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4.3 International consumption rates

Therefore to gain a comprehensive understanding of the consumption rates by university students, one must consider the differences between university students in the UK and universities throughout the whole world. This may identify differences between high income countries and low income countries as well as different cultures. Since 2000 there has been a marked increase in studies undertaken examining alcohol consumption rates in other countries because, up until recently, the only studies of this kind have only been undertaken in the USA and the UK. From the research undertaken the results show that many of the countries, especially western countries, have similar rates of alcohol consumption and binge drinking rates to the UK rates. Countries which have similar cultures to the UK, such as Australia, Canada and the USA all report that approximately half of university students exceed their recommended weekly limits (Kuo et al, 2002; Roche and Watt, 1999). However, the recommended weekly limits may be different in each country so this should be taken into consideration.

In Australia it was found that 54% of students binge drink and within that sample 69% drink to hazardous levels (Roche and Watt, 1999) and in the USA and Canada 54% and 42% of students, respectively, binge drink (Kuo et al, 2002). These binge drinking rates are supported by Kairouz et al (2002) but Balodis (2009) disagreed with the Canadian binge drinking rates, suggesting that 72% of students binge drink. This would mean that Canadian students have the highest binge drinking rates in the world out of the studies currently undertaken. Within these countries, the different ethnic minorities must be taken into consideration as it may affect the results of a study. One study which highlighted the differences between minorities found that African-American students reported lower rates of binge drinking than Caucasian students (Siebert et al, 2003).

In other European countries, such as Poland, France, Lithuania and Italy, alcohol consumption rates appear to be generally lower than UK consumption rates (Stock et al, 2009; D'Alessio et al, 2006) Although Poland has low levels of binge drinking and daily drinking, 91.6% of the student population drink alcohol on weekly basis (Popova et al, 2007). It is explained that the low levels of binge drinking may be a reflection of Poland's traditional position as a spirits drinking country with irregular binge drinking episodes (Popova et al, 2007). The country in Europe which appears to have the lowest rates of alcohol consumption is Turkey with only 10.2% reported to have drunk at least 12 alcoholic drinks during the preceding twelve months and 3.2% who have undertaken heavy drinking (Kaya, 2002). The type of alcoholic drink which was consumed was not identified which is a weakness of this study. The consumption rates could be due to Turkey having a predominately Islamic population where consuming alcohol is forbidden. However, Ilhan et al (2008) found that 65% of the student population in Turkey had been out drinking at least once a month.

From the countries investigated, Germany appears to have similar binge drinking rates with 61% of students reported to binge drink on a weekly basis (Keller et al, 2000). In Germany there also appears to be a wide difference between students and the general population with 30.1% of students drinking heavy levels compared to 8.1% (Bailer, 2009). Students in Spain and Bulgaria have also been reported to have similar drinking levels to the UK and Germany with approximately 55% of students in Bulgaria and 61% in Spain drinking more than once a week (Stock et al, 2009). From a worldwide study on binge drinking in university students, Dantzer et al (2006) reported that the country with the highest prevalence of binge drinking in university students' is Ireland with 95% of men and 93% of women describing themselves as regular consumers of alcohol.

Non-western countries appear to have much lower alcohol consumption rates by university students supporting the evidence that the proportion of alcohol consumed is positively correlated with the national GDP of that country (Dantzer et al, 2006). This

is shown in that South Africa was found to have the lowest alcohol consumption rates out of a study of 21 countries with 29% of men and 6% of women consuming alcohol on a weekly basis (Dantzer et al, 2006). On the other hand, this is disputed by Chun and Sohn (2005) who found that 42.3% of students in Korea had a problem with alcohol consumption and Martinez (2008) found that one in three university males binge drinks regularly in Mexico and one in five women. Neither of these countries have high GDP in comparison with other countries in the world. However, in Hong Kong , a country that has a very low GDP, it has been found that there are very low rates of binge drinking with only 7% of university students admitting to taking part in this activity (Griffiths et al, 2006).

4.4 Conclusion

In the UK, binge drinking amongst students has been found to be the most common drinking behaviour undertaken. However, research has shown that the rates have decreased since the 1980's when rates were highest. Heavy drinking is a significant problem in the UK in recent years but there appears to be discrepancies in the research. Countries with similar cultures to the UK have been shown to have similar rates of alcohol consumption to the UK and research has shown that drinking behaviour may be directly related to a countries GDP and culture. Consequently, one must consider other aspects which may influence the reported alcohol consumption rates by university students in order to understand the subject fully.

Chapter Five: Influencing factors in alcohol consumption by university students

5.1 Introduction

The factors which influence university students to consume high levels of alcohol should be understood. If the factors are understood, health professionals and policy makers can implement policies in order to promote sensible drinking amongst students. From the literature search, 116 research papers and studies were identified as relevant for this chapter and they were grouped into five themes; biological, developmental psychological, sociological and environmental factors.

5.2 Biological and Physical Factors

When considering the factors which influence alcohol consumption in university students, several studies have focused on physiological and genetic risk factors due to, during the transition from childhood to adulthood, biological factors becoming obvious as risk factors for the use of alcohol (Baer, 2002). Research undertaken in this area has identified certain alleles have been associated with students consuming less alcohol than other students in which the allele is not present. Wall et al (2005) identified that university students presenting with the Alcohol Dehydrogenase gene polymorphisms (AD1HB*2) allele have lower rates of alcohol use disorders (AUD's) and consume lower amounts of alcohol in general. Participants in the sample reported more severe hangovers than those lacking this allele (Wall et al, 2005) which suggests that ADH1HB*2 allele protects against excessive alcohol consumption. The aldehyde dehydrogenase (ALDH2) is another enzyme which has been identified as having a clear association with alcohol drinking behaviour in university students (Takeshita and Morimoto, 1999). The gene for this enzyme is altered in the majority of Asians and nearly half of the Japanese population and it results in the acetaldehyde not being efficiently metabolized causing an alcohol-flush reaction (Luczak et al, 2001)

This adverse reaction may be protective against the use of alcohol by university students.

Previous studies had suggested that serum beta-HEX was a possible indicator for heavy drinking in university but findings from a study by Nystrom et al (1991) found that it did not correlate to high levels of drinking in university students'. One protein which has been identified as having different effects depending on the gender of students is carbohydrate-deficient transferrin (CDT) in serum. CDT has been identified as a possible marker for high levels of drinking in students. In Nystrom et al's (1992) study it was found in males the levels of CDT was significantly higher in heavy drinkers compared to social drinkers whereas in females CDT levels did not differ significantly between heavy drinkers and social drinkers. These results show that gender differences need to be studied further in other genes and enzymes identified as affecting alcohol consumption in university students.

Age of the individual could be considered as a factor as it is thought that as students' age increases their alcohol consumption rates decrease. This has been supported by Engs and Vanteijilingen, (1997) who found that younger students consume alcohol at a heavier level than older students. Gliksman et al (1997) also found that older students are less likely to consume high levels of alcohol. On the other hand the year of study that the student is currently undertaking may have an influence. As the student progresses through university their age will obviously increase and as university progresses the importance and workload increases. Bewick et al (2008) reported that university students consume significantly more units of alcohol per week in the first year than the other two years of university. However, Pastor et al (2009) only found a difference of 0.5% between first and final year students with 81.6% of first year students consuming alcohol regularly compared to 81.1% of final year students. Nevertheless, the age aspect may not have much relevance in this research project and may not be accurately reported on, as the literature search only examined

alcohol use in the 18-24 age group so does not take into consideration mature students.

One important factor which should always be taken into account in terms of university student's consumption levels is gender. This is due to distinct physiological differences between men and women (Wagner et al, 2007). For this reason research undertaken on both male and female students should report the differences. However, despite the majority of studies reporting both sets of results, some studies do not report differences. Therefore, the reader should be aware that a comprehensive overview of alcohol consumption may not be given. Studies undertaken on gender differences appear to report that male students consume more alcohol and are more likely to have problems with it (Chun and Sohn, 2005; Stock et al, 2009; Gliksman et al, 1997; Kercher, 2000). This means that simply being male is a risk factor for increased alcohol consumption.

One gender specific factor which has been found as a potential reason which may influence alcohol consumption is premenstrual tension (PMT). It was found, from a sample of 193 female university students', that PMT severity significantly predicted weekday alcohol consumption by female students as a treatment for its symptoms (Perry et al, 2004). From reviewing the literature, the influence of physiological aspects on students' drinking behaviour does not appear to have been examined fully.

It is important for nurses to have knowledge of biological and genetic factors but it is almost impossible for these factors to be changed. However one should also consider factors may influence students' drinking behaviours before they enter university as these could be changed.

5.3 Family Background and Developmental Factors

Researchers have investigated the links between family drinking history and alcohol use. Blue (1999) found that a family history of alcoholism had a significant effect on alcohol related problems and high levels of alcohol consumption by university students. An earlier study also identified that students with alcohol-dependent parents or whose childhood had been disrupted by parental alcohol use were more likely to have a problem with drinking (Perkins and Berkowitz, 1991). However, Wilson (1995) found that family alcohol use did not have any significant effect on alcohol use by students' and Engs (1990) stated that it is difficult to interpret the connection between students' alcohol use and their families' alcohol use. If a student comes from a background with high family conflict it appears to have a significant effect on alcohol use but this is not necessarily related to the parent's marital status (Blue, 1999). There also appears to be gender differences between the effect of family alcohol problems and consumption with males reporting higher levels of alcohol problems when parents had a problem with alcohol compared to females (Blue, 1999). More recent studies need to be undertaken on this aspect as all the studies found were at least ten years old and may be outdated.

Being a university student may not exclusively be the cause of the use of alcohol by students and it is essential that student's previous alcohol use is investigated. White and Swartzwelder (2009) found that many students bring their alcohol consumption habits with them to university and this was supported by other studies which found that drinking in high school is a significant predictor for this behaviour being continued when arriving at university (Reis and Riley, 2000; Yu and Shacket, 2001). This evidence is useful for nurses when considering health promotion and suggests that education regarding sensible drinking should be targeted at schools. As well as examining students' drinking behaviours before they enter university, one should understand the factors which influence students' alcohol use when they begin university.

5.4 Psychological and Cognitive Factors

When students arrive at university they undergo many changes in terms of their beliefs, behaviour and identities (Schulenberg and Maggs, 2002). Health promoters need to identify what psychological and cognitive factors have been shown to increase the risk of problems with alcohol before behaviour can be changed. From the literature search undertaken, there appears to be a large amount of evidence found on students psychological and cognitive well being and how it influences consumption rates. A number of personality traits have been associated with students drinking greater amounts of alcohol and drinking more often.

Sensation seeking, impulsivity and risk taking are all personality traits that appear to predict high rates of alcohol consumption (Arnett, 2005). This is supported by Cyders et al (2009) who, found from a sample of 418 first year students, that the sensation seeking trait is a risk factor for participation in drinking by students. This could explain why, on average, consumption rates are higher in students when compared to peers of similar age who do not attend university. In theory a student who moves away from home, a risky action, may have a personality disposition which predisposes them to being more likely to consume high levels of alcohol. However, the study undertaken by Cyders et al (2009) measured the levels of sensation seeking based on self-reports by the students and the students' may have exaggerated their behaviours.

The feeling of invincibility is another personality trait which is common among young adults, including university students (Arnett, 2005). This means that students do not view themselves as vulnerable to the short term or long term negative consequences that could occur from excessive alcohol use. Thakore et al (2009) found if there is a low belief that alcohol has negative health consequences there is an increased risk of high levels of drinking. This optimistic outlook makes students more likely to take risks and drink excessively and it has been found that the decision to drink is

influenced more by the perceived benefits than by the perceived risks. (Goldberg et al, 2002)

Positive beliefs and high expectancy of its effects appear to affect students' decisions to consume alcohol. Studies undertaken on this subject have found that the more positive the alcohol expectancies are the higher levels of alcohol use or the higher the AUDIT scores are (Kercher, 2000; Young et al, 2006; Molnar et al, 2009). This has been supported by research that students drink alcohol more for celebratory reasons, such as birthdays, than to cope with negative feelings (Read et al, 2003). Cronin (1996) found that positive events, such as spring break in the USA, are associated with excessive alcohol use and Oster-Aaland et al (2009) supported this by finding that students consume larger amounts of alcohol during the week of their birthdays. However, there are cultural differences with higher rates of students from the USA drinking for celebratory reasons than students in Japan (Nagoshi et al, 1994). It has also been suggested that, if prior drinking experience is positive, alcohol-cue elicited positive semantic memory networks are activated and are directly related to high levels of drinking in students (O'Connor and Colder, 2009). Although it is suggested that positive feelings influence higher drinking rates in students, than negative feelings do, there is a vast amount of research on negative emotions which suggests otherwise.

Drinking to alleviate negative mood is one motivation which has been documented and studies undertaken examining this behaviour by students have found negative moods, feelings of depression and anxiety disorders influence higher alcohol use (Lawyer et al, 2002; Jackson et al, 2005; Stock et al, 2009). Lawyer et al (2002) found that the relation between negative mood and consuming higher levels of alcohol was stronger in males than females. However Eggleston et al (2004) found that social anxiety and negative mood was related to decreased alcohol consumption by both men and women.

The transition from school to university is often a time of stress and anxiety for many individuals and during the students' time at university there are often times of pressure and tension. For example, exam period is a particularly stressful period (Noel and Cohen, 1997) and it has been found that students drink to relieve tension (Ginn, 2004). It has been hypothesised that following the simple tension reduction theory during the week before exams, when students experience an increase in aversive emotions, alcohol use should increase (O'Hare, 1990). This has been supported by Cooper et al (2000) who found that nineteen to twenty-four year old students drink to relieve feelings of stress. However, a study undertaken by Noel and Cohen (1997) found that student's alcohol use decreased during the week before. Another argument, however, suggests that students' who place low importance on their studies and grades consume more alcohol (Stock et al, 2009) than those who have high goals and expectations of their achievements (Ginn, 2004).

The "drinking to cope" hypothesis is another theory which has been studied extensively in relation to explaining why students consume high levels of alcohol. The coping motives for drinking have emerged as important predictors of drinking behaviour in university students' who are experiencing academic or social anxiety (Ham et al, 2007) This hypothesis is supported by various studies (Kirdorf and Lang, 1999; Martens et al, 2008; Kercher, 2000) which have all found that students consume more alcohol during a socially stressful situation than during a neutral session. Gender differences have also been identified in relation to "drinking to cope" with male students relying on alcohol to cope more than women do (Park and Levenson, 2002) and aim to increase assertiveness (Kirdorf and Lang, 1999). Drinking to cope may be more apparent in students than the general population due to the socially stressful situation that they enter into when they begin university in which they meet new people and experience unknown environments.

General life satisfaction and control over life appear to be other crucial factors in predicting student's alcohol consumption rates. Research has found that there are

gender differences with women undertaking high levels of consumption if they are unsatisfied with life and their future expectations (Murphy et al, 2005). Men, on the other hand, consume higher levels if they are unsatisfied with their social situation (Murphy et al, 2005). If both sexes are unsatisfied with their educational achievement they are 1.27 times more likely to engage in excessive drinking (Chun and Sohn, 2005). However, Chun and Sohn's (2005) study was undertaken in Korea so may not be culturally relevant to western culture. If the student is unsatisfied with their life and do not feel that they have control over it, studies have found that they are more likely to engage in binge drinking activity (Shamloo and Cox, 2010; Sun and Longazel, 2008; Aranowska, 1994). Relationship satisfaction and relational health also moderates the amount of alcohol consumed by students. Labrie et al (2007) found that those with strong relationships drank lower amounts and experienced fewer negative consequences.

It should be considered whether a high level of alcohol consumption becomes a habit by students when associated with undertaking certain activities. Sheeran et al (2005) supports this who found that when habits associated with drinking, such as socialising, are established the drinking behaviour is activated. This can create an alcohol identity and a preoccupation with alcohol which has been predicted to influence alcohol use (Fillmore, 2001; Casey and Dollinger, 2007).

This preoccupation with alcohol can create cognitive dysfunction as prolonged alcohol use can impair responses in the impulsive systems. The impulsive system generates automatic impulses to drink alcohol but when a dysfunction occurs the individual is unable to inhibit these impulses (Houben and Wiers, 2009). The theory of craving is another cognitive action which has been associated with alcohol use in students. Rosenberg and Mazzola (2007) measured self-reported craving of 112 students using questionnaires based on the Penn Alcohol Craving scale and found that craving is associated with students who take part in binge drinking. They also found that craving

was often reported among males more than females suggesting gender differences in the cognitive system (Rosenberg and Mazzola, 2007).

Psychological and cognitive factors are useful to recognize and by understanding these aspects, nurses can comprehend why individual students' may drink. It may be possible to influence these factors by implementing counselling sessions for students' who are experiencing negative emotions and high stress. However, it would be naive to believe that student's alcohol use is solely related to individual factors as a large amount of research has been undertaken studying the influence of peers and other social aspects of a student's life. The norms, beliefs and morals governing student culture are influential and play a major part in predicting why university students consume high levels of alcohol.

5.5 Sociological Factors

There is a theory that consuming high levels of alcohol is considered a "student rite of passage" so students enter university with the belief that consuming alcohol is the norm (Carpenter et al, 2008). For this reason, many researchers have studied the influence of perceived alcohol peer norms or normative beliefs and how the influence of peers and other students cause the individual student to consume high levels of alcohol. Classic theories and research in social psychology have long argued that several factors conspire to move individuals to perceive their world as the group does and therefore adopt group attitudes and act in accordance with peers expectations and behaviours. This peer influence may be particularly crucial in university where socialization is "peer intensive" due to students lacking frequent contact with family and other reference groups, such as religious groups or the local community (Perkins, 1997). This means that peers become crucial in defining attitudes and behaviours.

Various studies have identified that the perceived alcohol use by peers is a strong predictor for student's personal alcohol use (Ham and Hope, 2005; Yanovitzky et al, 2006; Mcalaney and McMahan, 2007). The closer the relationship is the stronger the

influence is, as it has been found that best friends alcohol use influences drinking behaviour much more than distant peers alcohol use does (Yanovitzky et al, 2006). It appears that there are individual differences associated with how influential the peers drinking behaviour is. Some studies have identified gender differences with a study undertaken by Jamison and Myers (2008) finding that male students are more influenced by perceived peer drinking norms than females. However, Mcalaney and McMahon (2007) found that peer drinking behaviour was no different between the two genders. There is a theory that women feeling pressured to drink to the same levels as their male peers in order to provide them with a sense of equality (Young et al, 2005). However, this "drinking like a guy" behaviour could be associated more with women emphasizing their heterosexuality to their male peers and creating positive attention from the opposite sex (Young et al, 2005).

Peer influence, moreover, is not necessarily negative as peer pressure may discourage alcohol use depending on one's peer group. Peer groups set standards of acceptable and valuable behaviour so if drinking high levels is not considered acceptable by the student's peer group the student may not undertake high levels (Perkins, 1997). This is supported by Neighbors et al (2007) who found that injunctive norms (peer approval) were the biggest indicator of drinking in university students.

Other factors which appear to affect how strong the influence of peer's drinking behaviour is, include age, emotional intelligence and size of peer group. Although little research has been undertaken on these aspects, it has been found that peer influence decreases with age (Mcalaney and McMahon, 2007) and students with high levels of emotional intelligence are less affected by peer drinking levels than those with lower emotional intelligence (Ghee and Johnson, 2008). Jamison and Myers (2008) found that the larger the group of peers, the more affected students are to match alcohol consumption levels.

Normative beliefs, rather than actual consumption rates by peers, is an important factor in understanding the high levels of alcohol use by students (Maddock and Glanz, 2005). This means that if a student has a belief that their peers are consuming high levels of alcohol they are more likely to undertake similar levels. Yet, it has been found that students often overestimate the alcohol behaviour of their peers and the general population (Pederson and Labrie, 2008; Bourgeois and Bowen, 2001). A study undertaken by Bourgeois and Bowen (2001), however, found that students predict that the typical student drinks more than their peers. Therefore if a student is more likely to be influenced by their peers than the general student population, as suggested by Yanovitzky et al (2006), then normative beliefs may not be as much of a problem as suggested. Pedersen and Labrie (2008) found that the environment which has the most overestimation of drinking behaviour is "pre-drinks parties" which suggests that health promotion should may be focused on this environment. Nagoshi et al (1994) identified cultural differences between perceived norms finding that student from the USA had lower perceived norms for drinking than Japanese students.

Parental influence could also serve as a factor for explaining students drinking habits and Jackson et al (2001) found that both parents and peers have a similar influence on students drinking habits. However, other studies have identified that it is not so much the parental influence but the parental permissibility of alcohol use (Abar et al, 2009; Walls et al, 2009) This means, if a parent views high alcohol use as acceptable, students are more likely to consume higher levels.

Another sociological factor which is associated with increased alcohol consumption is having an active involvement in university organised events and clubs. Chun and Sohn (2005) identified that students who have joined a student club are 1.36 times more likely to consume alcohol. However, this study was undertaken in Korea so there may be cultural differences. However, studies undertaken in western countries have identified that students who are members of sports clubs and play to a competitive level at university are at risk of exceeding weekly recommended alcohol allowances

(Wilson, 2004; Martha et al, 2009). Martha et al (2009), however, identified gender differences as they found that participating in sport at a competitive level represented risk factors for males but was protective for females. High levels of alcohol consumption by university sports teams could be explained by the normative context of alcohol consumption within university clubs. On the other hand, Sun et al (2008) found that students who rarely participated in university organized events were more likely to engage in binge drinking. This implies that if students do not partake in organised forms of socialisation at university, their only form of socialising may be going out or attending parties. One activity which has been negatively related to undertaking heavy episodic drinking is martial arts. Martha et al (2009) found that students taking part in any martial arts are less likely to consume high levels of alcohol. Therefore, this suggests that the student's environment whilst at university may play a role in explaining why students consume such high levels of alcohol.

5.6 Environmental Factors

Where a student lives whilst at university appears to affect the likelihood of excessive alcohol consumption and studies undertaken suggest that students who do not live with parents are more likely to consume higher levels of alcohol (Page and O'Hegarty, 2006; Ilhan et al, 2008; Gliksman et al, 1997). Gliksman et al (1997) found that students living in halls of residence were 2.7 times more likely to consume high levels than those living with their parents. The rates also differ depending on what type of residence the students resides in, with Page and O'Hegarty (2006) identifying that those living in fraternities or halls of residence were more likely to engage in heavy episodic drinking than those living in houses off campus. This is supported by Gliksman et al (1997) who found that students living in halls of residence were 0.7 times more likely to consume high levels of alcohol than those living off campus. However Ilhan et al (2008) found that shared dormitories are protective and students living in these settings are less likely to consume high levels of alcohol. Studies undertaken in other countries and other cultures have also identified similar findings

with a study undertaken in Korea finding that students not living with their parents were 1.40 times more likely to have a problem with alcohol (Chun and Sohn, 2005).

The influence of the faculty and subject undertaken is also an environmental factor which has been examined. There appears to a large amount of research but only in terms of medical courses (Thakore et al, 2009; Newbury- Birch et al, 2000). There does not appear to be many studies which specifically examine the other non-scientific subjects which may be useful to understanding the differences, if any, between subjects. This could be helpful in determining where health promotion should specifically be focused. The research that has been undertaken examining the differences in alcohol consumption between the courses undertaken differs in opinion. One study which has examined interfaculty differences in alcohol consumption found that out of eight different faculties' students undertaking engineering and medical courses had the lowest mean weekly alcohol consumption and male biological sciences students had the highest mean weekly alcohol consumption rates (Webb et al, 1997). Gliksman et al (1997) found that students enrolled in arts and social sciences courses are 1.6 more likely to consume fifteen alcohol drinks per week than those enrolled on a science course. However, a study which investigated the alcohol consumption levels between students undertaking a dental course and a law course found that dental students appear to indulge in similar levels of alcohol use when compared to students studying law which is a non scientific subject (Barber and Fairclough, 2006). It appears that the course with the lowest frequency of consumption is sport, as found by Lorente et al (2003), who reported that when compared to their peers of other subjects drank less frequently.

As well as where the students live and what subject they are undertaking influencing alcohol consumption rates, the drinking setting has also been found by certain studies to affect consumption amongst students. Demers et al (2002) found that drinking setting is extremely important in predicting alcohol intake. They found that each setting carries its own rules and norms in relation to the appropriateness of drinking

and the form of drinking undertaken which are reinforced through social interaction. Clapp et al (2006) found that "Bring Your Own Booze" parties had the highest levels of alcohol consumption. The settings which influence where high levels of alcohol are consumed has been found to be influenced by gender differences with O'Hare (1990) finding that women are more likely than men to drink in family and restaurant situations. Clapp et al (2006) also identified gender differences within parties as they identified that women had higher breath alcohol content (BrAC) at theme or fancy dress parties compared to non-theme parties. Men, on the other hand, were found to have similar BrAC regardless of the type of party. Arguably, though the relationship between setting and alcohol consumption could be explained as an object of self-selection with heavy drinkers more likely to find themselves in heavy drinking settings.

The influence of how different days of the week affects student's consumption rates is one aspect which does not appear to have been researched fully. The only day which appears to have been researched is Thursday night consumption rates. Wood et al (2007) found that students with no classes on a Friday drank approximately twice as much on a Thursday than those with an early class. However, students who had classes at 12pm or later consumed similar amounts than those who did not have a Friday class. Other studies have supported this evidence (Del Boca et al, 2004; Paschall et al, 2006) but both these studies only investigated students currently in their first year of university. Paschall et al (2006) highlighted in its discussion that the study is potentially biased due its uneven distribution of questionnaires in the week with half being distributed on a Monday and the other half on a Friday with questions being asked about the previous three day's drinking behaviour. It recognised that more alcohol is consumed on Thursday to Saturday but other studies do not highlight this potential bias.

Other environmental factors, not related to student culture, such as the influence of religion and socioeconomics have also been found to play a part in alcohol

consumption rates amongst students. The majority of studies identified in the literature search related to the influence of religion on consuming alcohol were undertaken in other countries with different cultures to the UK (Isralowitz and Ong, 1990; Ghandour et al, 2009; Karam et al, 2004) The one study found undertaken in the USA, a country with a western culture, identified that students' with higher degrees of religiosity and spirituality reported fewer unhealthy drinking habits than those who did not report having a religion (Dennis et al, 2009). However, as only one study has been identified related to the influence of religion on students' alcohol intake in western culture, the results cannot be generalised.

The other studies undertaken in other cultures, suggest a similar conclusion as Dennis et al's (2009) study with Karam et al (2004) and Silva et al (2006) studies undertaken in Lebanon and Brazil, respectively, identifying that reporting being religious was associated with lower alcohol consumption rates. However, Isralowitz and Ong (199), a study undertaken in Singapore, found that religious beliefs and values were not a significant factor in terms of students' alcohol use. Ghandour et al (2009) suggested that the more conservative the students' religious group were the less likely they were to consume alcohol. This was supported by their results which found that out of Christian, Muslim and Druze students in Lebanon, the students who were Christian were more likely to consume alcohol. However, the religion of Islam forbids the consumption of alcohol so this is likely to affect the results.

The socioeconomic status of the student and their family is also related to consumption levels of students with studies identifying that high socioeconomic status is related to high alcohol intake by students (Dantzer et al, 2006; Oksuz and Malhan, 2005; Silva et al, 2006) This could be related to the fact that students who are wealthy or have wealthy families could have more disposable income that can be spent on luxuries such as alcohol.

One environmental influence which has had a lot research on it is the influence of media. On university campuses, Cousins and Kypri (2008) found that when alcohol is promoted through advertising and promotions it contributes to high levels of drinking. This influence will be discussed further in chapter six as it one aspect which can easily be changed with the implementation of advertising policies. The influence of music and television media has also been identified as a factor. Henderson (2008) found that watching the channel MTV and hip hop videos with exposure to trademarked alcohol brands influenced students at a university in the USA. Chen et al's (2006) study also identified the influence of music containing references to alcohol in increasing student's alcohol use. However music and television preferences may reflect personal predispositions and preferences which therefore means it is difficult to establish cause and effect.

5.7 Conclusion

In conclusion this research has shown that alcohol intake by university students is related to both individual and societal characteristics. Not just one factor causes students to consume alcohol but a multitude of influences all linking together. Some factors are easier to influence than others. However, by taking into consideration the biological, psychological, sociological and environmental factors, health professionals and policy makers can implement health promotion and policies based on evidence based knowledge.

Chapter Six: Promoting sensible drinking behaviour by university students'

6.1 Introduction

Health promotion is an integral part of a nurse's role so therefore a discussion is needed on what is being done and what can be done to promote sensible drinking by university students. The World Health Organisation (WHO) identified that health promotion was a way of equipping people to have more power enabling them to make choices in regard to improving their well-being (WHO 2002). Using Ewles and Simnett's Five Approaches to Health (2003) and identifying prevention interventions which could be employed, a nurse will have a comprehensive knowledge of health promotion with regards to university students' alcohol use. This chapter will also highlight what role nurses' play in each of the interventions. However, before this, the role that the alcohol industry plays in the UK will be discussed.

6.2 The Alcohol Industry in the UK

In 2009 the government spent approximately £17.6 million on alcohol education and information but this is dwarfed by the UK drinks industry's £600-800 million annual spend on promoting alcohol (NHS Confederation and Royal College of Physicians, 2010). Alcohol advertising is a key aspect of the alcohol industry in the UK and is a highly debated (Institute of Alcohol Studies, 2008).

In 2004, 202.5 million was spent on alcohol advertising and combined with indirect promotional activities, such as sponsorship, the total amount spent is in excess of £800 million per annum (Institute of Alcohol Studies, 2008). The levels of alcohol advertising has increased substantially in recent years and with advertisers employing more sophisticated marketing techniques, such as internet advertising, individuals are exposed to alcohol on a much more regular basis (BMA, 2008). However, Babor et al (2003) found that alcohol advertising has little or no effect on total alcohol consumption. On the other hand, the BMA (2008) has suggested that, although

alcohol advertising is not an inappropriate activity, the impact of advertising on vulnerable adults and young people should be considered. A study comparing 24 European countries found that the UK was the only country which did not have at least one ban on advertising of alcohol (Andersson, 2007). This may be explained by the fact that alcohol advertising is controlled by both the Portman Group and OFCOM creating a conflict of interests (BMA, 2008).

The Portman Group are a group who work closely with the UK policy makers and were set up in 1989 to promote "social responsibilities in the alcohol industry with a particular focus on responsible marketing" (Harkins, 2010). However, companies such as Carlsberg UK, Bacardi Beverage UK and Coors UK finance this group and all the directors of the group are alcohol industry executives (Harkins, 2010). This group's influence on the UK government is evident in England and Wales Alcohol Strategy in which the Portman Group was the only alcohol misuse group cited in the final report (Prime Ministers Strategy Unit, 2004). This is an example where external pressure on the government has influenced the evidence in policy (Stevens, 2007). It is important that nurses and other health professionals have knowledge of the influence of the alcohol industry when considering health promotion.

6.3 Health Promotion Theory

The Ewles and Simnett approach (2003) comprises of five approaches to health promotion; medical approach; behaviour change approach; educational approach; client-centred approach and societal change approach. The societal and educational approaches will be the focus of promoting sensible drinking by students but the other three approaches will also be discussed.

6.3.1 Societal Approach

The societal change approach focuses on changing the whole society not just individuals within it (Ewles and Simnett 2003). This is undertaken by implementing policies which aim to bring about changes to attitudes and beliefs about high levels of

alcohol consumption. The most recent health committee report has suggested some evidence based recommendations (House of Commons Health Committee, 2009). It suggested that more time needs to be focused on effective policies, such as pricing and availability. Therefore a range of evidence-based policies have been implemented and they have been suggested to effectively reduce alcohol misuse and the resulting harm.

Controlling the price of alcohol and introducing a minimum price for it is one aspect which has been suggested to reduce alcohol consumption (WHO regional Office for Europe, 2009). Minimum pricing is a policy which sets a minimum price at which alcohol can be sold to ensure that retailers cannot sell alcohol below a certain baseline cost (Royal College of Physicians, 2009). This suggested policy features heavily in an Alcohol bill recently put forward by the government in Scotland (Scottish Government, 2009) and is already operating in eight out of ten provinces in Canada (Royal College of Physicians, 2009).

According to the Department of Health (2008) 25 percent of the population in the UK drink at hazardous levels but these drinkers consume three quarters of all alcohol sold in the UK. However, the alcohol industry is reliant on these drinkers for the profits and it is the heaviest drinkers who drink the cheapest alcohol (Meier et al, 2008). The theory that low alcohol prices increase the level of consumption has been supported by McKee (2006) who highlighted that when Finland joined the European Union the rules were relaxed on alcohol prices. This led to a fifty percent rise of mortality from cirrhosis, a consequence of high levels of alcohol consumption, over the next decade.

Meier et al (2008) found that a minimum unit price of fifty pence per unit would reduce consumption per drinker by 6.9 percent which would result in 100,000 fewer hospital admissions each year and £66 million would be saved on healthcare costs in England per year. The alcohol industry suggests that this minimum pricing would

unfairly penalise moderate drinkers (Groves, 2008) but Meier et al (2008) refutes this suggesting that an increase would only raise the weekly bill of someone consuming six units a week by only about 11 pence.

The Royal College of Physicians (2009) suggest that pricing policies in the UK will have a positive impact on reducing harm caused by alcohol misuse by targeting the groups who drink the most without penalising those who drink responsibly. Pricing policies are likely to be particularly effective in reducing consumption by university students, as they are more likely to be sensitive to price changes due to their smaller disposable incomes. If there are less special offers on drinks and supermarkets have higher prices, students' may consume less alcohol before going out which has been found to be an activity undertaken by a high level of students (Clapp et al, 2006).

Conversely, alcohol is still easily accessible, and since the introduction in 2005 of twenty four hour licensing in the UK, individuals can potentially purchase alcohol at all times of day. The rationale behind this change in law was that "most alcohol related violence occurred between 11pm and 2am" (Home Office, 2007) which is when most drinking outlets closed in the UK. It aimed to alter the binge drinking culture where drinkers had a tendency to rush to consume alcohol immediately to closing time (Plant and Plant, 2006).

However this extension of licensing hours has received considerable criticism from both the medical and police community. In the medical community, a small scale review found that since the introduction of 24 hours licensing the number of alcohol related attendances to an Emergency Department increased from 79 in March 2005 to 250 in March 2006 (Newton et al, 2007). However, this study only examined one hospital in London so a large scale review would need to be undertaken. An increase in anti-social behaviour has also been identified with an increase in all types of crime, since the legalisation of 24 hour drinking, between the hours of 3am and 6am (Home Office, 2007). Before the implementation of the Licensing Act in 2003 a study

undertaken in Perth, Australia found that an extension of licensing hours was linked with alcohol related crime (Chikritzhs and Stockwell, 2002). One other consideration is that the Licensing Act, which legalised 24 hour drinking, does not list public health as a licensing objective. With regards to the influence of 24 hour drinking license on student's drinking behaviour in the UK, there has not been any research undertaken on this subject. This suggests that further research is required.

By implementing policies which make alcohol less accessible, societies may be influenced to alter their perceptions of alcohol. This may in turn reduce consumption levels of individuals. However, the educational approach plays a major part in changing society's perception and if individuals are educated in the negative consequences of excessive alcohol use, they may be more likely to reduce their consumption rates.

6.3.2 Educational Approach

An educational approach to health promotion is giving individuals information to discover the health benefits or detriments for themselves (Ewles and Simnett 2003). This is undertaken on an individual and population level and nurses have a high involvement in the individual educational approach.

As White and Swartzwelder (2009) found many students' bring established drinking behaviours with them to university so for this reason education should be targeted at both school children and students. In the UK, alcohol education is a requirement in school and it is taught in personal, social and health education (PSHE) lessons (BMA, 2008). Other venues where young people gather may also play an important role in alcohol education such as youth centres, the family setting and GP surgeries. However, there are discrepancies in how effective these educational programmes are at influencing long term drinking behaviour (Plant and Plant, 2006). To overcome this issue it has been suggested that tailoring programmes to be realistic and in keeping

with society's expectations and cultural influences are important in ensuring success (Milgram, 2001).

Health professionals who are attempting to raise awareness of sensible drinking to university students could consider campaigns which are based at high profile events such as "fresher fairs" and sporting events. Poster and leaflets highlighting the dangers and consequences of alcohol use tailored specifically to students may also be useful.

Alcohol education can also be targeted at the population as a whole usually through mass media campaigns and they have been used extensively to promote sensible drinking. Both Donovan and Henley (2003) and Henley et al (2007) found that well devised and adequately resourced campaigns can improve health related behaviours.

Alcohol education is a necessary and integral part of any balanced approach to policy and although the effectiveness of these programs has been questioned, there is evidence that well-designed programmes are useful tools. Sometimes, however, individuals need more individual approaches to their alcohol use. This is where the other three approaches of Ewles and Simnett's approach (2003) come in useful.

6.3.3 Other Approaches

The remaining three approaches; behaviour change, medical and client-centred approach all may have an influence in promoting sensible drinking by students. The behaviour change approach uses a number of models to guide health promoters in providing clients with a positive outcome (Ewles and Simnett, 2003). One model which has been found to be particularly useful when targeting alcohol use is the Stages of Change Model (Naidoo and Wills, 2000). This model is a cyclical model with five stages featuring pre-contemplation stage, contemplation, preparation, taking action and maintenance (Prochaska and DiClemente, 1984). The pre-contemplation stage is when an individual has no desire to reduce alcohol consumption and the health promoter would assess at this stage if behaviour is going to change. The nurse

may use educational tools during this stage to provide the client with knowledge of the consequences of their behaviour. Ewles and Simnett (2003) have suggested that leaflets are advantageous at this point as the individual can read them at their own pace.

The contemplation stage is when the individual is motivated to reduce their levels of drinking and seeks help or advice (Naidoo and Wills, 2000). The next step, the preparation stage, may also be the point when an individual seeks help and advice from a health professional (Naidoo and Wills, 2000). The role of the nurse at this point may be to assess what level of intervention is needed and whether the individual has a problem with alcohol. This will lead to the penultimate stage where action is taken and the individual is given help to reduce alcohol intake. The final stage is maintenance where the individual will aim to continue sensible drinking levels. This could include follow-up appointments with a nurse or health professional.

Sometimes, the medical approach will be incorporated into the behaviour change approach especially if harm has resulted from high levels of alcohol use. The medical approach aims to ensure individuals are disease and disability free (Ewles and Simnett, 2003). A criticism of this approach may be that the individual loses their autonomy which may cause conflict. If a nurse believes that the individual may have an alcohol problem or the individual has presented with illness or injury due to alcohol use, medical treatment can be initiated. This will be discussed further in the prevention section.

To maintain client autonomy, the client centred approach can be adopted. This approach facilitates health promotion of aspects which the clients feels may be of benefit (Ewles and Simnett, 2003). The nurse should discuss possible interventions and treatments with the individual and by establishing what is important to the individual will help with priorities of care.

6.4 Prevention Techniques

“The prevention of alcohol dependence needs to be seen within the context of the broader goal of preventing and reducing alcohol-related problems at the population level” (WHO, 2001). This suggests that a stepped-care model (Marlatt, 1996) needs to be implemented which can be divided into three categories. The first line of defence, also called primary prevention, would prevent the development of a problem. Secondary prevention is aimed at early disease detection and techniques are initiated to prevent the progression of a problem and the emergence of symptoms. However, if the problem develops, tertiary prevention focuses on reducing the impact of symptoms and restoring quality of life. These three categories will be reviewed, starting with primary prevention and building to more intense prevention approaches.

6.4.1 Primary Prevention

As previously discussed, education at school on the consequences of alcohol can be effective at promoting sensible drinking and it aims to continue the sensible drinking behaviour when a student enters university. Initiatives could be employed at “freshers fairs” which promote sensible drinking and students could be provided with information on arrival at university about the importance of sensible drinking. On a local level, the University of Nottingham has an ongoing drink awareness campaign which has involvement in all major university-run events and highlights the importance of sensible drinking (University of Nottingham Students Union, 2010). These campaigns are in place in most universities across the country.

Pricing policies and advertising legalisation, as previously discussed, has also been found to have an impact on individuals’ behaviour and may have an involvement in promoting sensible drinking. However, primary prevention is not always effective and some students will still partake in misuse of alcohol resulting in short term or long term harm. For this reason, health professionals must have an understanding of other prevention techniques which can be employed in order to reduce harm.

6.4.2 Secondary Prevention

Secondary prevention is essentially the early detection of a problem with alcohol, followed by identifying an appropriate intervention. With regards to students' who present with alcohol problems, it is imperative that health professionals correctly diagnose alcohol problems and appropriate treatment is initiated.

Identification of alcohol misuse amongst people not seeking treatment for problems with alcohol is primarily achieved through alcohol screening questionnaires. This could be particularly useful for nurses who are presented with students in the Emergency Department with harm resulting from alcohol misuse or for nurses in a GP surgery who are concerned that a student could be misusing alcohol. Several screening questionnaires have been developed for detecting alcohol misuse. The main one is the Alcohol Use Disorders Identification Test (AUDIT) which has been validated for use in a wide range of settings, populations and cultural environments (BMA, 2008). However, the Paddington Alcohol Test (PAT) has been identified as a quick and efficient screening tool in the Emergency Department setting (BMA, 2008). However, a criticism of using alcohol screening questionnaires' is that alcohol consumption levels can be significantly over or underestimated deliberately or as a result of poor recall. It has also been found that in 2007 only 2.1 percent of all Emergency Departments in the UK used formal alcohol screening tools (Patton et al, 2007).

In the emergency department setting biological markers, such as the identification of carbohydrate deficient transferrin, can be used as a tool for identifying problems with alcohol (BMA, 2008). However it has been found that less effective in primary care settings so would not be appropriate for nurses at a GP surgery to use (Raistrick et al, 2006).

The most effective form of treatment which is suggested for people presenting with alcohol problems is brief interventions (National Institute on Alcohol Abuse and Alcoholism, 2000). Brief Interventions are short one-to-one counselling sessions

which are ideally suited to individuals who drink to harmful levels. Brief interventional techniques have been found to be especially useful in university settings because they focus on moderating a person's alcohol consumption to sensible levels and eliminating harmful or hazardous drinking practices (Larimer and Cronce, 2002). They can be used in university health centres, halls of residence and Emergency Departments. However, there is evidence to suggest that peers should deliver and implement these interventions and certain studies have found that peer counsellors are as effective as professionals in encouraging drinking changes amongst students (Larimer et al, 2001; O'Leary et al 2002; Fromme and Corbin, 2004). However, peer counsellors would require a high level of training and supervision from a trained health professional.

One other aspect to consider is that it that students who require alcohol-related interventions may be the least likely individuals to participate in sessions (Black and Coster, 1996). Certain strategies have been suggested to overcome this issue, such as social marketing techniques at events such as "fresher's fair" (Larimer and Cronce, 2002) and calling students or sending reminders if they miss appointments (Black and Smith, 1994).

These secondary prevention techniques could be effective in determining if a student who has experienced harm or injury as a result of alcohol has a problem with alcohol or has just had a one off experience. If the problem with alcohol has progressed to a more severe problem, nurses and other health professionals can implement tertiary prevention which will aim to reduce the symptoms and restore quality of life for the student.

6.4.3 Tertiary Prevention

Although rare, students who present with more severe alcohol dependence or problems can be referred to specialist alcohol treatment services (BMA, 2008). These services have been found to be effective and provide better outcomes to individuals than those who are left untreated (Raistrick et al, 2006). It could be useful for

universities to have a specialist alcohol nurse based at the university health centre. However, this suggestion may not be cost-effective and would have to be researched further.

On a local level, there are nurse led specialist services which has nurses working at different levels and employing different approaches and interventions to treat alcohol problems. Last Orders is an example of a specialist service which offers advice to individuals living in Nottingham who want to reduce the amount of alcohol they drink. This service works with different services to ensure that individuals receive the appropriate level of support (Last Orders, 2009).

6.6 Conclusion

In recent years the government and other agencies have acknowledged the alcohol misuse issue in the UK and their policies and guidance have reflected this. However, there still appears to be few policies related to university students' alcohol misuse. The evidence found suggests that a clear national policy is needed related to alcohol related harm and students. Although individual universities have their own policies regarding this issue, it would give health professionals and students a clearer understanding of the topic. Prevention and health promotion has also had a wide range of literature produced on the subject of alcohol misuse but there still does not appear to be specific literature related to students' alcohol consumption.

Chapter seven: Discussion

7.1 Introduction

The aim of this chapter is to examine the findings discussed within the preceding chapters and to draw conclusions regarding university students' alcohol use. The findings will be discussed in relation to other literature, policies and recommendations. This will enable conclusions to be reached with regard to university students' alcohol use and the role of the nurse on this issue. Further recommendations for practice and potential research will also be discussed.

7.2 Main Findings and Explanation of Findings

Following a literature search and reviewing the literature surrounding university students' alcohol use, the literature was divided into four themes as stated in the method.

Alcohol use is associated with short and long term consequences to the individual as well as having a negative impact on society. Short term consequences included injury (Roche and Watts, 1999; Lucas et al, 2006) and increased incidence of risky behaviours (Coleman and Cater, 2005; Abrams et al, 2006) whereas long term consequences included illness or disease including alcohol dependence and poor academic performance (Anderson and Baumberg, 2007; National Institute on Alcohol Abuse and Alcoholism, 2000; Bewick et al, 2008) Societal consequences included crime and anti-social behaviour as well as an impact on the NHS and the economy (Home Office, 2007; British Medical Association, 2008)). However, moderate alcohol consumption was associated with positive effects including positive feelings and health benefits (Park, 2004; Kitamura et al, 1998).

When explaining the findings in this chapter, the review showed that research has a tendency to focus exclusively on the negative consequences without taking into consideration the positive effects of moderate alcohol use (Park, 2004). However,

these positive effects are useful in explaining why rates of alcohol consumption are so high by both students and the general population. The short term negative consequences of alcohol are the most relevant, in my opinion, to university students. Although long term negative effects are important, it will be difficult in terms of health promotion to highlight these implications to students as young people often view themselves as invincible (Giesbrecht. 1999). However, young adults may have a greater sensitivity, when compared to older adults, to the effects of alcohol due to developmental changes that occur during adolescence, potentially resulting in greater risk of physiological damage (Brown & Tapert, 2004; Spear, 2005).

Anti-social behaviour and crime associated with alcohol misuse is another important aspect of the negative consequences. Although these findings may not be directly relevant to nursing, the consequences of the stated behaviour for both the individual and the potential victims may have an impact on both physical and mental health. Therefore the negative impact of anti social behaviour on the NHS and health professionals could be high for nurses and other health professionals. By reducing the incidence of alcohol related negative consequences will potentially reduce the work load of nurses.

Current consumption rates by students in both the UK and internationally were identified. University students in the UK partake in different drinking behaviours including binge drinking, hazardous drinking and abstaining. Countries with low consumption rates were explained by the influence of GDP or cultural differences.

When explaining the findings, a large proportion of university students undertake binge drinking, with rates reported to be between forty and fifty percent (Newbury-Birch et al, 2000; Underwood and Fox ,2000). The review also reported the rates of abstinence of amongst students and other research has identified that abstinence in university is on the increase whilst binge drinking is on the decrease (Weschler et al, 1998). However, one important consideration is the rates of hazardous or harmful

drinking being between two and sixteen percent (Newbury-Birch et al, 2000; Pickard et al, 2000). These discrepancies between the rate suggests that further research needs to be initiated to understand the problem. Hazardous or harmful drinking rates is of particular interest because the students' who undertake in this behaviour are more likely to experience long term problems including alcohol dependency (Webb, 1996).

It was important to indentify the differences in consumption rates by unversity students' from other countries in the world in order to determine how the UK compared to other countries drinking habits. It was found that countries with similar cultures to the UK had comparable rates emphasising the importance of societal influences on drinking (Kuo et al, 2002; Roche and Watt, 1999). However, one aspect which should be taken into consideration is the definitions of both binge drinking and hazardous drinking, as they may differ in different countries, making the comparisions difficult to establish. Comparisons among different countries can help researchers determine how variations in social, cultural, political, environmental, and genetic factors can influence drinking behavior.

The factors which influence students to undertake these drinking behaviours were divided into biological, developmental, psychological, sociological and environmental factors. Biological influences included genetics, gender and age (Wall et al, 2005; Gliksman et al 1997) whilst developmental influences included family history and drinking behaviour before university (Blue, 1999; White and Swartzwelder, 2009). Psychological influences were mood, life satisfaction and differing personality traits (Stock et al, 2009; Murphy et al, 2005; Arnett, 2005) and the main sociological influence was peer influence (Mcalaney and McMahon, 2007). Environmental influences included the students residence and subject (Page and O'Hegarty, 2006; Gliksman et al, 1997) aswell the influence of religion and media (Dennis et al's, 2009; Cousins and Kypri, 2008).

When explaining the findings from this chapter, although biological and psychological influences are important in influencing alcohol consumption rates, biological influences are difficult to influence and both are not specific to students drinking behaviour. However, the research showed that sociological influences are important in influencing students' drinking behaviour especially with regard to peer influence. The important consideration to identify is that peers at university, especially those living away from home, are the closest people to individuals (Perkins, 1997). This shows the link between environmental factors and sociological factors and, in fact, the research showed that all five categories influenced the other categories. This highlights the importance of nurses' and health promoters having a comprehensive knowledge of all the influences before they can implement health promotion.

Promoting sensible drinking by university students was explained using health promotion models including Ewles and Simnett Approaches (Ewles and Simnett, 2003) and Primary, Secondary and Tertiary prevention techniques. Nursing interventions were also discussed.

This chapter highlighted the interventions which could be employed by nurses and other health promoters when promoting sensible drinking. The review highlighted the importance of sociological approaches and the possible interventions using a societal approach were suggested. The influence of society appears to be more relevant in primary prevention. Suggestions were made on how to influence students' drinking behaviour and possible interventions were suggested. Research found that peer interventions are the most effective when aiming to reduce students' consumption rates on a secondary prevention level but on a tertiary prevention level, the use of specialist alcohol services with trained nurse specialists is a suggested intervention (National Institute on Alcohol Abuse and Alcoholism, 2000, BMA, 2008).

7.3 Strengths and Limitations

When considering the strengths and limitations of this literature review, the techniques identified in the method section should be critiqued. The aims and objectives of this review were clearly stated and the five different journals were used in the initial literature search all specialised in different aspects of health related literature. The aim was to achieve saturation of the literature but the author believes that this was not achieved. Due to some journals not being included in the University of Nottingham's subscription, certain research papers which may have been relevant could not be accessed. Any research papers which were not written in English were also not included in the study. These papers may have been especially useful for identifying university students' consumption rates in other countries. These financial implications were outside the scope of a Masters level dissertation.

One limitation which could affect the results was that the majority of studies undertaken were small scale research studies and only examined one university campus which could be a limitation of the research as they may not be generalisable to all students.

Another limitation of this review was the amount of studies which were written in the USA as the majority of research on this subject is undertaken in the USA. Although the UK and USA's cultures are very similar, one major issue is that the legal drinking age in the USA is twenty one compared to eighteen in the UK. This may have influence the results especially in chapter five which identified the factors influencing consumption rates. However in chapter four, only studies from the UK were used in which current consumption rates in the UK are identified.

One strength of this review was that it encompassed a wide range of subjects related to university students alcohol use which will give the nurse a thorough knowledge of

this subject from the effects of alcohol through to preventative methods which could be employed. To reduce researcher bias, it would be preferable to have two authors working on this research project but this is outside the scope for the masters dissertation.

7.4 Comparison with Previous Research

Other literature reviews have been undertaken on university students' alcohol use and some of the findings in this review are similar to those reported in previous research. Boyd et al (2005) undertook a critical review examining college students' alcohol use in USA. The review found that alcohol use in students' is related to five domains; biology, identity, cognition, affiliation and achievement. The review also highlighted the harmful consequences of risky drinking.

A literature undertaken in the UK was Gill's (2002) review which examined the drinking consumption rates of UK undergraduate over a period of twenty five years. The study examined students who exceed sensible drinking levels, those who drink to harmful levels, sensible drinkers and abstainers. It also highlighted the consequences of excessive drinking.

7.5 Implications for Research and Recommendations for Practice

Current research in the field appears to focus strongly on the negative consequences of alcohol use and there has been little research undertaken examining the positive consequences of alcohol use. In order to fully understand why students' partake in such high levels of alcohol use, one must understand the positive effects. A future research recommendation is that the positive effects of drinking are examined further.

Another future research recommendation is that an up-to-date research study is initiated which examines the current consumption rates in the UK as the last two UK

wide studies examining this were undertaken by Webb et al in 1996 and Gill in 2001. This would give policy makers a true reflection of the issues surrounding students' consumption rates.

Education of university students' alcohol use could be beneficial to nurses and incorporating it into student nurses' curriculum could provide nurses with skills and knowledge to understand the implications and consequences of alcohol use. Registered nurses working in Emergency Departments, especially, should be educated in students' alcohol use.

7.6 Conclusion

In conclusion, the rates of students' who exceed their recommended weekly limits or drink to hazardous levels is at high level in the UK and the literature has shown that drinking to these levels can have an effect on both the individuals health and society. This has a direct effect on the economy and the NHS, especially for health professionals working in the emergency department. Although positive consequences of alcohol use have been identified, the negative effects outweigh the positives. However, consumption rates continue to remain high which mean thats a knowledge of why students undertake these high levels needs to established. The review identified that there are many factors which influence students' consumption rates and these must be taken into consideration when implementing policies and guidance related to this issue.

Education and development of skills for nurses on how to treat students' who are consuming high levels of alcohol could be beneficial in attempting to reduce the rates and its associated consequences.