpin, E. A., Berry, C., & Kaplan, R. M. (1996). Addiction versus stages of change models in predicting smoking cessation. *Addiction, 91*(9), 1271-1280. doi:10.1111/j.1360-0443.1996.tb03608.x

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*(2), 117-140. doi:10.1177/001872675400700202

Fink, E., & Gantz, W. (1996). A content analysis of three mass communication research traditions: Social science, interpretive studies, and critical analysis. *Journalism & Mass Communication Quarterly, 73*(1), 114-134. doi:10.1177/107769909607300111

Fishbein, M. (2004). Theory of Reasoned Action. In N. Anderson (Ed.), *Encyclopaedia of Health & Behavior* (Vol. 2, pp. 796-799). Thousand Oaks, CA: Sage Publications.

Fryer, K., Jones, O., & Kalafatelis, E. (2011). *ALAC alcohol monitor - Adults & youth, 2009-10 drinking behaviours report* (Project No. 3846). Retrieved from Alcohol Advisory Council of New Zealand website: http://www.alac.org.nz/sites/default/files/research-publications/pdfs/2009-10-Annual-Summary-Report-FINAL.pdf

G

Gochmann, D. S. (1997). Health behavior research: Definitions and diversity. In D. S. Gochmann (Ed.), *Handbook of health behavior research I: Personal and social determinants* (pp. 3–20). New York, NY: Plenum.

Gordon, A., & Miller, J. L. (2005). *When stereotypes collide: Race/ethnicity, gender, videostyle, and congressional campaigns*. New York, NY: Peter Lang.

Graneheim, U. H., Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today, 24*(2), 105-112. doi:10.1016/j.nedt.2003.10.001

Greene, G. W., & Rossi, S. R. (1998). Stages of change for reducing dietary fat intake over 18 months. *Journal of the American Dietetic Association, 98*(5), 529-534. doi:10.1016/s0002-8223(98)00120-5

H

Harré, N. (2005). Commentary 3. In K. Tones (Ed.), *The Transtheoretical Model and stages of change: A critique: Observations by five commentators on the paper by Adams, J. and White, M. (2004) Why don't stage-based activity promotion interventions work?* (pp. 250-251). *Health Education Research, 20*(2), 244-258. doi:10.1093/her/cyh005

Harrison, J. A., Mullen, P. D., & Green, L. W. (1992). A meta-analysis of studies of the Health Belief Model with adults. *Health Education Research, 7*(1), 107-116. doi:10.1093/her/7.1.107

Herring, R., Berridge, V., & Thom, B. (2008). Binge Drinking: An exploration of a confused concept. *Journal of Epidemiology and Community Health, 62*(6), 476-479. doi:10.1136/jech.2006.056721

Hochbaum, G. M. (1958). *Public Participation in Medical Screening Programs: A Socio-psychological Study* (Public Health Service Publication No. 572). Washington, DC: Government Printing Office.

Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, *15*(9), 1277-1288. doi:10.1177/1049732305276687

I

Im, E.-O., & Chee, W. (2006). An online forum as a qualitative research method: Practical issues. *Nursing Research, 55*(4), 267-273. doi:10.1097/00006199-200607000-00007

Institute of Alcohol Studies. (2007). *Binge drinking – Medical and social consequences*. (PE27 5AR). Retrieved from www.ias.org.uk/resources/factsheets/binge_drinkingmed.pdf

J

Janz, N. K., & Becker, M. H. (1984). The Health Belief model: A decade later. *Health Education Quarterly*, *11*(1), 1-47. doi:10.1177/109019818401100101

Johnston, K. L., & White, K. M. (2003). Binge-drinking: A test of the role of group norms in the theory of planned behaviour. *Psychology & Health, 18*(1), 63-77. doi:10.1080/0887044021000037835

Jones, H., Edwards, L., Vallis, T. M., Ruggiero, L., Rossi, S., Rossi, J. S.,… Zinman, B. (2003). Changes in diabetes self care behaviours make a difference in glycemic control. *Diabetes Care, 26*(3), 732-737. doi:10.2337/diacare.26.3.732

Joseph, D. H., Griffin, M., Hall, R. F., & Sullivan, E. D. (2001). Peer coaching: An intervention for individuals struggling with diabetes. *The Diabetes Educator, 27*(5), 703-710. doi:10.1177/014572170102700511

K

Kasila, K., Poskiparta, M., Karhila, P., & Kettunen, T. (2003). Patients' readiness for dietary change at the beginning of counselling: A transtheoretical model-based assessment. *Journal of Human Nutrition and Dietetics: The Official Journal of the British Dietetic Association, 16*(3), 159-166. doi:10.1046/j.1365-277X.2003.00437.x

Krippendorff, K. (2004). *Content analysis: An introduction to its methodology*. Thousand Oaks, CA: Sage Publications.

L

Lang, A. R., Patrick, C. J., & Stritzke, W. G. K. (1999). Alcohol and emotional response: A multidimensional-multilevel analysis. In K. E. Leonard & H. T. Blane (Eds.), *Psychological theories of drinking and alcoholism* (2nd ed., pp. 328–371). New York, NY: Guilford Press.

Lange, E. J., & Voas, B. R. (2001). Defining binge drinking quantities through resulting blood alcohol concentration. *Association for the Advancement of Automotive Medicine, 44*, 389–406. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3217392/

Langlie, J. K. (1977). Social networks, health beliefs, and preventive health behavior. *Journal of Health and Social Behavior, 18*(3), 244-260. Retrieved from: http://www.jstor.org/stable/2136352

Latvala, E., Janhonen, S., & Moring, J. (2000). Passive patients: A challenge to psychiatric nurses. *Perspectives in Psychiatric Care, 36*(1), 24-32. doi:10.1111/j.1744-6163.2000.tb00686.x

Lechner, L., Brug, J., De Vries, H., van Assema, P., & Mudde, A. (1998). Stages of change for fruit, vegetable and fat intake: Consequences of misconception. *Health Education Research, 13*(1), 1-11. doi:10.1093/her/13.1.1-a

Lee, J. G. L., Griffin, G. K., & Melvin, C. L. (2009). Tobacco use among sexual minorities in the USA, 1987 to May 2007: A systematic review. *Tobacco Control*, 18(4), 275-282. doi:10.1136/tc.2008.028241

Leimeister, J. M., & Krcmar, H. (2005). Evaluation of a systematic design for a virtual patient community. *Journal of Computer-Mediated Communication, 10*(4). doi:10.1111/j.1083-6101.2005.tb00269.x

M

Manstead, A. S., Proffitt, C., & Smart, J. L. (1983). Predicting and understanding mothers' infant-feeding intentions and behavior: Testing the theory of reasoned action. *Journal of Personality and Social Psychology, 44*(4), 657-671. doi:10.1037/0022-3514.44.4.657

Manstead, A. S. R., & van Eekelen, S. A. M. (1998). Distinguishing between perceived behavioral control and self-efficacy in the domain of academic achievement intentions and behaviors. *Journal of Applied Social Psychology, 28*(15), 1375-1392. doi:10.1111/j.1559-1816.1998.tb01682.x

Matterne, U., Diepgen, T. L., & Weisshaar, E. (2011). A longitudinal application of three health behaviour models in the context of skin protection behaviour in individuals with occupational skin disease. *Psychology & Health, 26*(9), 1188-1207. doi:10.1080/08870446.2010.546859

Mau, M. K., Glanz, K., Severino, R., Grove, J. S., Johnson, B., & Curb, J. D. (2001). Mediators of lifestyle behavior change in native Hawaiians: Initial findings from the native Hawaiian diabetes intervention program. *Diabetes Care, 24*(10), 1770-1775. doi:10.2337/diacare.24.10.1770

Mayring, P. (2000). Qualitative content analysis. *Qualitative Social Research, 1*(2). Retrieved from http://www.qualitative-research.net/fqstexte/2-00/2-00mayring-e.htm

McAllister, P. (2012). *Society at a loss to explain binge drinking problems*. Retrieved February 02, 2013 from http://www.scoop.co.nz/stories/PO1211/S00197/society-at-a-loss-to-explain-binge-drinking-problems.htm

McEachan, R. R. C., Conner, M., Taylor, N. J., & Lawton, R. J. (2011). Prospective prediction of health-related behaviours with the Theory of Planned Behaviour: A meta-analysis. *Health Psychology Review, 5*(2), 97-144. doi:10.1080/17437199.2010.521684

McKellar, S. (2005). Commentary 4. In K. Tones (Ed.), *The Transtheoretical Model and stages of change: A critique: Observations by five commentators on the paper by Adams, J. and White, M. (2004) Why don't stage-based activity promotion interventions work?* (pp. 251-253). *Health Education Research, 20*(2), 244-258. doi:10.1093/her/cyh005

Miller, N. H., Hill, M., Kottke, T., & Ockene, I. S. (1997). The multilevel compliance challenge: Recommendations for a call to action. A statement for healthcare professionals. *Circulation, 95*(4), 1085-1090. doi:10.1161/01.cir.95.4.1085

Monahan, J., & Lannutti, P. (2000). Alcohol as social lubricant: Alcohol myopia theory, social self-esteem, and social interaction. *Human Communication Research, 26*(2), 175-202. doi:10.1093/hcr/26.2.175

Moore, L., Smith, C., & Catford, J. (1994). Binge drinking - Prevalence, patterns and policy. *Health Education Research, 9*(4), 497-505. doi:10.1093/her/9.4.497

N

Naimi, T. S., Brewer, R. D., Mokdad, A., Denny, C., Serdula, M. K., & Marks, J. S. (2003). Binge drinking among US adults. *JAMA : The Journal of the American Medical Association, 289*(1), 70-75. doi: 10.1001/jama.289.1.70

Naimi, T. S., Nelson, D. E., & Brewer, R. D. (2010). The intensity of binge alcohol consumption among U.S. adults. *American Journal of Preventive Medicine, 38*(2), 201-207. doi:10.1016/j.amepre.2009.09.039

National Cancer Institute. (2005). Theory at a glance: A guide for health promotion practice (NIH Publication No. 05-3896). Retrieved from http://www.cancer.gov/cancertopics/cancerlibrary/theory.pdf

National Health Services. (2010). *Binge drinking*. Retrieved from http://www.nhs.uk/livewell/alcohol/pages/bingedrinking.aspx

Naylor, P. J., Simmonds, G., Riddoch, C., Velleman, G., & Turton, P. (1999). Comparison of stage-matched and unmatched interventions to promote exercise behaviour in the primary care setting. *Health Education Research, 14*(5), 653-666. doi:10.1093/her/14.5.653

Neuendorf, K. A. (2002). *The content analysis guidebook*. Thousand Oaks, CA: Sage Publications.

Nigg, C. R., Allegrante, J. P., & Ory, M. (2002). Theory-comparison and multiple-behavior research: Common themes advancing health behavior research. *Health Education Research, 17*(5), 670-679. doi:10.1093/her/17.5.670

Noar, S. M., & Zimmerman, R. S. (2005). Health behavior theory and cumulative knowledge regarding health behaviors: Are we moving in the right direction? *Health Education Research, 20*(3), 275-290. doi:10.1093/her/cyg113

P

Palfai, T. P., & Ostafin, B. D. (2003). Alcohol-related motivational tendencies in hazardous drinkers: Assessing implicit response tendencies using the modified-IAT. *Behaviour Research and Therapy, 41*(10), 1149-1162. doi:10.1016/s0005-7967(03)00018-4

Partyvibe.com, 1997-2013. (n.d.). Retrieved from http://www.partyvibe.com/

Patton, R. (n.d.). *Binge drinking.* Retrieved February 9, 2013 from http://www.bbc.co.uk/health/emotional_health/addictions/aboutaddiction_drinking.shtml

Payne, B. K., Govorun, O., & Arbuckle, N. L. (2008). Automatic attitudes and alcohol: Does implicit liking predict drinking? *Cognition & Emotion, 22*(2), 238-271. doi:10.1080/02699930701357394

Pfeil, U., & Zaphiris, P. (2010). Applying qualitative content analysis to study online support communities. *Universal Access in the Information Society, 9*(1), 1-16. doi:10.1007/s10209-009-0154-3

Popping, R. (2000). *Computer-assisted text analysis.* Trowbridge, England: Sage Publications.

Potter, W. J., & Levine-Donnerstein, D. (1999). Rethinking validity and reliability in content analysis. *Journal of Applied Communication Research*, *27*(3), 258-284. Retrieved from http://www.tandfonline.com/loi/rjac20

Preece, J., & Maloney-Krichmar, D. (2005). Online communities: Design, theory, and practice. *Journal of Computer-Mediated Communication, 10*(4). doi:10.1111/j.1083-6101.2005.tb00264.x

Prochaska, J. O., & DiClemente, C. C. (1982). Transtheoretical therapy: Toward a more integrative model of change. *Psychotherapy: Theory, Research & Practice, 19*(3), 276-288. doi:10.1037/h0088437

Prochaska, J. O., & DiClemente, C. C. (1983). Stages and processes of self-change of smoking: Toward an integrative model of change. *Journal of Consulting and Clinical psychology, 51*(3), 390-395. doi:10.1037/0022-006x.51.3.390

Prochaska, J. O., DiClemente, C. C., & Norcross, J. C. (1992). In search of how people change: Applications to addictive behaviors. *The American Psychologist, 47*(9), 1102-1114. doi:10.1037/0003-066x.47.9.1102

Prochaska, J. O., & Velicer, W. F. (1997). The transtheoretical model of health behavior change. *American Journal of Health Promotion, 12*(1), 38-48. Retrieved from http://www.healthpromotionjournal.com

Q

Quigley, L. A., & Marlatt, G. A. (1996). Drinking among young adults. *Alcohol Health and Research World, 20*(3), 185-191. Retrieved from http://www.niaaa.nih.gov/publications/journals-and-reports/alcohol-research-health

R

Redding, A. C., Rossi, S. J., Rossi, R. S., Velicer, F. W., & Prochaska, O. J. (2000). Health behavior models. *The International Electronic Journal of Health Education, 3,* 180-193. Retrieved from http://www.aahperd.org/aahe/publications/iejhe/

Rheingold, H. (2000). *The virtual community: Homesteading on the electronic frontier*. Cambridge, MA: MIT Press.

Riffe, D., Lacy, S., & Fico, F. (2005). *Analyzing media messages: Using quantitative content analysis in research.* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum.

Rimer, K. B. (2008). Models of individual health behaviour. In K. Glanz, K. Rimer & K. Viswanath (Eds.), *Health behavior and health education: Theory, research, and practice* (4th ed., pp. 41-44). San Francisco, CA: Jossey-Bass.

Rosenstock, I. M. (1966). Why people use health services. *The Milbank Memorial Fund Quarterly, 44*(3), 94-127. Retrieved from http://www.jstor.org.ezproxy.aut.ac.nz/stable/10.2307/3348967?origin=api

Rosenstock, I. M. (1974). Historical origins of the health belief model. *Health Education Monographs, 2*, 328-335. doi: 10.1177/109019817400200403

Rosenstock, I. M. (1990). The health belief model: Explaining health behaviour through expectancies. In K. Glanz, M. Lewis & K. Rimer (Eds.). *Health behaviour and health education: Theory, research, and practice* (pp. 39-62). San Francisco, CA: Jossey-Bass.

Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1988). Social learning theory and the Health Belief Model. *Health Education Quarterly, 15*(2), 175-183. Retrieved from http://heb.sagepub.com.ezproxy.aut.ac.nz/content/15/2/175.full.pdf+html

Rundall, T. G. (1979). The effect of income on use of preventive care: An evaluation of alternative explanations. *Journal of Health and Social Behavior*, 20(4), 397-406. Retrieved from: http://www.jstor.org/stable/2955414

S

Safko, L., & Brake, D. K. (2009). *The social media bible: Tactics, tools and strategies for business success*. Hoboken, NJ: John Wiley.

Sandelowski, M. (2000). Focus on research methods: Whatever happened to qualitative description? *Research in Nursing & Health*, *23*(4), 334–340. Retrieved from http://onlinelibrary.wiley.com.ezproxy.aut.ac.nz/doi/10.1002/1098-240X(200008)23:4%3C334::AID-NUR9%3E3.0.CO;2-G/pdf

Sheeran, P. (2002). Intention—behavior relations: A conceptual and empirical review. *European Review of Social Psychology, 12*, 1-36. doi:10.1080/14792772143000003

Sheeran, P., & Abraham, C. (1996). The health belief model. In M. Conner & P. Norman (Eds.), *Predicting health behaviour* (pp. 23-61). Buckingham, UK: Open University Press.

Smith, G. (2012). *How you drink alcohol can affect your health as much as the quantity you consume.* Retrieved on February 02, 2013 from http://www.dailymail.co.uk/health/article-2152635/How-drink-alcohol-affect-health-quantity-consume.html#axzz2KNal76qW

Stacks, D. W. (2002). *Primer of Public Relations Research*. London, England: The Guilford Press.

Stemler, S. (2001). An overview of content analysis. *Practical Assessment, Research & Evaluation, 7*(17). Retrieved November 4, 2012 from http://PAREonline.net/getvn.asp?v=7&n=17

Sterne, J. (2010). *Social media metrics: How to measure and optimize your marketing investment.* Hoboken, NJ: John Wiley.

Stewart, D. W., Shamdasani, P. N., & Rook, D. W. (2007). *Focus groups: Theory and practice* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Strecher, V. J., & Rosenstock, I. M. (1997). The health belief model. In K. Glanz, M. Lewis, & K. Rimer (Eds.), *Health behavior and health education: Theory, research, and practice* (2nd ed., pp. 41-59). San Francisco, CA: Jossey-Bass.

Stroebe, W. (2011). *Social Psychology and Health* (3rd ed.). Buckingham, PA: McGraw-Hill International.

Suler, J. (2004). The online disinhibition effect. *Cyberpsychology & Behavior, 7*(3), 321-326. Retrieved from http://www.samblackman.org/Articles/Suler.pdf

Sutton, S. (2000). Interpreting cross-sectional data on stages of change. *Psychology & Health, 15*(2), 163-171. doi:10.1080/08870440008400298

T

Thomsen, S. R., Straubhaar, J. D., Bolyard, D. M. (1998). Ethnomethodology and the study of online communities: Exploring the cyber streets. *Information Research*, *4*(1). Retrieved from http://informationr.net/ir/4-1/paper50.html

Tongco, M. (2007). Purposive sampling as a tool for informant selection. *Ethnobotany Research and Applications, 5*, 147-158. Retrieved from http://www.ethnobotanyjournal.org/

Tonnies, F. (1955). *Community and association (gemeinschaft und gesellschaft) translated and supplemented by Charles P. Loomis*. London, England: Routledge and Paul.

Trochim, W. (2006). *Nonprobability Sampling*. Retrieved November 10, 2012, from http://www.socialresearchmethods.net/kb/sampnon.php

W

Weare, C., & Lin, W. (2000). Content analysis of the world wide web: Opportunities and challenges. (2000). *Social Science Computer Review, 18*(3), 272-292. doi:10.1177/089443930001800304

Weber, R. P. (1990). *Basic content analysis* (2nd ed.). Newbury Park, CA: Sage Publications.

Wechsler, H., & Nelson, T. F. (2001). Binge drinking and the American college students: What's five drinks? *Psychology of Addictive Behaviors*, *15*(4), 287-291. doi:10.1037/0893-164x.15.4.287

Weinberger, M., Greene, J. Y., Mamlin, J. J., & Jerin, M. J. (1981). Health beliefs and smoking behavior. *American Journal of Public Health*, *71*(11), 1253-1255. doi:10.2105/ajph.71.11.1253

White, M., & Dorman, S. M. (2001). Receiving social support online: Implications for health education. *Health Education Research, 16*(6), 693-707. doi:10.1093/her/16.6.693

Whitelaw, S. (2005). Commentary 5. In K. Tones (Ed.), *The Transtheoretical Model and stages of change: A critique: Observations by five commentators on the paper by Adams, J. and White, M. (2004) Why don't stage-based activity promotion interventions work?* (pp. 253-256). *Health Education Research, 20*(2), 244-258. doi:10.1093/her/cyh005

Whitelaw, S., Baldwin, S., Bunton, R., & Flynn, D. (2000). The status of evidence and outcomes in stages of change research. *Health Education Research, 15*(6), 707-718. doi: 10.1093/her/15.6.707

Wicker, A. W. (1969). Attitudes versus reactions: The relationship of verbal and overt behavioral responses to attitude objects. *Journal of Social Issues, 25*(4), 41-78. doi:10.1111/j.1540-4560.1969.tb00619.x

REFERENCES

Wills, T. A., & Shiffman, S. (1985). Coping and substance use: A conceptual framework. In S. Shiffman & T. A. Wills (Eds.), *Coping and substance use* (pp. 3–24). Orlando, FL: Academic Press.

Wise, R. A. (1988). The neurobiology of craving: Implications for the understanding and treatment of addiction. *Journal of Abnormal Psychology, 97*(2), 118-132. doi:10.1037/0021-843x.97.2.118

Woody, G. E., Urschel, H. C., & Alterman, A. (1992). The many paths to drug dependence. In M. Glantz & R. Pickens (Eds.), *Vulnerability to drug abuse* (pp. 491–507). Washington, DC: American Psychological Association.