# A STUDY OF THE KNOWLEDGE, ATTITUDES AND PRACTICES OF FIRST YEAR STUDENTS AT CORK UNIVERSITY REGARDING PARENTAL AND PERSONAL ALCOHOL USE 

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A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree
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## DECLARATION

I, Jacqueline Grace Mathilda Glisson declare that this research report is my own work. It is being submitted for the degree of Master of Family Medicine in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

In memory of my father Victor Glisson 1930-1992


#### Abstract

AIM: - To study the knowledge, attitudes and practices of first year students at UCC regarding parental and person alcohol use. OBJECTIVES: -To obtain demographic data on the students and to compare the children of alcoholics with the children of non-alcoholics to determine if any differences existed between the two groups.

METHOD: - A questionnaire administered at the start of a lecture. RESULTS: -The students had a good knowledge of alcohol abuse and its causes. The majority was drinking within safe limits, had started drinking while still at school and obtained most of their knowledge about alcohol from their peers. The children of alcoholics felt more at risk of developing a drinking problem and chose careers in arts and food science in preference to others.

RECOMMENDATIONS: - Education should take place at school with parental involvement. Special attention should be paid to the children of alcoholics, as they are high-risk.


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## NOMENCLATURE

1. COA:- Children of alcoholic
2. NCOA :- Children of non-alcoholics
3. UCC:- University College Cork
4. AA:- Alcoholics anonymous

## Chapter 1

## Introduction

Alcohol abuse is an important problem to study both because of the frequency with which it is encountered in family practice and because of the impact it has on the lives of the drinker and their families. This study originated while the researcher was a general practitioner in South Africa. The researchers' practice was situated in rural Kwa-Zulu Natal where a significant part of the weekends on call were spent dealing with the aftermath of alcohol excess. While preparing the protocol the researcher relocated to Ireland and is now in rural practice in West Cork. Monday mornings here too are often spent handing out the morning after pill to teenagers who can't remember if they had sex or not and treating the after effects of some alcohol induced brawl or road traffic accident. The researchers practice is not unique in dealing with the fall-out from the weekends drinking. The impact of excessive drinking is evident most weekends in every city and town across Ireland where the sight of inebriated teenagers on the streets on Friday and Saturday nights is commonplace. ${ }^{1}$ The move overseas brought home the reality of how universal the problem of alcohol abuse is. The two cultures could not be more different and yet both are reeling from the impact of excess alcohol abuse. This study therefore has roots both in South Africa and in Ireland. Like the researcher, other family physicians
are often the first port of call in dealing with the impact of excessive drinking on the individual and their families. They are ideally situated to deal with the after effects of the drinking and to implement appropriate interventions. The family physician has an advantage over the Accident and Emergency Department doctors in that they have prior knowledge of their patients. ${ }^{2}$ They know their families, their background and other issues with which the alcohol abuser may be dealing. Being able to see the patient in context gives an added understanding and sensitivity to management of the alcohol abuse. Family physicians are aware of the high-risk drinkers in their practice. They know who are the children of alcoholic parents and are thus in an ideal situation to use these opportunities for prevention and health education.

In recent years, increased affluence and the relative decline in alcohol taxes has resulted in a large increase of the per capita alcohol consumption in Ireland. In fact, within the EU, Ireland ranks second only to Luxembourg in per capita consumption of alcohol. ${ }^{3}$ The WHO reported that alcohol use has increased significantly in most European countries. Globally 140 million people are currently alcohol dependent. Denmark had the highest reported frequency of alcohol consumption amongst students in European schools. Students in Finland, Ireland and the United Kingdom reported the next highest rates of drunkenness. ${ }^{4}$ Teenagers cause particular concern. There has been a $370 \%$ increase in "intoxication in public places" among teenagers in Ireland since $1996 .{ }^{5}$ Students too are a particularly important group to study in Ireland as the 18-24 year olds are more likely to drink to excess and engage in binge drinking than the older age groups. ${ }^{6}$ They are also the drinkers in whom interventions will have the most impact. ${ }^{7}$

Not only is alcohol abuse common but numerous studies have demonstrated the negative impact of this abuse on the drinker, their families and peers. Intoxication with alcohol is associated with an increased mortality and morbidity associated with
intentional and non-intentional injuries. In Ireland, alcohol was a factor in 25\% of those attending the Accident and Emergency departments. Alcohol induced hospital admissions have increased by $80 \%$ in the period 1997-2001. ${ }^{8}$ In South Africa 39\% of trauma unit patients had breath alcohol concentrations greater than or equal to $0.05 \mathrm{~g} / 100 \mathrm{ml}^{9}$. An association between per capita alcohol consumption and suicide rates has been demonstrated in numerous studies. ${ }^{10}$ Ireland has been no exception and there has been a sharp increase in male suicide. This increase in suicide rate mirrors the increase in per capita alcohol consumption over the same time period. ${ }^{11}$ Alcohol is also an influential factor in violent assault. It is a risk factor for being a victim of assault as well as a risk factor in committing an assault. In Ireland the Garda (Police) Research Unit has shown in a nationwide survey that in $88 \%$ of public order offenses, alcohol played a role. In 48\% of offenses against the person alcohol was a factor. ${ }^{12}$ In South Africa one-third to a half of people arrested for domestic violence were under the influence of alcohol when they committed the offence ${ }^{13}$. Acute alcohol intoxication is also associated with unsafe sexual practices, which in the South African environment can have life threatening implications. In Cape Town problem drinking was associated with a higher number of sexual partners, higher rates of unprotected sexual intercourse and more condom failures. ${ }^{14}$ Alcohol increases the risk both of being a victim and a perpetrator of sexual abuse. In Ireland $50 \%$ of perpetrators and $50 \%$ of the victims of sexual abuse were drinking at the time of the sexual assault. ${ }^{15}$ Figures from the Rotanda Hospital show that alcohol is the most common "date-rape" drug in Ireland today. ${ }^{16}$ In the UK alcohol consumption has been associated with $80 \%$ of suicides, $50 \%$ of murders, $80 \%$ of deaths by fire, $40 \%$ of road traffic accidents and $15 \%$ of death by drowning. ${ }^{17}$

So in summary the social consequences of acute alcohol intoxication include an increased risk of sustaining physical injury, engaging in unsafe sexual practices and an increased risk of committing a crime.

This study was done on first year college students. They are an important group to study because research shows that their drinking at college exceeds that of their peers in the general population. ${ }^{18}$ In a study done on 14000 students in the U.S. $31 \%$ of students filled the criteria for alcohol abuse and $6 \%$ for alcohol dependence. ${ }^{19}$ Not only do they drink more than their peers but while inebriated college students engage in more risk taking behavior than their peers do when inebriated. In a California study $34.2 \%$ of full-time college students and $32.8 \%$ of part-time students drove after drinking compared to only $27.9 \%$ of non college students in the same age-group. Although college students were more likely than other young adults to drive while drunk, they were also more likely to wear a seatbelt as a driver or passenger. ${ }^{20}$

Sexual assault is common and a woman has a one in four to one in five chance of being raped while in college. In an U.S. study $72 \%$ of these rapes took place while the women were intoxicated and unable to protect themselves. Those most at risk of being raped were under 21, white, resided in sorority houses, used illicit drugs, drank heavily in high school and attended colleges with high rates of heavy episodic drinking. ${ }^{21}$ In the researcher's opinion, the family physician is the ideal person to identify high-risk individuals. The family physician will in all likelihood be the person to whom the student turns for advice on sexual matters both before and during college. They are in a unique position to guide and educate their patients. The first visit or repeat visit for the pill is the ideal opportunity to educate women about risky situations and the dangers of alcohol intoxication.

The amount of alcohol abuse in Ireland is causing great concern within the country. New laws are being proposed to put pressure on the publicans not to serve people who are drunk. Questions are being asked about the abuse of alcohol in the country.

One of the questions is whether this a cultural phenomenon or whether the Irish are genetically unable to tolerate their alcohol? The question about the relative influence of environment as opposed to genetics is not a new one. Cross culturally man has noted that alcoholism runs in families. In Africa one of the researchers' Zulu patients said, "I drink because my fathers' spirit is in me. I will never be able to stop drinking because he could not". In Europe, Dr Hibell noted that teenagers follow parental drinking patterns. ${ }^{22}$ Studies document that alcoholism does indeed run in families but is this because a child learns to become an alcoholic from parents and the home environment, or because a child inherits genes that create an underlying predisposition for alcoholism. Adoption studies attempted to answer this question by following up the children of alcoholics adopted into non-drinking and drinking homes. They showed that the children of alcoholics have a 3-4 times greater risk of developing the disease irrespective of environment ${ }^{23}$. A recent study by Kendler et al found alcoholism and drugs abuse heritability amongst male twins to be as high as $60-80 \%$. ${ }^{24}$ Once the definite influence of genetics on alcoholism via numerous population and family studies had been determined it became a natural step to start looking for a specific gene for alcoholism. It is known that more than one gene is likely to be responsible for development of the disease. Studies are now underway trying to pinpoint the specific genes involved and to try and determine how genes and the environment interact to influence vulnerability to alcoholism ${ }^{25}$. Based on our current understanding, it is probable that environmental influences will be at least as important, and possibly more important, than genetic influences. Success in uncovering the genes involved in a vulnerability to alcoholism will help doctors to recognize the potential for alcoholism in high-risk individuals and to intervene at an early stage. Brief interventions have been shown to be effective in reducing drinking by alcohol abusers ${ }^{26}$. Education of high-risk children before they start drinking
should be just as if not more effective in preventing the disease. Family physicians are in the ideal situation to educate and counsel their high-risk families.

Therefore children of alcoholics (COA) are an important subgroup to study, as they are at high risk for developing alcohol use disorders. They are two to ten times more likely to develop alcoholism than children of from a non-alcoholic background. ${ }^{27}$ College is an important time to study the children of alcoholics because they are more at risk of stress related illnesses while at college than their peers are. ${ }^{28}$ They are also at risk of a number of physical, emotional and behavioral problems. ${ }^{29}$ The extent of the problem is not insignificant. In fact, at college in the USA, about 10\% of students have problem- drinking parents. Approximately $23 \%$ of these students meet the criteria for alcohol abuse problems themselves. Males are more likely than females to engage in heavy binge drinking and those who had an alcoholic mother are at greater risk of developing alcohol related problems. ${ }^{30}$ Not only are the children of alcoholics more at risk of developing drinking problems but they are also more likely to have academic difficulties. They are more likely to repeat a course, have low academic performance, skip days and drop out. ${ }^{31}$ Family physicians need to be aware of this and offer support and interventions when appropriate. This relatively poor academic performance is bound to influence the children of alcoholics' choice of career and future prospects. There is also good evidence that children of parents with alcohol problems have more drug involvement, plus related mental health and behavioral problems. ${ }^{32}$ They are a high-risk population at college and in need of extra care and attention.

So in summary, alcohol abuse is an important topic for family physicians to study because of the frequency with which they encounter it and its consequences. It is useful to know what the current situation is at Cork University College in order to determine what interventions would be the most appropriate. College students are a
high-risk population and one in which interventions are effective and cost-effective. Brief interventions can have long lasting effects and educating students about the dangers of alcohol early on in their drinking careers can protect them in the long term from the numerous negative consequences of alcohol abuse. Education by the "trusted" family physician to whom they have turned throughout their lives for advice should have some positive influence. The children of alcoholics are a particularly vulnerable population and one, which would be easily identified by their family physicians. The family physician should be alert to possible problems in college and be aware that this is a population who would need more guidance and understanding than the other college students on their list are. They would be ideally placed to offer a listening ear and gentle advice on avoiding the dangers of alcohol abuse in college.

### 1.1 Aim

This study investigated the knowledge, attitude and practices of first year students at Cork University regarding parental and personal alcohol use.

### 1.2 Objectives of the study

The objectives of the study were to:
a). Obtain demographic data of the study population with respect to ages, gender, year of study, degree for which they are studying and home county/country.
b). Explore their knowledge of alcohol and alcoholism with respect to the seriousness of the disease, the risk factors for developing the disease, and sources of information about the disease.
c). Explore their attitudes to alcohol with respect to whether they felt at risk of developing the disease, at what stage would they worry about their drinking and their reasons for abstaining from alcohol?
d). Assess the students' current drinking practices with respect to how much they were currently drinking, attendance AA or AI Anon meetings and the impact the drinking was having on them by rating them on the CAGE questionnaire?
e). Determine the presence of parental alcoholism as defined by a score or three or more on the CAST-6 screening test and to determine whether a relationship exists between parental alcohol use and students' knowledge, attitudes and drinking practices.

### 1.3 Preview of study

The next few chapters are devoted to an explanation of the methods and materials used, the results, discussion of findings, recommendations and finally conclusions.

- The methods and materials used.

This will include a discussion on study design, a description of the site of the study and the study population. It will include a description of the sample size, methods of sampling and data collection. There will be a justification of the selection of measuring tool and a description of the pilot study. Ethical clearance will also be discussed.

- The results

This chapter will display the results by means of graphs, tables and various other methods.

- A discussion of the findings

In this chapter the results will be discussed and the strengths and shortfalls of the study analyzed.

- Recommendations

In this chapter recommendations for the prevention of alcohol abuse will be made on the basis of the study findings.

- Conclusions

This chapter will show the more important findings and conclusions of the study. It will sum up the research and make suggestions about further areas of study that might be needed.

## Chapter 2

## Literature review

### 2.1 The global problem of alcohol

The drinking of alcohol is an integral part of many societies throughout the world. It often plays a major role in social, cultural and sporting activities. Alcohol is however a drug, the misuse of which is one of the leading causes of morbidity and mortality worldwide. ${ }^{33}$ The WHO reported that alcohol use has increased significantly in most European countries. Globally 140 million people are currently alcohol dependent. ${ }^{34}$ An increase in the per capita consumption of alcohol does not come without a price both to the individual and society as a whole. Allan et al set out in 2001 to establish a relationship between alcohol abuse and the other epidemic affecting the South African society, crime ${ }^{35}$ They did this by means of a cross-sectional record study of criminal offences and suicide attempts in 269 admissions to an alcohol rehabilitation unit in the Western Cape. What they were able to establish was a definite relationship between intoxication and both violent crime and suicide attempts. This widespread misuse and abuse of alcohol in South African society is also likely to have a large impact on the economy. A major burden is borne by the hospital care system, in particular the cost of alcohol-related trauma. In 1996 Parry et al conducted a study to estimate cost of alcohol misuse in terms of fatal and non-fatal trauma. ${ }^{36}$ They concluded that that alcohol misuse could be linked to a substantial amount of mortality and morbidity, particularly with respect to motor vehicle trauma and
interpersonal violence. Their findings correlated with mortality data in the USA and would suggest that control or even elimination of alcohol abuse would reduce a vast amount of injuries and death. In order to eliminate alcohol abuse it is important to know the extent of the problem. Only then can one determine what resources are required to combat this problem. Barry et al set out in 2002 study to determine the extent of alcohol use and abuse throughout South Africa. ${ }^{37}$ They did this by means of a descriptive, epidemiological study based on data gathered biannually from multiple sources, including specialist treatment centers, trauma units, mortuaries, psychiatric facilities, and surveys of school students and arrestees. The study lasted for over 4 years and confirmed that alcohol abuse is very prevalent and widespread. In 2000, 51,1\% of patients in Cape Town and 77 \% in Mpumalanga, reported that alcohol was their primary substance of abuse. In the trauma units a high proportion of patients tested positive for alcohol, ranging from 40.3\% in Durban and 91.8\% in Port Elizabeth. There was a similarly high proportion of mortality cases testing positive for alcohol. 40.3\% in Durban and 67.2\% in Port Elizabeth. Ireland is no different. Hearne R et al randomly selected alcohol admissions in a university teaching hospital in Ireland. ${ }^{38}$ Of the 1133 patients randomly selected, $30 \%$ of the men and $8 \%$ of the women met the DSM IV criteria for alcohol abuse or dependence. These were not just trauma admissions but all admissions excluding day cases. In 1993 Murray et al found that the incidence of problem drinking in Northern Ireland was 15.8\% of the men and $5.7 \%$ of the women. ${ }^{39}$ In recent years, increased affluence and the relative decline in alcohol taxes has resulted in a large increase of the per capita alcohol consumption in Ireland. Within the EU, Ireland ranks second only to Luxembourg in per capita consumption of alcohol. ${ }^{40}$ Long-standing stereotypes portray Irish people as prone to abuse alcohol. The 'problem' of Irish drinking and Irish attitudes to alcohol are not as straightforward as traditionally supposed. Analysis of combined years' data from the General Household Survey indicates first that people of Irish birth or parentage are no more likely than the British born to use alcohol at all. ${ }^{41}$

However, if they make use of alcohol at all, members of the Irish groups were more likely than the British born to consume alcohol at levels greater than 14 or 21 units per week. So across the cultures, alcohol abuse occurs commonly and results in preventable death, illness and injury. This has both social and economic implications.

### 2.2 Alcohol and the family practitioner

Family physicians are often the first port of call in dealing with the impact of excessive drinking on the individual and their families. They have an advantage over the Accident and Emergency Department doctors in that they have prior knowledge of their patients. ${ }^{42}$ They see the patient more regularly than the Accident and Emergency doctors would and therefore have more opportunity and often more time during routine consults to discuss prevention and health issues. They are also more likely to see the patient sober and receptive than the emergency physician who has to deal with the immediate consequence of the alcohol intoxication. The family physician knows the alcohol abuser, their families, their background and other issues with which they may be dealing. Being able to see the patient in context gives an added understanding and sensitivity to management of the alcohol abuse. Family physicians are aware of the high-risk drinkers in their practice. They would be able to identify those patients in whom it would be necessary to spend a little more time on brief alcohol intervention. Despite the fact that the family physician is ideally placed to do the counseling, it often doesn't happen. In fact Aira et al found in their study that family physicians were more likely to mention tobacco use in medical records than alcohol consumption. ${ }^{43}$ Physicians were more comfortable in undertaking preventative measures for smoking than alcohol. Swedish researchers, Johanssen K et al, explored the attitudes and practices of general practitioners and nurses concerning early identification of, and intervention for, alcohol-related problems in an attempt to find out why the interventions didn't happen. ${ }^{44}$ What they found was that the low level of early identification and intervention in primary care appeared to be
related more to insufficient practical skills than to attitudes. Interestingly nurses were more likely to ask about alcohol use than the doctors were in that study. ${ }^{45}$ Aalto et al had similar findings in their study in Finland, where again the barrier to the adoption of brief intervention was a feeling of insufficient knowledge to provide competent brief intervention. ${ }^{46}$

Perhaps there is also a perception that alcohol preventative measures are not effective and take too much time. Fleming et al looked at that particular issue. ${ }^{47}$ They did a randomized controlled trial in community-based primary care practices on the influence on problem drinkers of brief advice given by a family physician. The advice consisted of two, 10- to 15-minute counseling visits, delivered by physicians, using a scripted workbook that included advice, education, and contracting information. 12 months later at the follow up there was a significant decrease in seven-day alcohol consumption, a reduction in binge drinking and frequency of excessive drinking. Saitz et al had similar findings when they did an interventive study ${ }^{48}$. In their study they found that providing physicians with patients' alcohol screening results and simple individualized recommendations increased the likelihood of the physician's having a discussion with patients about alcohol during the primary care visit. That discussion in turn led to the intervention group having fewer drinks per drinking day six months later.

So in summary family physicians are the ideal people to initiate conversations about alcohol use and abuse. These interventions are brief and cost effective. The main barrier to implementing these brief interventions in family practice was a perceived lack of skills in the area. In questioning the students about their sources of knowledge about alcohol, this study tried to determine to what extent medical professionals are involved in the education of college students about alcohol here in Cork to evaluate if there is room for improvement.

### 2.3 Adolescents and alcohol

This study set out to establish what the students' attitudes towards alcohol were. In Esikhaweni, South Africa, Nkonzo-Mtembu's descriptive study of adolescents' aged twelve to nineteen showed that the students had very positive attitudes to drinking alcohol. ${ }^{49}$ They could see nothing wrong with drinking alcohol and felt that the peer group was the natural environment for drinking. In the United States too, alcohol is the drug of choice for adolescents. According to Miller at al "jocks" were more likely to engage in problem drinking than their non-jock counterparts. ${ }^{50}$ The findings of Nelson et al where similar to those of Miller. ${ }^{51}$ They too found that athletes were a particularly high-risk group at college in the United States. They were at higher risk than their peers to engage in binge-drinking, heavier alcohol use and a greater number of drinking related problems. This study set out to determine what influence sport had on Irish drinkers at UCC, (see Table 4.13.)

From the nutrition study in Cork by McElligott-Tangney P et al, the literature indicates that Irish women between fifteen and seventeen drink more than their male counterparts but we don't know what their thoughts and attitudes towards alcohol are. ${ }^{52}$ This study set out to establish that. It is important to know what the attitude of teenagers is towards alcohol in Ireland because there has been a 370\% increase in "intoxication in public places" among teenagers since 1996. ${ }^{53}$ Abuse of alcohol amongst students is a common problem in the EU. A WHO study showed students in Denmark, Finland, Ireland and the United Kingdom to have the highest rates of drunkenness. ${ }^{54} 59 \%$ of the Danish students reported having drunk alcohol on at least 40 occasions. Danish students also had the highest rates of drunkenness with $41 \%$ reporting that they had been drunk 20 times or more. Nearly one in four teenagers reported that they had been drunk more than 20 times. According to Mayor binge drinking which was defined, as having five or more alcoholic drinks in a session was common in Denmark, Ireland, Poland and the United Kingdom. Bjarnason et al in 2003 looked at the frequency of heavy alcohol use in adolescents
from Cyprus, France, Hungary, Iceland, Ireland, Lithuania, Malta, the Slovak Republic, Slovenia, Sweden and the United Kingdom. ${ }^{55}$ They examined influences such as family structure, alcohol availability and drinking patterns in the adolescents' society. What they found was those adolescents living with both biological parents engaged less frequently in heavy alcohol use than those living in any other arrangements. Living with a single mother was associated with less heavy drinking than living with a single father or with neither biological parent. National beer sales figures and societal patterns of heavy adolescent alcohol use predicted more frequent heavy drinking. In South Africa the picture is no different with school surveys reflect harmful drinking patterns among students, with $53.3 \%$ and $36.5 \%$ of male students in Durban and Cape Town, respectively, reporting heavy-drinking episodes by Grade $11^{56}$.

So in summary adolescents are increasingly abusing alcohol around the globe. Partaking in sports and living in disrupted families increases the chance that the adolescent will abuse alcohol. What is still unknown is what is happening here in Ireland. What are the local students attitudes to alcohol, what do they think puts them at risk of becoming a problem drinker? This study sets out to establish what their thoughts and attitudes towards alcohol are at UCC in Cork.

### 2.4 College students

College students too are a particularly important group to study in Ireland as the 1824 year olds are more likely to drink to excess and engage in binge drinking than the older age groups. ${ }^{57}$ Research by Gill et al in the United Kingdom, shows that drinking of college students exceeds that of their peers in the general population. ${ }^{58} \mathrm{~A}$ review of the literature in the United States showed that the average weekly alcohol
consumption by college students was five units. ${ }^{59}$ The top $17 \%$ (those students who drank heavily and frequently) consumed 68\% of all alcohol drunk by college students. This study set out to determine how much the college students at UCC were drinking. It is important to know what the students' current knowledge, attitudes and practices with regards to alcohol are in order to determine what interventions would be most beneficial. In a study done on by Knight et al on 14000 students in the U.S., $31 \%$ of students filled the criteria for alcohol abuse and $6 \%$ for alcohol dependence. ${ }^{60}$ This has implications for the health and well being of the students in the short as well as long term. In the short term binge drinking at college has been associated with an increased risk of being involved in fights, driving while intoxicated, vandalism and being the victim or perpetrator of sexual violence. ${ }^{61}$ In a California study $34.2 \%$ of full-time college students and $32.8 \%$ of part-time students drove after drinking compared to only $27.9 \%$ of non college students in the same age-group. ${ }^{62}$ Although college students were more likely than other young adults to drive while drunk, they were also more likely to wear a seatbelt as a driver or passenger. Not only do college students engage in more risk-taking behavior than their peers do but they are also at risk of fatal consequences as a result of that risk taking. Hingston et al estimated in 1998 that over 1,400 college students between the ages of eighteen to twenty four died from alcohol-related unintentional injuries, including motor vehicle crashes. ${ }^{63}$ According to surveys conducted in 1999, in the preceding year over two million of the eight million college students in the United States drove under the influence of alcohol and over three million rode with a drinking driver. Over 500,000 full-time college students were unintentionally injured under the influence of alcohol, and over 600,000 were hit or assaulted by another student who has been drinking. ${ }^{64}$ Even those students who do not drink to excess are affected by alcohol at college. ${ }^{65}$ Students residing at high drinking level colleges had a 3.6 to 1 chance of experiencing at least one problem from another students drinking. These included being assaulted; having ones property damaged or experiencing unwanted sexual
advance. Sexual assault is common and a woman has a one in four to one in five chance of being raped while in college. ${ }^{66}$ In Mohler-Kuo et al's study in the U.S., $72 \%$ of these rapes took place while the women were intoxicated. Those most at risk of being raped were under 21, white, resided in sorority houses, used illicit drugs, drank heavily in high school and attended colleges with high rates of heavy episodic drinking. According to Weitzman's study, college students who drink alcohol to excess are more likely to suffer from poor mental health and depression. ${ }^{67}$ O Neill et al found that in the long-term, alcohol abuse during the college years has been found to be a significant predictor of alcohol use disorders up to ten years later. ${ }^{68}$ In addition alcohol abuse at college by influencing overall academic achievement has been shown to influence labor market outcomes. ${ }^{69}$

Therefore intervention in the college years is vitally important both for the immediate and long term well being of the college drinker and those non-drinking students sharing their environment. Brief intervention in first year college students has been shown to be effective so intervention at this stage may have short and long-term benefits. ${ }^{70} \mathrm{As}$ is fairly obvious from this literature review there is a plethora of information on college students in the United States of America but very little work has been done on college students in Ireland. This study set out to determine if the students at UCC who are predominantly Irish Catholics are any different from their peers around the world with respect to the amount of alcohol that they drink and their risk taking behavior when inebriated. Brown et al where one of the most common issues that prompted a reduction in drinking were health related issues ${ }^{71}$. This study set out to establish why college students at UCC would abstain from alcohol.

### 2.5 Children of alcoholics

This study analyzed the children of alcoholics (COA) as a separate subgroup to see if there was a difference between those students at college and the students coming from non-alcoholic homes. Adoption studies have shown that the children of alcoholics have a 3-4 times greater risk of developing the disease irrespective of environment by following up the children of alcoholics adopted into non-drinking and drinking homes ${ }^{72}$. In addition an association has been demonstrated between family history of alcoholism and early onset of alcoholism, which makes early intervention in the college years even more important. ${ }^{73}$

Children of alcoholics have been extensively studied. At school they are more likely to drop out, perform poorly, skip school days, repeat a grade and demonstrate lower intelligence. ${ }^{74}$ They are susceptible to intellectual, cognitive and academic deficits with differences manifesting as early as the elementary school years. ${ }^{75}$ Children of alcoholics have been shown to experience precocious drug and alcohol use. ${ }^{76}$ They start drinking at an earlier age than their peers do making early intervention in this group even more important. ${ }^{77}$ In college they are found to suffer more from stress than their peers do. ${ }^{78}$ They are then more likely as adults to go on to develop anxiety disorders ${ }^{79}$. According to a literature review done by John Baer in 2002 very little research on the genetics of alcoholism has focused specifically on college students as a clinical population. What research has been done has been unable to answer the question whether children of alcoholics drink more or have more alcohol-related problems than non-children of alcoholics in college. ${ }^{80}$ Engs reported in 1990 that children of alcoholics were indistinguishable from their peers in college with respect to rates of drinking. ${ }^{81}$ Alterman, Searles and Hall ${ }^{82}$ and Havey and Dodd ${ }^{83}$ had similar findings. In contrast Kushner and Sher found that the children of alcoholics had higher rates of alcohol use disorders (35 \%) vs. children of non-alcoholics (16 \%) during their first year of college. ${ }^{84}$ Perkins and Berkowitz ${ }^{85}$ as well as Pullen ${ }^{86}$ also reported increased rates of alcohol related problems in children of alcoholics. Rodney
and Rodney reported that in the African American population male children of alcoholics at college drank more than children of non- alcoholics did. ${ }^{87}$ So the research is confusing, contradictory and dated, the most recent study having been done by Kushner et al in 1999. ${ }^{88}$

What this study set out to do was to discover if there was a difference between the children of alcoholics and those children from non-alcoholic homes in their first year of college at UCC. The aspects that were analyzed in the study were the knowledge, attitudes and practices of the students with respect to alcohol use. These were ascertained by achieving a number of objectives. According to Weitzman in the United States $10 \%$ of college students are children of alcoholics. ${ }^{89}$ This study set out to establish what percentage of college students at UCC are children of alcoholics. It is important to know the extent of the problem in order to plan what recourses are necessary to address this high-risk group.

### 2.6 Appropriate interventions.

There are various schools of thought about what the most appropriate interventions are in adolescents and who should be doing it. ${ }^{90}$

In 2001 Turrissi et al looked at interventions implemented by parents. ${ }^{91}$ The parents were educated on how to convey information about drinking to their children prior to their attending college. On follow up there was a significant difference between the intervention and control groups with regards to drinking activities and drinking related consequences in their first semester. As previously discussed family physicians are also in a position to undertake preventative measures and educate their adolescents about the dangers of alcohol prior to their attendance at college. This intervention can be brief and easy to assimilate into a routine consult. ${ }^{92}$ This study set out to
establish where the students got their knowledge of alcohol. Those would be the people to target when implementing changes.

## Chapter 3

## Methods

### 3.1 Introduction

The aim of this chapter is to describe the methods used in the collection of the data. The chapter will include a description of the study design and of the site of the study. The selection of study population has already been justified. The chapter includes an explanation of the decision on sample size. It includes a description of the sampling method and how data collection actually took place. There is a justification of the selection of measuring tool and a description of the pilot study. Ethical clearance is also discussed.

### 3.2 Study Design: -

A cross sectional descriptive study was done.

### 3.3 Site of Study: -

The study took place at University College Cork (UCC) in Ireland. UCC was chosen for practical reasons. It was the university closest to where the researcher was working which made it convenient to administer and collect completed questionnaires. It also meant that the study had more relevance to the researcher as that was the population with which she was dealing on a daily basis. The local supervisor of the study was head of the department of family medicine there and was
able to facilitate interactions with the various departments. UCC offers multiple degrees and has students from all socio-economic groups. Students come to UCC from all over Ireland and for the Irish themselves the tuition is free. There are some non-nationals at UCC and they would have had to pay fees. There may be differences between these students and those attending the other universities in Ireland, but the study aims to study the first year students at Cork only and makes no claims that the results are applicable to students at the other universities. There were a total of 2462 first year students attending UCC in the year the study was done. 848 of these students were in the arts faculty, 482 in commerce, 145 engineering, 105food science and technology, 126 in law, 295 in medicine and 461 in science. It was from this group of first year students that the study population was selected.

### 3.4 Study Population: -

The study population consisted of 2462 college students in their first year of study at UCC. As already mentioned students are an important group to study because they are more likely to abuse alcohol than their peers are. ${ }^{93}$ They are therefore more at risk of developing long-term alcohol abuse problems than their peers. ${ }^{94}$ Intervention at this stage may have short and long-term benefits especially in those children who already have an additional risk factor viz. an alcoholic parent.

First year students were selected, as it was assumed that they were less likely to have an established drinking habit. It was also for this reason that students over the age of 35 were excluded from the study. Brief intervention in first year college students has been shown to achieve long term benefits. ${ }^{95}$ It would be important to know the current knowledge, attitudes and practices amongst first year students with regards to alcohol use in order to determine what interventions would be most beneficial. In summary, the inclusion criteria were that the respondents had to be
students, in first year at college, at UCC. The exclusion criterion was those students over 35 years of age.

### 3.5 Sampling: -

### 3.5.1.Sample size: -

The study data was collected in the months of November 2003 to February 2004. A total of 2462 first year students were registered at UCC in the months that the study was done. 848 of them were in the arts faculty, 482 in commerce, 145 engineering, 105-food science and technology, 126 in law, 295 in medicine and 461 in the science faculty. The actual numbers of children of alcoholics at UCC was unknown prior to the study. A study done in children in the US found that approximately one out of four children ( $25 \%$ ) under the age of 18 is exposed to alcohol abuse and dependence in the family. ${ }^{96}$ Here in Northern Ireland a study done in 1993 found that $15,8 \%$ of men and $5,7 \%$ of women had a CAGE score of 3 or more. ${ }^{97}$ Verbal correspondence with Rolande Anderson, director of alcohol research at the Irish College of General Practitioners, confirmed that the current rate of alcoholism in the south of Ireland is about $20 \%$. The sample size was therefore calculated by using the expected true alcoholism rate of 20 \%. Assuming a 95\% confidence interval, 5\% error and 20 \% expected true alcoholism rate, the sample size required was 224 . Correcting this for an $80 \%$ response rate, the sample size increased to 280 . Correcting for $11 \%$ ineligibility in the sample (found by dividing the non-first time entrants with first time entrants), the final sample size decided on was 315 . First time entrants are those students who are doing their first degree. Using a proportional stratified sample, the numbers required from each faculty was arts 108, commerce 62, engineering 19, food science and technology 13, law 16, medicine 38 and science 59. The
representation for each faculty in the sample was to be in the same proportion as that in the population.

### 3.5.2 Sampling method:

Permission was obtained from the registrar's office before commencing the study. The offices of the deans in the various faculties were approached and permission obtained. In the original planning the numbers of students required in each faculty were as shown in Table 3.1.

Table 3.1 Numbers of students in each faculty vs. numbers required for sample

| Courses | Numbers of students |  | Number of students <br> required N= 305 |  |
| :--- | :--- | :--- | :--- | :--- |
|  | Frequency | $\%$ | Frequency | $\%$ |
| Arts | 848 | 34,44 | 108 | 35,41 |
| Commerce | 482 | 19,58 | 62 | 20,33 |
| Engineering | 145 | 5,89 | 19 | 6,23 |
| Food | 105 | 4,26 | 13 | 4,26 |
| Science |  |  |  |  |
| Law | 126 | 5,11 | 16 | 5,25 |
| Medicine | 295 | 11,98 | 38 | 12,46 |
| Science | 461 | 18,72 | 49 | 16,07 |
| Total | 2462 | 100 | 305 | 100 |

### 3.5.2.1 Arts faculty: -

The arts faculty consists of the courses shown in Table 3.2.

Table 3.2. Courses and cut off points in the arts faculty

| Courses | Numbers of first time <br> entrants <br> $\mathrm{N}=873$ | Cut off <br> points for <br> admission |
| :--- | :--- | :--- |


|  | Frequency | $\%$ |  |
| :--- | :--- | :--- | :--- |
| BA | 582 | 66,67 | 400 |
| BA(Arts Music) | 28 | 3,21 | 415 |
| BA(drama and <br> theatrical studies) | 16 | 1,83 | 425 |
| BA(early childhood <br> studies) | 27 | 3,09 | 400 |
| BA(European <br> studies) | 20 | 2,29 | 330 |
| BA(French) | 16 | 1,83 | 340 |
| BA(German) | 28 | 3,21 | 290 |
| BA(Italian) | 12 | 1,37 | 300 |
| BA(Spanish) | 11 | 1,26 | 375 |
| BA(Psychology) | 33 | 3,78 | 520 |
| Music | 28 | 3,21 | 360 |
| Social Science | 72 | 8,25 | 400 |
| Total | 873 | 100 |  |

The cut off points for admission are a numerical score used as entrance standard for the courses. On leaving school the students' final marks are translated into a numerical value. Those with a higher mark will have a higher number of points. So in courses like medicine and law the cut off points would be relatively high. This means that to get into those courses the student would have had to get a good mark in the final year school exams. The reason for including the cut off points in the tables was to show those students who had done well at school but for some reason had chosen courses that were below their ability. The total numbers of students actually registered in the arts faculties was higher than expected because the initial data received from the admissions office was incorrect. However as the difference in number was not statistically significant the study went ahead using the original numbers of students' required. 108 students were required from the faculty of arts. The names of the different degrees together with the numbers of students in each were written on separate pieces of paper. The pieces of paper where then thrown into a hat and a course drawn at random. Social science was drawn first. As there are only 72 students in social science another draw was done and music selected. To ensure a sufficient number of students the whole class needed to be sampled in both music and social science. Every consecutive student attending the lectures that day would be asked to fill in the questionnaire. Those students not at lectures that
day were excluded from the study. The heads of both departments were approached and permission to proceed with the study obtained.

### 3.5.2.2 Faculty of Commerce

The faculty of commerce offers the courses shown in Table 3.3

Table 3.3. Courses and cut off points in the commerce faculty

| Courses | Numbers of first time <br> entrants <br> N= 482 |  | Cut off <br> points for <br> admission |
| :--- | :--- | :--- | :--- |
|  | Frequency | $\%$ |  |
| B.Comm | 133 | 27,59 | 445 |
| B.Comm(European) <br> with French | 18 | 3,73 | 445 |
| B.Comm(European) <br> with German | 13 | 2,70 | 395 |
| B.Comm(European) <br> with Irish | 10 | 2,07 | 435 |
| B.Comm(European) <br> with Italian | 11 | 2,28 | 370 |
| B.Comm(European) <br> with Spanish | 20 | 4,15 | 415 |
| B.Sc. (accounting) | 55 | 11,41 | 460 |
| B.Sc. (BIS) | 118 | 24,48 | 425 |
| B.Sc. (Finance) | 59 | 12,24 | 445 |
| B.Sc. in government <br> in public policy | 45 | 9,33 | 425 |
| Total | 482 | 100 |  |

62 students were required from the faculty of commerce. The names of the different degrees together with the numbers of students in each were written on separate pieces of paper. The pieces of paper where then thrown into a hat and drawn at random. B.Sc. in government and public policy was drawn first. As there are only 45 students in that course, another draw was done. The next course drawn was B.Sc. accounting. The 55 students in that course meant that sufficient students could be sampled in the faculty of commerce from those two courses. To ensure a sufficient number of students the whole class in both departments needed to be sampled. Every consecutive student attending the lectures would be asked to fill in the questionnaire. Permission was obtained from the heads of department to proceed with the study.

### 3.5.2.3 Faculty of Engineering

The faculty of engineering offers the courses shown in Table 3.4

Table 3.4 Courses and cut off points in the engineering faculty

| Courses | Numbers of first time <br> entrants <br> N= 145 |  | Cut off <br> points for <br> admission |
| :--- | :--- | :--- | :--- |
|  | Frequency | $\%$ |  |
| BE (Civil <br> Engineering) | 60 | 41,38 | 490 |
| BE (Electrical <br> Engineering) | 54 | 37,24 | 335 |
| BE (Microelectronics) | 9 | 6,21 | 345 |
| BE (Process <br> Engineering) | 22 | 15,17 | 475 |
| Total | 145 | 100 |  |

19 students were required from the faculty of engineering. The names of the different degrees together with the numbers of students in each course were written on separate pieces of paper. The pieces of paper where then thrown into a hat and drawn at random. BE electrical engineering was drawn first. As there are 54 students in that course no further draw was done at that stage. Permission was obtained from the head of department in the faculty of engineering to proceed with the study. However when the first year lecturer was approached about the study he was uncomfortable to hand out the questionnaires. He would also not allow time in his lectures for the questionnaire to be handed out. So as the researcher was unable to gain access to the electrical engineering students the names were put back in the hat minus the electrical engineering course and a course redrawn. Civil engineering was selected. There were 60 students in this course. As there were a larger number of students in the class a smaller tutorial would be used to do the sampling and every consecutive student in that tutorial would be sampled. Permission was obtained from the head of department to proceed with the study.

### 3.5.2.4 Faculty of Food Science and Technology

The faculty of food science and technology offers the courses shown in Table 3.5

Table 3.5 Courses and cut off points in the food science and technology faculty

| Courses | Numbers of first time <br> entrants <br> N= 105 |  | Cut off <br> points for <br> admission |
| :--- | :--- | :--- | :--- |
|  | Frequency | $\%$ |  |
| B.Sc. ( Food <br> business) | 43 | 40,95 | 355 |
| B.Sc. (Food <br> Science and <br> technology) | 36 | 34,29 | 345 |
| B.Sc. ( Nutritional <br> Sciences) | 26 | 24,76 | 415 |
| Total | 105 | 100 |  |

13 students were required from the faculty of food science and technology. The names of the different degrees together with the numbers of students in each course were written on separate pieces of paper. The pieces of paper where then thrown into a hat and drawn at random. B.Sc. (food science and technology) was drawn. As there were sufficient students in that course for the sample, no further draw was done. There were no smaller tutorials so each consecutive student in that department would be sampled during a lecture. Permission was obtained from the head of department to proceed with the study.

### 3.5.2.5 Faculty of Law

The law faculty offers the courses shown in Table 3.6

Table 3.6 Courses and cut off points in the law faculty

| Courses | Numbers of first <br> time entrants <br> N= 126 |  | Cut off points <br> for admission |
| :--- | :--- | :--- | :--- |
|  | Frequency | $\%$ |  |
| BCL | 92 | 73,02 | 505 |
| BCL (Law and <br> French) | 15 | 11,90 | 520 |
| BCL (Law and <br> German) | 13 | 10,32 | 475 |
| BCL (Law and Irish) | 6 | 4,76 | 500 |


| Total | 126 | 100 |  |
| :--- | :--- | :--- | :--- |

16 students were required from the faculty of law. No selection was done for this group, as it would have been difficult to separate the law and French students from the law and German and law and Irish students. The students would be sampled during a small tutorial where there would be a good mix off all the courses and every consecutive student attending that tutorial would be asked to fill in a questionnaire.

### 3.5.2.6 Faculty of Medicine

The faculty of medicine offers the courses shown in Table 3..

Table 3.7 Courses and cut off points in the faculty of medicine

| Courses | Numbers of first time <br> entrants <br> N= 295 |  | Cut off <br> points for <br> admission |
| :--- | :--- | :--- | :--- |
|  | Frequency | $\%$ |  |
| BDS | 23 | 7,80 | 530 |
| Medicine | 90 | 30,51 | 560 |
| B.Sc. <br> Nursing(General) | 133 | 45,08 | 405 |
| B.Sc. Nursing( <br> Mental Handicap) | 20 | 6,78 | 335 |
| B.Sc. Nursing <br> (Psychiatric) | 29 | 9,83 | 355 |
| Total | 295 | 100 |  |

38 students were required from the faculty of medicine. The names of the different degrees together with the numbers of students in each course were written on separate pieces of paper. The pieces of paper where then thrown into a hat and drawn at random. BDS dentistry was drawn first. As there were insufficient students in the dentistry course to make up the required numbers another draw was done. B.Sc. psychiatric nursing was then selected. The heads of department were approached and permission was obtained from the head of the department of dentistry to proceed with the study. The acting head of department in the department
of psychiatric nursing was unhappy to allow the study to take place so another draw was done excluding the dentistry and psychiatric nursing courses. Medicine was selected and the head of department approached and permission obtained to proceed with the study. The students were to be sampled during a lecture. To ensure a sufficient number of students the whole class in both departments needed to be sampled. Every consecutive student attending the lectures would be asked to fill in the questionnaire.

### 3.5.2.7 Faculty of Science

The faculty of science offers the courses shown in Table 3.7

Table 3.7 Courses and cut off points in the faculty of science

| Courses | Numbers of first time <br> entrants N= 461 |  | Cut off points for <br> admission |
| :--- | :--- | :--- | :--- |
|  | Frequency | $\%$ |  |
| B.Sc. (Biological and <br> Chemical Science) | 187 | 40,56 | 390 |
| B.Sc.(Chemical <br> Science) | 27 | 5,87 | 365 |
| B.Sc.( Computer <br> Science) | 116 | 25,16 | 300 |
| B.Sc.(Environmental <br> Science) | 62 | 13,45 | 370 |
| B.Sc.(Genetics) | 23 | 4,99 | 425 |
| B.Sc.(Mathematical <br> Science) | 24 | 5,21 | 495 |
| B.Sc.(Physics and <br> Astrophysics) | 22 | 4,77 | 485 |
| Total | 461 | 100 |  |

49 students were required from the faculty of science. The names of the different degrees together with the numbers of students in each course were written on separate pieces of paper. The pieces of paper where then thrown into a hat and drawn at random. B.Sc. (Computer Science) was drawn. As there were 116 students in this course no further selection was done at this stage. The students would be sampled during a tutorial and every consecutive student attending that tutorial would
be sampled. The head of department was approached and permission was obtained to proceed with the study.

### 3.6 Data Collection: -

In addition to a telephonic briefing on how to administer the questionnaire, a letter was also attached to the front of the questionnaires explaining how the researcher would have liked the sampling to take place. However in an attempt to minimize the disruption to the classes it was left to the individual lecturers to decide how to administer the questionnaire. Questionnaires were posted to the department secretaries of each faculty who then gave the questionnaires to the lecturers of the first year classes to hand out. The lecturers were asked to indicate how many questionnaires they had handed out in order to calculate the response rate.

### 3.6.1 Faculty of arts

The department of social science allocated time at the beginning of a lecture for students to fill in the questionnaire. The questionnaires were then collected by the lecturer and returned to the researcher by pre paid envelope. The department of music kept the questionnaires in the department office and asked students to fill them in if they were in the office. Those too were returned by post. The lecturers were asked to indicate how many questionnaires they had handed out in order to calculate the response rate.

### 3.6.2 Faculty of Commerce

The department of government and public policy asked the researcher to hand the questionnaire out at the start of a lecture. Time was allocated for this to be done and the questionnaires handed out to the students by the researcher with the help of the first year lecturer. Every questionnaire was then collected completed or not. The first
year lecturer in the department of accounting elected to hand the questionnaires to the students at the beginning of a lecture. The class representatives then collected all the questionnaires and returned them to the department secretary at the end of the day. She posted all the questionnaires completed or not onto the researcher.

### 3.6.3 Faculty of Engineering

The department of civil engineering handed out the questionnaires to its first year students at the start of a lecture. Time was allocated for the questionnaires to be filled in. All the forms were then collected by the lecturer and posted on to the researcher by the department secretary.

### 3.6.4 Faculty of Food Science and Technology

The first year lecturer in the department of food science and technology elected to hand out the questionnaires at the start of a lecture. Time was allocated for them to be completed and then the lecturer returned all the forms to the researcher by post.

### 3.6.5 Faculty of Law

The lecturer in the department of law handed out the questionnaires to students during a small tutorial. These were then sealed in individual envelopes and collected by the researcher from the department.

### 3.6.6 Faculty of Medicine

The dentistry and medical students were both sampled at the start of their physiology lectures. Time was allocated for completion of the questionnaire and the lecturer then collected these. All questionnaires completed or not were then hand collected by the researcher from the lecturer.

### 3.6.7 Faculty of Science

The first year lecturer in the department of computer science handed out the questionnaires at the start of a lecture. The students were then asked to return the forms to the class representative who returned them to him. All the questionnaires were then returned to the researcher by post.

### 3.6.8 Initial Data Analysis

Once all the questionnaires had been returned the statistician analyzed the data. Three problems were noted at that stage. The first is that the incidence of parental alcoholism as defined by a CAST-6 score of 3 or more was found to be lower than predicted. There were only 32 positives in the initial sample. The statistician felt that this was too small a group to use for comparative purposes. Also insufficient numbers of students in the arts and science faculties had been sampled. Third there was a large numbers of students in the sample who had achieved high points in the leaving certificate and it was felt that might influence the results. It was for these reasons that the researcher decided to re-sample some more students. The course selected for re-sampling from the arts faculty was BA (German). This was done in a non-random sample so to avoid re-sampling the same students. German was selected because it was the arts course that had the lowest number of cut off points for entry. Permission was obtained from the head of department. Unfortunately the German lecturer was unable to hand out the questionnaires due to ill health. When he was well enough to return to work it was exam time and he felt that they had too much catching up to do for them to spare time for questionnaires. So the German students were never sampled.

The science department was approached again for permission to resample its students. As it was approaching exam time permission was denied. The study was then terminated in order to avoid disrupting classes at that time of year.

### 3.6.9 Measuring Tool: -

A self-administered questionnaire was used. See Appendix 1, page 86. The questionnaire consisted of four main sections. The first section obtained demographic data on the students. They were asked about their age, sex, and year of study, degree, nationality and county of origin. The second part of the questionnaire asked about their drinking habits. They were asked about the average number of units of alcohol drunk, the age at which they started drinking, whether they had ever driven drunk, about membership at alcohol support groups and the four CAGE questions. The third part of the questionnaire consisted of the CAST-6 questions to establish the presence of parental alcoholism. Lastly the respondents were asked questions about their knowledge and attitudes to alcohol. They were asked how many units of alcohol were a safe number to drink per week, whether they felt they were at risk of developing a drinking problem, what factors increased ones risk of developing alcoholism and lastly where they gained their knowledge on alcohol.

Alcoholism although common is often a difficult diagnosis to make and there are number of tools available to aid in the diagnosis. Examples of these tools are the Alcohol Use Disorders Identification Test (AUDIT, with various cut-off scores), the CAGE (a four-question screening tool), and a 10-question version of the Michigan Alcoholism Screening Test (BMAST). ${ }^{98}$ The students were asked about the number of units they were drinking on average per week. The answers to that question gave an indication of the amount of alcohol drunk, but no indication of the effect that drinking alcohol had on the students. It is for this reason that the CAGE questionnaire was used in the study. The CAGE has a sensitivity of $43 \%-94 \%$ and specificity of
$70 \%-97 \%$ in detecting alcohol abuse and dependence ${ }^{99}$. It consists of four questions. Answering yes to one of the questions is associated with a sensitivity of $42 \%$, a specificity of $87 \%$, a positive predictive value of $36 \%$ and a negative predictive value of $90 \%$ for detecting problem drinking. ${ }^{100}$ Answering yes to the question about whether the respondent has an eye-opener drink to get going in the morning indicates a dependence on alcohol. Aertgeerts et al did a study on the value of the CAGE questionnaire in detecting alcohol problems in college freshmen. ${ }^{101}$ They found that replacing the question on feeling angry when criticized about drinking with a question about often driving under the influence increased the positive likelihood ratio of the CAGE to 8.7 and negative likelihood ratio to $0.04{ }^{102}$ For this reason the question on driving under the influence was included in the questionnaire as well as the four standard questions of the CAGE. A variety of screening methods is available for detection of alcohol problems. Fiellen et al compared a number of these and concluded that the Alcohol Use Disorders Identification Test (AUDIT) was most effective in identifying subjects with at-risk, hazardous, or harmful drinking (sensitivity, $51 \%-97 \%$; specificity, $78 \%-96 \%)^{103}$. While the CAGE questions proved superior for detecting alcohol abuse and dependence (sensitivity, 43\%-94\%; specificity, 70\%-97). These 2 formal screening instruments were consistently found to be better than other methods, including questions about quantity of alcohol drank and frequency of drinking ${ }^{104}$. As the AUDIT is a much longer questionnaire than the CAGE (ten questions versus four), for the purposes of this study the CAGE questions were used instead. The four questions being more easily assimilated into the studies questionnaire. The differences between the AUDIT and the CAGE in detecting alcohol problems are not significant enough to warrant the use of the AUDIT over the CAGE.

The CAST-6 screening test had also been incorporated into the questionnaire to identify the children of alcoholics. Study findings indicated that the CAST-6 is a reliable means of finding the children of alcoholics with low potential for error. ${ }^{105}$ The Children of Alcoholics Screening Test (CAST) has a high internal consistency (. 88 and .90 ) and test-retest reliabilities (.88) when administered to adolescents from intact alcoholic families. ${ }^{106}$ It consists of 6 questions and answering yes to 3 or more of the questions means that the child is more than likely to have an alcoholic parent. According to the CAST-6 questionnaire children who score 0-1 are unlikely to have an alcoholic parent. A score of $3+$ confirms that the child has an alcoholic parent. For the purpose of the study only those students who score 3 and above were classified as having an alcoholic parent thereby eliminating some of the grey areas. The CAST-6 measures children's feelings, attitudes, perceptions and experiences related to their parents' drinking behavior. Although there might be gray areas between normal and problem drinkers one would assume that their children would easily identify the alcoholics. This is born out by the study done by Cuijpres et al where it was found that a single question asking whether the subjects' parents had alcohol problems was accurate in identifying parental alcoholism ${ }^{107}$. Both the CAST-6 and CAGE questionnaires were designed to be administered but for the purposes of this study they were self-administered as part of the questionnaire. This may have influenced the answers to some extent in that the students may have found it easier to be honest if not in a one -on -one situation. However there may have been some misunderstanding of the questions that would not have arisen had the questionnaire been administered instead of selfadministered.

### 3.6.10 Pilot study: -

A pilot study was done before the final method of sampling was decided on. This was carried out on the current class of $5^{\text {th }}$ year medical students. The reason for choosing them was a practical one. The supervisor of the study was head of the department of Family Medicine, which made it easy to gain access to the students. On the negative side the five years spent in medical school and exposure to research methodology might have influenced their response to the questionnaire. So although they were able to offer some sensible suggestions about the questionnaire they might not have been an ideal group to use for a pilot of a study on first year students. There were 100 students doing a rotation in Family Medicine at that time and 57 of those students were sampled for the pilot study during a tutorial. The questionnaires were handed out and the students given time to fill them in. The questionnaires were then collected and the data entered into Epi-info 6.04. The pilot study was used to assess the questionnaire and the practicalities of data entering. Minor adjustments were made to the questionnaire and methods of data entry prior to starting the final study. Question 6 was altered on the questionnaire. It initially read "if you are Irish, which county are you originally from?" In the pilot study some of the students named more than one county. So the words 'name one only' were added to that question.

### 3.7 Ethics

Ethics approval was obtained from the Committee for Research on Human Subjects, Health Sciences Faculty, University of the Witwatersrand, South Africa. The ethics clearance number is - M03-06-11. See appendix 3 . In addition the ethics committee at UCC was approached for ethics approval but after reading the proposal the committee felt that it was unnecessary to apply for ethical clearance there. Asking
about parental drinking habits is a very sensitive issue and could have opened some wounds. A support system based at the student counseling service at the university was in place for the students should it have been necessary. The counseling services were consulted prior to the study and their telephone number was on detachable information sheet attached to the questionnaire. The information sheet invited the students to make use of the student counseling services if they need to. See appendix 2. The issue of identification of high risk for alcoholism and high risk behavior had the potential to cause difficulties for some of the students and merely providing the students with the students counseling services telephone number might not have been sufficient support. This issue was discussed as part of the telephonic briefing of the lecturers prior to them handing out the questionnaires. Some of the lecturers were confident that they would be able to deal with any problems on the spot and agreed to be available to the students after the lecture for any discussions that could arise out of the questionnaire. Other lecturers were less comfortable with that role. The electrical engineering lecturer was reluctant to hand out the questionnaires because he felt that he was unable to deal with any problems that may have developed. His class was therefore not sampled. The law lecturer requested that the researcher be available at the time of handing out the questionnaire should there be any questions or problems with the students as a result of taking part in the study. The government and public policy lecturer asked that the researcher hand out the questionnaires. All of the lecturers' requests were accommodated in order to minimize any potential negative reaction of the students to filling in the questionnaire.

### 3.7 Conclusion

In summary this chapter included a description of study design, site of the study and the study population. It described the sample size, methods of sampling and data
collection. There was a justification of the selection of measuring tool and a description of the pilot study. Ethical clearance was also discussed.

## Chapter 4

## Results

### 4.1 Response rate

431 questionnaires were handed out. Of those 374 were returned completed. Hence the overall response rate was $86,8 \%$. After excluding those students over the age of 35 who were ineligible for the study the response rate was $86,4 \%$. The response rates within the individual faculties are shown in Figure 4.1.


Figure 4.1 Responses from the various faculties vs. numbers required in the original planning of the study

There was a good response rate within the majority of faculties with the exception of the commerce and science faculties. These results are shown in Table 4.1. The " n " number varies throughout the tables as not all students answered all the questions.

Table 4.1 Response rates within the various faculties

| Faculty | Numbers of <br> responses N= 362 |  | Response <br> Rate |
| :--- | :--- | :--- | :--- |
| Frequency | $\%$ |  |  |
| Arts | 81 | 22,38 | 98,78 |
| Commerce | 64 | $\mathbf{1 7 , 6 8}$ | $\mathbf{6 , 5 4}$ |
| Engineering | 46 | 12,71 | 93,88 |
| Food Science and <br> Technology | 22 | 6,08 | 100 |
| Law | 17 | 4,69 | 100 |
| Medicine | 122 | 33,70 | 98,39 |
| Science | $\mathbf{1 0}$ | 2,76 | 47.62 |
| Total | $\mathbf{3 6 2}$ |  |  |

### 4.2 Age of respondents

The mean age of the 373 respondents who answered the question was 19,4 , with the median being 19 and the mode 18. The range was 17 to 33 .

### 4.3 Gender distribution

The gender distribution of the study population as a whole was $54,8 \%(203)$ females' and 45,2 \% (171) males'. Breaking this down into children of alcoholics (COA) and children of non-alcoholics (NCOA) no statistical difference between the two was found with regards to gender. $\left(\chi^{2}=0.008, d f=1, p\right.$ value $=0.93$. $)$

### 4.4 Year of study

374 of respondents ( $100 \%$ ) were in their first year of study.

### 4.5 Degree of study

Table 4.2 Courses for which the respondents were registered

| Courses | NCOA | $N=325$ | COA | $N=37$ | Points required for course |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Frequency | \% | Frequency | \% |  |
| accounting | 17 | 5,23 | 1 | 2,70 | 460 |
| arts | 53 | 16,3 | 7 | 18,92 | 400 |
| civil engineering | 44 | 13,54 | 2 | 5,41 | 490 |
| computer science | 7 | 2,15 | 1 | 2,70 | 300 |
| dentistry | 32 | 9,85 | 3 | 8,11 | 535 |
| food science | 17 | 5,23 | 5 | 13,51 | 345 |
| government and public policy | 42 | 12,92 | 4 | 10,81 | 425 |
| languages | 9 | 2,77 | 5 | 13,51 | 290 |
| law | 15 | 4,62 | 2 | 5,41 | 500 |
| mathematical science | 1 | 0,31 | 0 | 0 | 495 |
| medicine | 81 | 24,92 | 6 | 16,22 | 560 |
| music | 2 | 0,62 | 0 | 0 | 360 |
| psychology | 3 | 0,92 | 1 | 2,70 | 520 |
| sociology | 1 | 0,31 | 0 | 0 | 400 |
| commerce | 1 | 0,31 | 0 | 0 | 450 |
| Total | 325 | 100 | 37 | 100 |  |

There is a relatively high proportion of children of alcoholics in the arts ( $p$ value $=0.022$ ) and food science faculties ( $p$ value $=0.035$ ). This was calculated by the statistician using the different numbers of students in each faculty.

### 4.6 Points achieved in the leaving certificate

The average number of points achieved in the leaving certificate by the 306 respondents who answered the question was 495. Leaving certificate points are a scoring system used to grade what would be the equivalent of the matriculation results. The highest possible score of 600 points would equate to six A's in South Africa. The difference between children of alcoholics and children of non-alcoholics is
demonstrated in Table. 4.3. There is no statistical difference between the two groups.
The Mann-Whitney U was used because the graph was not a true Gaussian curve. There is quite a difference in the interquartile ranges and the statistician felt that the Mann-Whitney U would give a better comparison between the two groups. However there was no statistical difference between the COA and NCOA using both the pvalue and the Mann- Whitney $U$. The $p$-value indicates whether there is a true difference between two values or whether the difference observed is merely due to random variation. The conventionally accepted limit of statistical significant is a pvalue $<0.05 .{ }^{108}$

Table. 4.3 Points achieved in the leaving certificate by NCOA vs. COA

|  | Children of non-alcoholics | Children of alcoholics |
| :--- | :---: | :---: |
| Mean | 496 | 483 |
| Median * | $\mathbf{5 1 0}\left(\begin{array}{l}\text { Interquartile range, } \\ \text { IQR =437.5-560.0) }\end{array}\right.$ <br> 495( IQR= 428.8-547.5) <br> Maximum$\quad 570$ | 550 |
| Minimum | 600 | 600 |

*(Mann-Whitney U = 3770, p-value 0.205)

### 4.7 Nationality

The majority of the 368 respondents were Irish. They made up 83,97\%(309) of the sample.

### 4.8 Counties of origin of the Irish students

Of the 299 Irish students who indicated which county they came from, 190 (64\%) came from Cork originally as is shown in Table 4.4.

Table 4.4 Counties of origin of the Irish students

| County of Origin | Distribution of Irish students within the <br> counties N=299 |  |
| :--- | :--- | :--- |
|  | Frequency | $\%$ |
| Carlow | 1 | 0,33 |
| Clare | 9 | 3,01 |


| Cork | 190 | 63,54 |
| :--- | :---: | :---: |
| Dublin | 4 | 1,33 |
| Galway | 5 | 1,67 |
| Kerry | 21 | 7,02 |
| Kilkenny | 8 | 2,67 |
| Limerick | 18 | 6,02 |
| Louth | 1 | 0,33 |
| Offaly | 2 | 0,66 |
| Sligo | 1 | 0,33 |
| Tipperary | 20 | 6,68 |
| Waterford | 15 | 5,01 |
| Wexford | 4 | 1,33 |
| Total | 299 | 100 |

The majority of the non-Irish respondents were Malaysian as shown in Table 4.5

Table 4.5. Nationalities of the non-Irish students

| Nationality | Numbers of <br> respondents N= 42 |  |
| :--- | :---: | :---: |
|  | Frequency | $\%$ |
| American | 1 | 1,88 |
| Austrian | 1 | 1,88 |
| British | 5 | 9,43 |
| Canadian | 10 | 18,86 |
| Chinese | 1 | 1,88 |
| Dutch | 1 | 1,88 |
| Emirates | 1 | 1,88 |
| German | 2 | 3,77 |
| Guanian | 1 | 1,88 |
| Iraqi | 1 | 1,88 |
| Korean | 1 | 1,88 |
| Kuwaiti | 6 | 11,32 |
| Malaysian | 17 | 32,07 |
| Omani | 1 | 1,88 |
| South African | 2 | 3,77 |
| Sudanese | 1 | 1,88 |
| Trinidadian | 1 | 1,88 |
| Total | 42 | 100 |

### 4.9 Alcohol consumption

The students were asked, "With regard to alcohol consumption, which phrase best describes you?" They were given a choice of one of three options, non-drinker,
regular drinker or occasional drinker. Of the 370 respondents the majority, 171(45 \%) considered themselves occasional drinkers, 144(40\%) considered themselves regular drinkers, and 55(15\%) considered themselves to be to be non-drinkers. These results are represented by Figure 4.2.


Figure 4.2 Students perceptions of their drinking habits

The responses to the questions about the students perception of their own drinking habits was compared in the COA vs the NCOA as shown in Table 4.6. The difference between the two groups was not statistically significant.

Table 4.6 Children of alcoholics vs children of non-alcoholics perception of their own drinking habits

| Students perceptions <br> of their drinking | Children of non- <br> alcoholics N=332 |  | Children of <br> alcoholics <br> $\mathbf{N = 3 7}$ |  |
| :--- | :--- | :--- | :--- | :--- |
|  | Frequency | $\%$ | Frequency | $\%$ |
| Regular drinkers | 125 | 37,65 | 19 | 51,35 |
| Occasional drinkers | 155 | 46,69 | 15 | 40,54 |
| Non drinkers | 52 | 15,66 | 3 | 8,11 |
| Total | 332 | 100 | 37 | 100 |

( $\chi^{2}$ 1.691, df 2, p-value $=0.429$ )

The nationality of the 353 respondents vs. their perception of drinking habits is shown in Table.4.7. The majority $92,05 \%$ (278) of the Irish students considered themselves drinkers as opposed to the next largest group the Malaysians. 100\% of the 17

Malaysian students considered themselves non-drinkers.
Table.4.7 Nationality vs drinking habits

| Nationality | Non Drinkers N=52 |  |  | Occasional Drinkers <br> $\mathbf{N}=\mathbf{1 6 0}$ |  | Regular Drinkers <br> $\mathbf{N = 1 4 1}$ |  |
| :--- | :---: | :---: | :---: | :--- | :--- | :--- | :---: |
|  | Frequency | $\%$ | Frequency | $\%$ | Frequency | $\%$ |  |
| American | 0 | 0 | 1 | 100 | 0 | 0 | 1 |
| British | 2 | 40 | 2 | 40 | 1 | 20 | 5 |
| Canadian | 0 | 0 | 6 | 60 | 4 | 40 | 10 |
| Chinese | 0 | 0 | 1 | 100 | 0 | 0 | 1 |
| Dutch | 0 | 0 | 0 | 0 | 1 | 100 | 1 |
| Emirates | 1 | 100 | 0 | 0 | 0 | 0 | 1 |
| German | 0 | 0 | 2 | 100 | 0 | 0 | 2 |
| Guanian | 0 | 0 | 0 | 0 | 1 | 100 | 1 |
| Iraqi | 0 | 0 | 2 | 100 | 0 | 0 | 2 |
| Irish | 24 | 7,95 | 144 | 47,68 | 134 | 44,37 | 302 |
| Korean | 0 | 0 | 1 | 100 | 0 | 0 | 1 |
| Kuwaiti | 4 | 100 | 0 | 0 | 0 | 0 | 4 |
| Malaysian | 17 | 100 | 0 | 0 | 0 | 0 | 17 |
| Omani | 1 | 100 | 0 | 0 | 0 | 0 | 1 |
| South African | 1 | 50 | 1 | 50 | 0 | 0 | 2 |
| Sudanese | 1 | 100 | 0 | 0 | 0 | 0 | 1 |
| Trinidadian | 1 | 100 | 0 | 0 | 0 | 0 | 1 |
| Total | 52 |  | 160 |  | 141 |  | 353 |

### 4.10 Age started drinking

The students were asked at what age they had started drinking. The average ages of the 373 respondents are shown in Table 4.8. There was no statistical difference between the COA and NCOA.

Table 4.8 Differences between the age at which NCOA started drinking vs. the
COA

|  | NCOA N=336 | COA N=37 |
| :--- | :---: | :---: |
| Mean age of starting drinking | 15,70 years | 15,36 years |
| Median age | 16 years | 16 years |
| Mode | 16 years | 16 years |


| Minimum age | 10 years | 12 years |
| :--- | :--- | :--- |
| Maximum age | 25 years | 19 years |

### 4.11 Average number of units drunk

Those students who drank alcohol were asked to estimate the number of units that they drank per week. 312 of the 319 students who drank answered this question. The response rate was $97,81 \%$. The mean number of units of alcohol drunk per week in the 312 respondents was $11,86.175(82,2 \%)$ of all the 203 female students drank within the recommended limits for females (<15 units per week). 144(84,21\%) of all the 171 male students stayed within the recommended limits for males (<22 units per week) as shown in Figure 4.3. ${ }^{109}$


Figure 4.3 Percentages of students in the various categories of average units drunk per week.

The responses of the 37 COA was compared to the responses from the 277 NCOA in Table 4.8. There was no statistically significant difference between the two groups.

Table 4.8 Number of units drunk per week in NCOA v.s COA

| Number of units of alcohol <br> per week | Non-children of alcoholics | Children of alcoholics |
| :--- | :---: | :---: |
| Mean | 11,58 | 12,52 |
| Median* | 9(IQR 5-16) | 12(IQR 4-17) |
| Mode | 10 | 4 |
| $($ Mann-Whitney U= 4048, p-value $=0.410)$ |  |  |

### 4.12 The CAGE questionnaire

The CAGE has a sensitivity of $43 \%-94 \%$ and specificity of $70 \%-97 \%$ in detecting alcohol abuse and dependence ${ }^{110}$. It consists of four questions. These are," Have you ever had an eye-opener drink to get going in the morning?"" Have you ever felt angry when people criticize you about your drinking?"" Have you ever felt guilty about your drinking?" and" Have you ever felt you should cut down on your drinking?" Answering "yes" to one of the questions is associated with a sensitivity of $42 \%$, a specificity of $87 \%$, a positive predictive value of $36 \%$ and a negative predictive value of $90 \%$ for detecting problem drinking. ${ }^{111}$ Sensitivity is the proportion of patients with alcoholism who have a positive test. ${ }^{112} 42 \%$ sensitivity means that there are a significant proportion of alcoholics who might still have the disease but test negative on the CAGE. In other words there are a significant number of false negatives. The $87 \%$ specificity of the CAGE is an indication of the proportion of patients without alcoholism who have a negative test result. In other words there are relatively few false positives. So if a patient tests negative wit the CAGE they are most likely not alcoholics. The positive predictive value is the proportion of positive tests results that are true positives. The negative predictive value is the proportion of negative tests results that are true negatives. Answering "yes" to the question about whether the respondent has an eye-opener drink to get doing in the morning indicates a dependence on alcohol. The students who drank were asked to answer "yes" or "no"
to the four CAGE questions. 317 of the 319 students who drank answered the CAGE questions, response rate of $99,37 \%$. Of the 317 respondents that answered the CAGE questions 112(35,6\%) felt they should cut down on their drinking. This was the most common question that was answered in the affirmative. 75 (23,7\%) felt guilty about their drinking, 49(15,5\%) felt angry when criticized about their drinking and $13(4,1 \%)$ had an eye-opener drink to get going in the morning. The respondents were asked an additional question about whether they had ever driven drunk.

Answering "yes" to the question about often driving under the influence increased the positive likelihood ratio of the CAGE to 8.7 and negative likelihood ratio to 0.04 . ${ }^{113}$ $315(84,21 \%)$ students answered that question. $7,6 \%(24)$ of them had driven while drunk. The answers to those questions are shown in Figure 4.4. A likelihood ratio is a way of expressing how good a test for increasing the probability of a diagnosis. ${ }^{114}$


Figure 4.4 Answers to the CAGE questions

## a). COA vs NCOA on the CAGE

The difference between the children of alcoholics and the children of non-alcoholics on the CAGE questionnaire is shown in Table 4.9. There was no statistical difference between the two groups. In total $7,6 \%(22)$ of the 315 respondents had driven while under the influence of alcohol.

Table 4.9 NCOA vs COA with respect to the CAGE questions and the questions on driving under the influence

| Yes answers | NCOA | N= 280 | COA | N=37 | Total |
| :--- | :---: | :--- | :--- | :--- | :---: |
|  | Frequency | $\%$ | Frequency | $\%$ |  |
| Have you ever <br> felt you should <br> Cut down on <br> your drinking? | 96 | 34,29 | 16 | 43,24 | 112 |
| Have you ever <br> felt Angry <br> when people <br> criticize you <br> about your <br> drinking? | 41 | 14,64 | 8 | 21,62 | 49 |
| Have you ever <br> felt Guilty <br> about your <br> drinking? | 65 | 23,21 | 10 | 27,03 | 72 |
| Have you ever <br> had an Eye- <br> opener drink <br> to get going in <br> the morning? | 12 | 4,29 | 1 | 2,70 | 13 |
| Have you ever <br> driven under <br> the influence <br> of alcohol? | 20 | 7,14 | 2 | 5,41 | 22 |
| Total yes <br> answers | 234 |  | 37 |  |  |

The total CAGE scores between COA and NCOA were compared in

Table 4.10

Table 4.10 CAGE scores in NCOA v.s. COA

| CAGE <br> score | NCOA $\mathbf{l}=\mathbf{2 5 7}$ |  | $\mathbf{C O A}=35$ |  |
| :---: | :---: | :--- | :--- | :--- |
|  | Frequency | $\%$ | Frequency | $\%$ |
| 0 | 141 | 54,86 | 13 | 37,14 |
| 1 | 62 | 24,12 | 9 | 25,71 |
| 2 | 38 | 14,79 | 11 | 31,43 |
| 3 | 15 | 5,84 | 2 | 5,71 |
| 4 | 1 | 0,39 | 0 | 0 |

(Mann-Whitney $U=3678.5, p$ value $=0.057$ )

## b). Gender differences on the CAGE

The differences between men and women with regards to the question about driving under the influence of alcohol are shown in Table 4.11. This difference is significant with men being more likely to drive while drunk than women ( $p$ value of 0.0038 ) are. .

Table 4.11 Influence of gender on the question of driving while under the influence

| Gender | Driving under influence <br> $\mathbf{N}=\mathbf{2 2}$ |  |
| :--- | :--- | :--- |
|  | Frequency | $\%$ |
| Females | 6 | 27,27 |
| Males | 16 | $72,72^{*}$ |
| Total | 22 | 100 |
| * (p value of 0.0038.$)$ |  |  |

c). CAGE scores overall

The majority of the 317 respondents $51,1 \%(164)$ answered "no" to all the CAGE questions and had a score of 0. 79. $(24,9 \%)$ students answered "yes" to one of the

CAGE questions and scored 1.54(17\%) students answered "yes" to two of the CAGE questions and scored 2. 18(5,7\%) students answered "yes" to three of the CAGE questions and scored 3. 2(0,6\%) students answered "yes" to all four of the CAGE questions and had a score of 4 .

Table 4.12 Break down of the characteristics of the students in the various
CAGE scores categories

|  | CAGE <br> score 0 <br> $\mathbf{N}=164$ | CAGE <br> score 1 <br> $\mathbf{N}=79$ | CAGE <br> score 2 <br> $\mathbf{N}=54$ | CAGE <br> score 3 <br> $\mathbf{N = 1 8}$ | CAGE <br> score 4 <br> $\mathbf{N}=2$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Most common <br> gender | Females <br> $62,8 \%$ <br> $(103)$ | Females <br> $55,5 \%$ <br> $(44)$ | Males <br> $\mathbf{5 9 , 6 \%}$ <br> $\mathbf{( 2 2 )}$ | Females <br> $55,6 \%$ <br> $(10)$ | Males <br> $\mathbf{1 0 0 \%}$ |
| Average units drunk | 8,8 | 13,45 | 16 | 15 | $20(2)$ |
| Though they were at <br> risk of developing a <br> drinking problem | $0,6 \%(1)$ | $5 \%(18)$ | $13,5 \%$ <br> $(7)$ | $22 \%(4)$ | $50 \%(1)$ |
| Driven under the <br> influence of alcohol | $5,5 \%(9)$ | $\mathbf{9 , 1 \% ( 7 )}$ | $9,6 \%(5)$ | $5,6 \%(1)$ | $50 \%(1)$ |
| Children of <br> alcoholics | $10 \%$ <br> $(13)$ | $13,43 \%$ <br> $(9)$ | $\mathbf{2 1 \%}$ <br> $\mathbf{( 1 0 )}$ | $11,76 \%$ <br> $(2)$ | $0 \%$ |

### 4.13 Reasons for abstaining from alcohol.

In an open-ended question the non-drinking respondents were asked to give their reasons for abstaining from alcohol. 24 of the 55 non-drinking students answered that question yielding 68 responses between the 24 students who responded. The response rate was $43,64 \%$. Their answers were coded into 11 categories. The most common reasons quoted for abstaining from alcohol were "I don't like alcohol". The next most common reasons were health, the cost of drinking, being involved on sport, being able to drive after a night out, being in control of myself and hangovers as demonstrated in Table 4.13. The students could give as many reasons as they wanted.

Table 4.13 Reasons given by respondents for abstaining from alcohol

| Reasons for <br> abstaining from <br> alcohol | Students who <br> answered the <br> question N=24 |  |
| :--- | :---: | :---: |
|  | Frequency | \% |
| Don't like alcohol | 16 | 66.66 |
| Health reasons | 15 | 62.50 |
| Cost of alcohol | 11 | 45,83 |
| Driving and being in <br> control | 8 | 33.33 |
| Sport | 6 | 25,00 |
| Hangovers | 4 | 16.66 |
| Culture and religious <br> reasons | 3 | 12,25 |
| Don't need it to enjoy <br> myself | 2 | 8,33 |
| Family support | 2 | 8,33 |
| Weight | 1 | 4,17 |
| Previous problem <br> with alcohol | 1 | 4,17 |
| Total answers | $\mathbf{6 8}$ |  |

### 4.14 Answers to CAST-6

The CAST-6 questions were included in the questionnaire. The CAST-6 is a reliable means of finding the children of alcoholics with low potential for error. ${ }^{115}$ The Children of Alcoholics Screening Test (CAST) has a high internal consistency (. 88 and .90 ) and test-retest reliabilities (.88) when administered to adolescents from intact alcoholic families. ${ }^{116}$ What this means that if the test was repeated it would yield the same results again and again. It consists of 6 questions and answering "yes" to 3 or more of the questions means that the child is more than likely to have an alcoholic parent. The questioned asked were "Have you ever encouraged one of your parents to stop drinking?", "Have you ever fought or argued with a parent when he or she was drinking?"" Have you ever felt like hiding or emptying a parent's bottle of liquor?" "Have you ever heard your parents fight when one of them was drunk?"
"Have you ever wished a parent would stop drinking?" and "Have you ever thought one of your parents had a drinking problem?" The students were asked to complete the questions only if their parents drank alcohol. There were 274 respondents. The most common CAST-6 question that was answered in the affirmative was that $67(24,45 \%)$ respondents had heard their parents fighting when drinking. The second most commonly answered question is that $54(19,71 \%)$ respondents had argued with a parent when the parent had been drinking. $26(9,49 \%)$ respondents had encouraged a parent to stop drinking 18 (6,57\%) respondents had felt like hiding a parent's bottle of liquor, $39(14,23 \%)$ respondents had wished a parent would stop drinking and $34(12,41 \%)$ thought that a parent had a drinking problem These results are shown in Figure 4.5.


Figure 4.5 Answers to the CAST-6 questions

The "yes" answers to the CAST questions were added up and the respondents scored as either CAST $0=$ no "yes" answers, to CAST 6 =all "yes" answers to the questions. The majority, $190(67,6 \%)$ respondents had a score of $0.34,12(1 \%)$ scored 1.18(6,5\%) scored 2.15(5,3\%) scored $3.12(4,3 \%)$ scored 4. 7(2,5\%) scored 5 and
$5(1,8 \%)$ scored 6 . Those with a CAST of 3 or more were classified as children of alcoholics.

### 4.15 Students' perceived risk of developing a drinking problem themselves

The respondents were asked, "Do you think you are at risk of developing a drinking problem?" They were given a choice of three options "yes", "no" or "don't know". 369 of the 374 students answered the question, response rate $98,66 \%$. These results are shown in Table 4.14. The difference between the COA and NCOA is statistically significant.

Table 4.14 Students' perceived risk of developing a drinking problem

| Answers to the question" do you think you are at risk of developing a drinking problem?" | NCOA N=332 |  | COA N=37 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Frequency | \% | Frequency | \% |
| Don't know | 46 | 13,86 | 7 | 18,9 |
| No | 274 | 82,53 | 24 | 64,9 |
| Yes | 12 | 3,61 | 6* | 16,2 |

Those respondents who thought they were at risk of developing a drinking problem were asked in an open-ended question to state their reasons for thinking they might be at risk of developing a drinking problem. 18 students felt they were at risk of developing a drinking problem and 18 answered the open-ended question, response rate $100 \%$. Those 18 students provided 25 reasons for thinking they were at risk of developing a drinking problem. The respondents' answers to the question are shown in Table 4.15. The most common reason stated by the students was having a family history of alcoholism 9,36\%.

Table 4.15 Students reasons for thinking they are at risk of developing a drinking problem

| Reasons | Numbers of answers <br> $\mathbf{N}=\mathbf{2 5}$ |  |
| :--- | :---: | :---: |
|  | Frequency | $\%$ of answers |
| Family history | 9 | 36,00 |
| Amount of alcohol drunk | 3 | 12,00 |
| Alcohol used as a crutch | 2 | 8,00 |
| Type of drinking, binge | 1 | 4,00 |
| No control over the drinking | 1 | 4,00 |
| Suffering from depression | 1 | 4,00 |
| Cheap vs. food | 1 | 4,00 |
| Culture at college | 1 | 4,00 |
| Addictive personality | 1 | 4,00 |
| Enjoy it too much | 1 | 4,00 |
| Rural area | 1 | 4,00 |
| Boredom | 1 | 4,00 |
| Recovering alcoholic | 1 | 4,00 |
| Frequency of drinking | 1 | 4,00 |
| Total | 25 | 100 |

Those students who felt they were not at risk of developing a drinking problem were asked in an open-ended question to explain why they felt they were safe. 281 students answered this question as shown in Table 4.16. Those 281 students provided 401 reasons why they felt they were not at risk of developing a drinking problem. These were broken down in to a number of categories. The most common reason stated by the 281 respondents was control over their drinking 143(25,19\%). This is included statements like, "I am in control of my drinking", "I can abstain for a period of time", I don't drink a lot" and "I don't drink often". Hazardous drinking avoided includes statements like "I do not use alcohol as a crutch", "I am a social drinker only, I never drink alone". Other reasons stated were and awareness of he risks. This included statements like "I know the effects of alcohol"," I don't drink because I am health conscious", and "my career is too important to me". Family history was quoted as a reason for feeling safe, both because the respondents had no family history of alcoholism and therefore felt that they were not at risk and also because of family history the COA could see the risks and were forewarned. Dislike of alcohol was another category and included statements like," I don't like alcohol", "I can enjoy myself without it" and "it is not important to me." Peer support and peer
pressure were both reasons given by the respondents for feeling they were not at risk of developing a problem. Other reasons given by students was "interference in sexual performance", "being a good boy" and "my girlfriend won't let me".

Table 4.16 Reasons given by the students to explain why they felt they were not at risk of developing a drinking problem

| Reasons given why students <br> felt they were not at risk of <br> developing a drinking <br> problem | Answers <br> $\mathbf{N}=\mathbf{4 0 1}$ | \% of <br> answers |
| :---: | :---: | :---: |
| Control | 230 | 57,36 |
| Avoidance of Hazardous | 66 | 16,46 |
| Drinking | 25 | 6,23 |
| Dislike of alcohol | 21 | 5,24 |
| Awareness of Risks | 15 | 3,74 |
| Non drinker | 7 | 1,75 |
| Religion | 8 | 2.00 |
| Peers | 6 | 1,50 |
| Sport | 6 | 1,50 |
| Family History | 2 | 1,25 |
| Cost | 10 | 2,50 |
| Family responsibility | $\mathbf{4 0 1}$ | $\mathbf{1 0 0}$ |
| Other |  |  |
| Total |  |  |

4.16 Students knowledge about the safe number of units of alcohol to drink per week.

The respondents were asked, "What do you consider to be a safe number of units to drink per week for a male and for a female?" Of the 374 respondents 308(82,35\%) students answered the question about safe number of units in a male and 315 (84,22\%) answered the question about the safe number of units in a female. The answers are shown in Table 4.17.

Table 4.17 Influence of gender on students' knowledge of the safe number of units to drink

| Gender of <br> students | Female Limit |  | Male limit |  |
| :--- | :--- | :--- | :--- | :--- |
|  | Frequency | $\%$ | Frequency | $\%$ |
| Females | 9 | 64,3 | 3 | 60,0 |
| Males | 5 | 35,7 | 2 | 49 |
| Total number <br> of correct <br> answers | 14 | 100 | 5 | 100 |

In total only 14 students (4,6\%) of the study population knew the exact safe number of units for a female to drink and only 5 students ( $1,7 \%$ ) of the study population knew exactly how many units it was safe for a male to drink. Only one of those students who knew the safe amounts was a child of an alcoholic. The difference between the genders was not statistically significant.

### 4.17 Membership with alcohol support groups.

The respondents were asked about membership in alcohol support groups. Only 6 respondents had parents who were members of the Alcoholics Anonymous (AA) and only 2 students were themselves members of the AA as seen in Table 4.18. The students could answer yes to more than one type of support group if they belonged to more than one.

Table 4.18 Membership in alcohol support groups

|  | $\begin{aligned} & \mathrm{AA} \\ & \mathrm{~N}=8 \end{aligned}$ | Al-Anon $\mathrm{N}=2$ | Other support group $\mathrm{N}=3$ | Percentage of responses $N=13$ |
| :---: | :---: | :---: | :---: | :---: |
| Student | 2 | 2 | 1 | 15,38 |
| Parent | 6 | 0 | 2 | 61,54 |
| Total | 8 | 2 | 3 | 100 |

### 4.18 Causes of alcoholism



Figure 6 Extent of agreement with the suggested causes of alcoholism

The respondents were asked to use a five-point scale to indicate their opinion about the causes of alcoholism. 374 students answered the questions, response rate $100 \%$. The respondents felt that regular heavy drinking was the most important cause for developing alcoholism. 209(58,4\%) respondents strongly agreed that regular heavy drinking cause alcoholism and $120(33,5 \%)$ agreed that regular heavy drinking caused alcoholism. 138(38,4\%) respondents agreed that having an alcoholic parent put one at risk of developing alcoholism and 87(24,2\%) strongly agreed with that statement. Their responses are shown in Figure 6 Extent of agreement with the suggested causes of alcoholism.

The students were asked in an open-ended question to state their opinion on the other causes for alcoholism. These answers are shown in Table 4.19.

Table 4.19 The students' additional suggestions for the causes of alcoholism

| NCOAS' suggestions on <br> what might cause <br> alcoholism | Number of <br> responses N= 70 |  |
| :--- | :--- | :--- |
|  | Frequency | $\%$ |
| Psychological reasons | 32 | 45,71 |
| College environment | 16 | 22,86 |
| Family issues | 8 | 14,29 |
| Boredom, no sport or <br> hobbies | 6 | 8,57 |
| Work issues | 3 | 4,29 |
| Cultural | 3 | 4,29 |
| Early drinking | 1 | 1,43 |
| When used as a crutch <br> socially | 1 | 1,43 |
| Total answers | 70 | 100 |

The 37 children of alcoholics' additional reasons for a person developing alcoholism were stress $3(37,5 \%)$, shyness $1(2,7 \%)$, bad parenting $1(2,7 \%)$, boredom $1(2,7 \%)$, using alcohol as a means of escape $1(2,7 \%)$ and loneliness $1(2,7 \%)$.

### 4.19 Sources of knowledge re alcohol.

The respondents were asked to indicate their sources of knowledge about alcohol. 373 students answered this question and gave a total of 1114 responses. The most common source of knowledge about alcohol was from their friends $27(24,24 \%)$. The second most common source of information was the family 249 (22,23\%). Their responses are shown in Table 4.20.

Table 4.20 Sources of knowledge re alcohol

| Sources of <br> knowledge re <br> alcohol | Numbers of responses <br> N=1114 |  |
| :--- | :---: | :---: |
|  | Frequency | \% of <br> responses |
| Friends | 270 | 24,24 |
| Television | 249 | 22,35 |
| Family | 176 | 15,80 |
| Education system | 134 | 12,03 |
| Radio | 104 | 9,34 |
| Magazines | 101 | 9,07 |
| Professionals | 49 | 4,40 |
| Experience | 8 | 0,72 |
| AA | 9 | 0,81 |
| Newspapers | 3 | 0,27 |
| Pubs | 2 | 0,18 |
| Islam | 2 | 0,18 |
| Books | 1 | 0,09 |
| Adverts | 1 | 0,09 |
| Internet | 1 | 0,09 |
| Trial and error | 1 | 0,09 |
| Seen effects | 1 | 0,09 |
| Drink industry | 1 | 0,09 |
| Bartender job | 1114 | 100 |
| Total responses |  |  |

## Chapter 5

## Discussion

### 5.1 Response Rate

There were 374 completed questionnaires out of the 431 handed out. This reflected an overall response rate of $86,78 \%$.

### 5.1.1 Distribution within the faculties

The majority of the faculties were adequately represented except for the arts and science faculties. In the planning of the study the number of students required from each faculty was calculated to represent the same proportion as in the whole students' population. So using a proportional stratified sample, the minimum numbers required from each faculty was arts 108, commerce 62, engineering 19, food science and technology 13, law 16, medicine 38 and science 59. The reason for using this method of sampling was to ensure a range of students with different abilities and potential. Unfortunately due to some practical problems with the data collection that was not achieved in two faculties.

The first problem is the way in which the questionnaires were administered. The plan was that the first year lecturers at the start of a class would hand out the questionnaire. Time was to be allocated for the questionnaires to be filled in and then all the questionnaires collected by the lecturer and returned to the researcher. This was explained verbally and a letter was attached to the questionnaires when they were sent to the lecturers explaining the desired method of data collection to be used. In the faculties where the instructions were followed the response rates were very good. As shown in Table 5.1.

Table 5.1 Response rates within the various faculties

| Faculty | Responses N = 288 |  |
| :--- | :--- | :--- |
|  | Frequency | Response <br> rate |
| Arts | 81 | 98,78 |
| Engineering | 46 | 93,88 |
| Food Science and Technology | 22 | 100 |
| Law | 17 | 100 |
| Medicine | 122 | 98,39 |
| Total | 288 | 98,39 |

In the faculties where the students were asked to return the questionnaires later either to the class representative or the department secretary the response rates were not as good, as is shown in Table 5.2.

Table 5.2 Response rates within the various faculties

| Faculty | Responses N=74 |  |
| :--- | :--- | :--- |
|  | Frequency | Response rate |
| Commerce | 64 | 61,54 |
| Science | 10 | 47,62 |
| Total | 74 | 100 |

The low response rate in the department of science was the reason insufficient numbers of students were sampled in that faculty. 59 students were required and only 10 responses were obtained.

In the faculty of arts the response rate was good. However, too few students were sampled again because the method of data collection was not adhered to. Instead of handing out the questionnaires at the start of a class the music students were asked to fill in a questionnaire when they were in the department office for whatever reason. During the time the study took place only two students had reason to go to the office so only two students filled in the questionnaire.

When the data was analyzed and the shortfall in students in the arts and science faculties realized, an attempt was made to sample more students. A number of practical difficulties were encountered. Firstly the science faculty was no longer
prepared to allow access to their students because of the closeness to the exams. They felt that it would no be fair to disrupt their classes at such a crucial time of year. Within the arts faculty the problem was not to sample the same students again as a lot of the students have a cross over of courses. The students in the department of German was selected for sampling but when one of the first year lecturers got sick, the remaining lecturers had too much on their hands with the approaching exams to hand out questionnaires. No German students were therefore sampled. So at that stage the decision was taken to stop further sampling of students. Further nonrandom sampling would have affected the validity and generalisability of the results.

The initial reason for the proportional stratified sample was to sample a range of students with varying abilities and potentials. To assess whether this was achieved the leaving certificate results were assessed. The average points achieved by the study population as a whole was 495 and that is in keeping with the average in the whole university. So although there were less students than originally planned in the arts and science faculties the students that were sampled were representative of the rest of the student population with respect to their ability as reflected by the leaving certificate points. Therefore the results can be seen to representative of the whole first year class.

The last limitation of the study is the use of the CAGE over the AUDIT. The literature shows that the Alcohol Use Disorders Identification Test (AUDIT) is most effective in identifying subjects with at-risk, hazardous, or harmful drinking (sensitivity, 51\%-97\%; specificity, $78 \%-96 \%)^{117}$. This is ideally the type of student that the study was trying to identify. The CAGE questions, which was the test used in the study for practical reasons, is superior for detecting alcohol abuse and dependence (sensitivity, 43\%$94 \%$; specificity, $70 \%-97$ ). The motivation for the study is to detect the problem drinking before it gets to the stage of alcohol abuse and dependency. This means
that the study could have missed out on identifying a number of problem students simply because of the choice of questionnaire.

### 5.2 Objectives

The results will now be discussed using the objectives as a framework for discussion. The aim of the study was achieved by means of a number of objectives.

### 5.2.1.Demographics

The first objective was to obtain demographic data on the students.

### 5.2.1.1 Year of study

The research was aimed at first year students only and this was achieved as $100 \%$ of the study population was in first year. The reason for choosing first year students in preference to those in the later years of study was the assumption that they were less likely to have an established drinking habit and that intervention at that stage could be brief and effective. However not all first year students are young students as our age analysis of the study population showed. The ages ranged from 17 to 63 in the initial sample, so a decision had to be made about what age to use as a cut off. As the justification for using first year students was the effectiveness of intervention the question arose about the influence of age on effectiveness of intervention. A study done comparing older vs. middle aged and young chemically dependant patients showed that the older adults reported greater abstinence than the younger adults did after treatment. ${ }^{118} 55 \%$ of the older adults were abstinent six months after treatment in comparison to $59 \%$ of the middle-aged adults and $50 \%$ of the younger adults. However this was formal treatment of established chemically dependent patients and the motivation for doing brief intervention in first year students is to prevent dependence from becoming established. It is for this reason that the students in the sample older than 35 were excluded from the study.

### 5.2.1.2 Gender

The majority of the study population was female 201(54,8\%) with males making up the remaining numbers $171(45,2 \%)$. This may have had some influence on the results, as $84 \%(175)$ of females drink within the average safe number of units per week as opposed to the males where only $80 \%, 106$ stay within the recommended safe limits. (See Figure 4.3) Females also have a better knowledge of the safe number of units to drink per week in comparison to the males. Males are more likely to engage in risk taking behaviors as shown in their answers to the question on driving while under the influence of alcohol, (p value of 0.0038.) (see Table 4.11)

### 5.2.1.3 Nationality

This study is very specific to UCC and cannot be generalized to any other first year students at any other university. The study population is predominantly Irish 85 (1\%) and of those Irish students 63(54\%), 190 are from county Cork.(see Table 4.4.) One would expect that universities in other counties would have a very different mix of students from different counties, e.g. University College Dublin would have the majority of its students from county Dublin. For this reason the results cannot be extrapolated to any other students from any other colleges. The majority of the nonIrish students were Malaysian 17 (32,07\%).( see Table 4.5). $100 \%$ of the Malaysian students were non-drinkers for religious regions. The next most common non-Irish nationality was Canadian at 18(86\%), 10 students, and only $40 \%$ of who classify themselves as regular drinkers. The third most common non-Irish nationality was the 4 Kuwaitis at 11,32 \%. 100\% of them were also non-drinkers. (SeeTable.4.7). Having a fairly large number of non-drinking students may have decreased the average number of units drunk in the study population.

### 5.2.2 Knowledge of alcohol

The next objective was to explore the students' knowledge of alcohol and alcoholism.
Various aspects of their knowledge were assessed. These were

- Their knowledge of the seriousness of the disease
- The risk factors for developing the disease
- Their sources of information about the disease
- The students' factual knowledge of the safe number of units to drink per week.


### 5.2.2.1 Seriousness of the disease

This was assessed indirectly by the students' responses to why they would abstain from drinking. The most common short-term reason for abstaining given by the 24 students who answered that question was a dislike of alcohol (16; 66,66\% of responses). The next most common reason quoted by $15(62,50 \%)$ of the 24 students was the negative impact of drinking on health, hangovers and weight gain, (see Table 4.13). This corresponds with the study done by Brown et al where one of the most common issues that prompted a reduction in drinking were health related issues ${ }^{119}$.

The cost of alcohol was a major deterrent for $11(45,83 \%)$ of the 24 respondents. The next most common reason $25 \%$ (6) for abstaining from alcohol was students' involvement in sport and the negative consequences drinking has on sporting performance. The inability to drive after drinking was acknowledge and quoted as a reason for abstinence $5(20,83 \%)$. The loss of control was also perceived as a negative consequence of drinking 4(12,5\%). (See Table 4.13).

An awareness of the seriousness of the long-term consequences was noted in the students' answers to why they felt they would not be at risk of developing a drinking problem. Reasons mentioned were knowledge of the effect $12 \%, 13$ of the 24
students who answered the question, career too important to allow drink to interfere with it 2 students (8,34\%) and family responsibility 2 (8,34\%). In the study by Brown et al the family featured more prominently in their study as a reason for abstinence ${ }^{120}$. The difference in results could be explained by the difference in study populations. Brown et al studied primary care patients aged 18-59. Whereas this study analyzed first year college students aged 17-35. The majority of who would have no family responsibilities as yet. Family history $9(37,53 \%)$ was also mentioned as a reason for abstinence as was fear of the consequences of getting drunk 1 student (4,17\%) of responses). The addictive nature of alcohol was acknowledge by one student $1(4,17 \%)$ with the following statement, "I am at risk because I have an addictive personality". Although this is only one student the statement was included for completeness.

On the whole, the short term negative effects of overindulgence served as more of a deterrent against drinking than the long-term consequences. The children of alcoholics were not statistically different from their peers in this respect.

### 5.2.2.2 Risk factors for developing the disease

The most commonly agreed on risk factor amongst the 322 students who answered the question was regular heavy drinking 297 (92,23\%). The students acknowledged the association with other mental illnesses. A significant number of students felt that depression was a risk factor for developing the disease 78(24,29\%). The influence of work was mentioned. Dissatisfaction with the job 1(1,43\%), work pressure 1(1,43\%) and unemployment $1(1,43 \%)$ were mentioned as risk factors for developing the disease. Other risk factors acknowledged were factors relating to the family. These were family history of alcoholism $11(15,71 \%)$, lack of parental control $1(1,43 \%)$, abuse in the family $1(1,43 \%)$, bad parenting $1(1,43 \%)$, and family problems 1(1,43\%). The influence on social factors was also acknowledged. Stress was a
commonly quoted as a cause for alcoholism 11(15,71\%). Also mentioned were low self-esteem 4(5,71\%), boredom 4 (5,71\%), loneliness 3(4,2\%), no support 1(1,43\%), shyness 1 ( $1,43 \%$ ) and problems 2 (2,86\%). Although these numbers are small they do give an indication of what the students are thinking.

### 5.2.2.3 Sources of information

The most common source of information on alcohol amongst the students was their friends' 270 (24,24\%). This supports Jacob and Leonard's findings that peer alcohol use is the strongest predictor of adolescent alcohol use. ${ }^{121}$ The next most common source of information was the television 249(22,35\%) and finally their family 176 (15,80\%). (See Table 4.20.)

### 5.2.2.4 Knowledge of safe number of units to drink per week

On the whole students' knowledge of the exact safe number of units to drink per week was not good. Only 4,6 \% knew that females could safely drink up to 14 units per week of alcohol and only $1,7 \%$ knew that males could drink up to 21 units safely per week. ${ }^{122}$ Although they were not sure of the exact amounts only $19,6 \%$ felt that females could safely drink more than 14 units of alcohol per week and only 14,4 \% felt that males could safely drink more than 21 units of alcohol per week.

Summary of the findings
In conclusion the students had a fairly good grasp on the seriousness of alcohol abuse both in the long and the short term. They were aware of the various risk factors and risky behaviors. Their factual knowledge of the actual numbers of units that were safe for each gender to drink was not great but the vast majority of them were within the safe limits with their guesses.

### 5.2.3 Attitude to alcohol

The third objective was to determine the students' attitudes to alcohol. Various aspects of their attitudes to alcohol were assessed. These were, perceived risk of developing the disease, when would they be concerned about their drinking and what would be their reasons for abstaining from alcohol.

### 5.2.3.1 Perceived risk

The students were asked if they felt at risk of developing the disease. 298 (80.3\%) of the 369 respondents felt they were not and the reasons they felt they were safe were because of the way they were drinking. 101(27,37\%) students felt that they were in control of their drinking and 54(14,63\%) felt that they were not drinking enough to put themselves at risk. Of those who felt safe from developing a drinking problem, 45(12,20\%) felt that they didn't use alcohol as a crutch while 10(30\%) felt that the fact that they could abstain from alcohol for a period of time was evidence that they were not dependent on it. Of those students who said they were safe from developing a drinking problem 31students ( $8,4 \%$ ) justified their answer buy saying that they didn't drink often enough. Drinking alone was a bad sign and those who drank socially felt they were not at risk of developing a drinking problem.

So control over their drinking, amount of alcohol drank, motivation for drinking, frequency and ability to abstain were perceived as the major protective factors against developing a drinking problem.

### 5.2.3.2 Cause for concern

Of the total study population $18(4,88 \%)$ respondents felt they were at risk of developing alcoholism. The most common reason for feeling this was family history $9(50 \%)$. The amount of alcohol drunk $3(16,67 \%)$ and the fact that it was used as a crutch 2(11,11\%) was cause for concern but less so. Only one person felt that binge drinking was a risk factor and only one student mentioned other factors like lack of control over drinking and depression as a reason for concern.

### 5.2.3.3 Reasons for abstinence

The majority of the 58 -non drinkers, $33 \%$ (14) students were not drinking because they didn't like alcohol. The next most common reason for abstaining was healthrelated issues $54(17 \%)$, hangover (12,5\%), effects on weight 1 student (2,4\%) and interaction with medication $1(2,4 \%)$. The cost of alcohol was a good deterrent 11(45,83\%) and being involved in sport was also a reason given by the students for abstaining $6(25 \%)$. Students would also abstain when they were driving 5 (20,83\%) and because they liked to be in control 3(12,5\%).

Summary of findings of students attitudes to alcohol The lack of control over drinking, amount of alcohol drank, motivation for drinking, frequency and inability to abstain were perceived as the major determinants for developing a drinking problem by the students who felt they were not at risk. The students who had a family history of alcoholism were concerned about themselves and the most common reasons for abstaining from alcohol were, not liking alcohol and health reasons. Interestingly compared to their American peers for whom being a sporting jock was a risk factor for alcohol abuse, in Ireland partaking in a sport protected the students. ${ }^{123}$ (See Table 4.13.)

There is a difference between the reasons reported by those students who felt that they were not at risk of developing a drinking problem and those who felt they were. For those students who did not feel at risk the type of drinking, frequency and amount of alcohol drunk was the major issue. Whereas of those students who felt that they were at risk of developing a drinking problem only three mentioned the amount of alcohol drunk. The vast majority blamed other factors, family history 9(50\%), depression $1(5,55 \%)$, and culture at college $1(5,55 \%)$, addictive personality 1(5,55\%), being in a rural area 1(5,55\%), and boredom 1(5,55\%). Was there an element of denial in this group?

61,1\% (22) of the 36 students who were drinking more than 21 units of alcohol per week said that they were not at risk of developing a drinking problem. Of the 36 students $6(16,7 \%)$ were not sure and $8(22,9 \%)$ felt that they were at risk. Which is interesting because the same students said they were not at risk of developing a drinking problem because their type, frequency and amount of alcohol drank did not put them at risk and yet they were drinking above the recommended safe limits. In fact 2 students, $(66,7 \%)$ who said they were not at risk of developing a drinking problem were drinking an average of 40 units or more per week. The other student who was drinking more than 40 units of alcohol per week did not know if he was at risk of developing a drinking problem. It is also interesting to note that those students who said they were not at risk of developing a drinking problem but were drinking on average 33,29 units of alcohol per week said that they though the safe number of units of alcohol per week was 30,47 . So it seems the perception of how many of units of alcohol were safe to drink per week was directly dependent on how much the students themselves were drinking.

### 5.2.4 Practices

The fourth objective was to determine the students' current drinking practices.

This was assessed on three levels. The students were asked how many units they were drinking on average per week. They were asked the four CAGE questions and given a score out of four and they were asked about membership at alcohol support groups.

### 5.2.4.1 Average number of units drunk per week

The study done in the USA showed that the average number of units of alcohol drunk per week by college students was five units. ${ }^{124}$ Here the average for the study was 9,90 . That is despite the fact that the majority of non-Irish students were nondrinkers. After excluding the non-drinkers from the equation the mean number of units of alcohol drunk per week was 11,86 . This is significantly more than what their peers in the United States are drinking.

### 5.2.4.2 CAGE

The four CAGE questions were included in the questionnaire. The CAGE is designed to detect alcohol abuse and dependence ${ }^{125}$. It consists of four questions. These are," Have you ever had an eye-opener drink to get going in the morning?"" Have you ever felt angry when people criticize you about your drinking?"" Have you ever felt guilty about your drinking?" and " Have you ever felt you should cut down on your drinking?" Answering "yes" to one of the questions is associated with a sensitivity of $42 \%$, a specificity of $87 \%$, a positive predictive value of $36 \%$ and a negative predictive value of $90 \%$ for detecting problem drinking. ${ }^{126}$ As expected the majority of the students $51 \%$ scored zero. $25 \%$ of the study population scored one, $17 \%$ scored two, 6\% scored three and 1\% scored four.

- Amongst those students who had scored one, 195,( 54,2\%) had answered "yes" to the question whether they felt that they should cut down on their drinking. 18,5\% of students felt that they were at risk of developing a drinking problem This was despite the fact that on average they were only drinking 13,5 units of alcohol per week, which is not over the recommended safe limit. They also underestimated the safe number of units for both sexes. On average this group thought that men could drink up to 16 units of alcohol per week safely and that women could drink only 11. 54(55,1 \%) of this group was women, which was not significantly different from the rest of the study population. 13,43\% (nine students) of this group are children of alcoholics. Interestingly enough 9,1\% of this group (seven students) had driven under the influence of alcohol compared to the study population average, which was $7,2 \%(22)$ of the students. This might in part explain why they felt they should cut down on their drinking despite the fact that on average they were not drinking to excess.
- The majority of the 62 students who scored two on the CAGE questions felt that they should cut down on their drinking. 13,5 \% (7) felt that they were at risk of developing a drinking problem. Compared to the $54.2 \%$ in the previous group, 84,6\%(52) students in this group though they should cut down. In addition 50 students, $(80,8 \%)$ of this group felt guilty about their drinking. They were drinking on average 16 units of alcohol per week. This group differs from the ones who scored 1 on the CAGE questions in two ways. First the gender distribution is predominantly male 59,6\% (37), hence the higher number of units drunk per week may have been appropriate. Their incidence of driving under the influence of alcohol is also above the study population average at $9,6 \%$ but what is distinctive about this group of students is that 10 students, $21 \%$ of them are children of alcoholics. The percentage of children of alcoholics in the whole study population is only $10,22 \%$. This may in part explain the relatively high number of
them who feel they should cut down on their drinking and who feel guilty about their drinking despite the fact that they were drinking within the recommended safe limits.
- The 15 students who scored 3 on the CAGE questions seemed to be those with drinking problems. Although only 4 of them, $(22,2 \%)$ felt they were at risk of developing a problem. $94,4 \%$ (17) of them felt they should cut down on their drinking, $94,4 \%$ (17) of them were angry when criticized about their drinking and $100 \%$ (18) of them felt guilty about their drinking. Only 11,1\% (2) of them admitted to having had an eye-opener drink to get going in the morning. This group was predominantly female 8 (55,8\%). They drank on average 15 units of alcohol per week yet thought that the safe number of units for females to drink was 12 and males 16 . Compared to the other groups $5(6 \%)$ of them had driven drunk and 11(76\%) of them were children of alcoholics, one of who was a member of Al-anon.
- Only two students scored 4 on the CAGE questionnaire. Both were male. One was drinking 10 units per week, the other 30 . The student drinking 10 units knew that the safe number of units of alcohol for a male to drink was 21 . The other student thought that the safe number of units for a male to drink was 40 . The one who was drinking 40 units per week had also driven under the influence of alcohol. Neither were children of alcoholics. The student drinking 40 units per week felt he was at risk of developing a drinking problem, the other did not.


### 5.2.4.3 Membership in alcohol support groups

Only 3 students admitted to being members of alcohol support groups.

## Children of alcoholics

The children of alcoholics were studied as a separate subgroup as they are a highrisk group with unique problems. These students were identified by means of the CAST-6 questionnaire. Those students who answered yes to three or more of the questions were classified as children of alcoholics. Unfortunately the numbers of students who were identified as children of alcoholics was only $10.22 \%$ (37) of the study population. In the initial planning of the study the actual numbers of children of alcoholics at UCC was unknown so the sample size was calculated using the true alcoholism rate in the general population of $20 \%$ and the incidence of children of alcoholics at school which was $25 \%{ }^{127}$ In retrospect it is obvious that the percentage of children of alcoholics who went to college would be less than in the general population. The figure of $10,22 \%$ was on a par with a study done in the United States. ${ }^{128}$ The figure they came up with for children of alcoholics at college was $10 \%$. So in hindsight a larger number of students should have been sampled in order to get a bigger number of children of alcoholics for comparative purposes. Because of the fact that these are first year college students, the findings cannot be generalized to all children of alcoholics. We know that children of alcoholics perform less well academically on average than their peers so those who do go to college are possibly the exception to the rule rather than the norm. ${ }^{129}$

However despite the small number of children of alcoholics some interesting differences between them and the non-children of alcoholics has been noted.

Demographics of children of alcoholics at college
$56,8 \%$ (21) of the children of alcoholics were female compared to the $54,6 \%(177)$ in the non-children of alcoholics' population. This difference did not reach statistical significance. $\left(\chi^{2}=0.008, d f=1, p\right.$ value $\left.=0.93.\right)$

On average the points they achieved were lower than the non-children of alcoholics were. The mean for children of alcoholics was 483 vs. 496 for the rest of the population. There were those who performed well and achieved 600 points but they were the exception. This difference is was not statistically significant and unexpected. (Mann-Whiney $\mathrm{U}=3770, \mathrm{p}$ value $=0.21$ ). Previous studies have shown that the children of alcoholics perform less well in the pre-college years than the children of non-alcoholics. ${ }^{130}$

The majority of the children of alcoholics were in the arts ( $p$ value=0.022) and food science faculties ( $p$ value $=0.035$ ). The points required for these courses are lower on average than required for the courses where the children of alcoholics were not found. So it would seem that, being a child of an alcoholic limits the choices of course to study at college and hence the chance of improving oneself despite there being no significant difference in the points achieved in the leaving certificate between the two groups.

There was no difference between the children of alcoholics and the rest of the study population with respect to the age they were in first year.

## Knowledge of alcohol

The children of alcoholics were not significantly different from the non-children of alcoholics with respect to their understanding of the seriousness and risk factors for
developing the disease. They were more likely to mention stress as an important factor for precipitating alcohol abuse.

Attitudes to alcohol

As a group the trend was that they were more wary of alcohol and felt more guilt associated with their drinking than the children of non-alcoholics did. This was obvious in the CAGE scores. There were a significant number of children of alcoholics who scored 2 on the CAGE questions despite drinking within the safe limits. The questions they answered yes to were those on feeling guilty about their drinking and thinking they should cut down. However the difference in total CAGE scores between the children of alcoholics and children of non-alcoholics was not statistically significant ( $p$ value $=0.474$ ).

The children of alcoholics were no different to the children of non-alcoholics when it came to engaging in risk taking behavior. They were as likely to have driven under the influence of alcohol as their peers were.

Compared to children of non-alcoholics the majority of children of alcoholics considered themselves regular drinkers, however the difference not statistically significant ( $p$ value $=0.429$ ).

## Practices

Questions have been asked about the age at which children of alcoholics start drinking. ${ }^{131}$ There is an association between family history of alcoholism and early initiation of drinking. In this study there was no statistically significant difference
between the children of alcoholics and the children of non-alcoholics with respect to the age at which they started drinking.

The children of alcoholics were drinking more units on average per week than the children of non-alcoholics but the difference was not statistically significant. (p value= 0.410 ).

They perceived themselves to be more at risk of developing a drinking problem than their peers would be. 16,2\%(6) of the children of alcoholics felt they were at risk of developing a drinking problem vs. only $3,8 \%$ (12) in the rest of the study population. This difference was statistically significant. (p value= 0.003 ). (See Table 4.14). Of those children who felt at risk of developing a drinking problem only $3,8 \%$ of the 37 thought that having a parent who was an alcoholic put them at risk of developing the disease. Of the total population of children of alcoholics $19(51,35 \%)$ of the 37 felt that having an alcoholic parent was a cause for developing the disease compared to the rest of the study population 197(63,34\%) of the 311 felt the same way

Summary of the differences between the children of alcoholics and non-children of alcoholics in their first year of college at UCC.

There are a higher number of females than males, which is in keeping with the rest of the study population. They seem to achieve as well as their peers with regards to their leaving certificate results. The children of alcoholics seem to be over represented in the arts and food science faculties, so being a child of an alcoholic seems to influence the choice of career and future prospects. They are more wary of alcohol but are no less likely to drive under the influence. Their average alcohol intake is no different from their peers and they do not score differently on the CAGE
questions. They feel more at risk of developing an alcohol problem than their peers do but only $51,35 \%$ (19) admit this is because they have an alcoholic parent.

No cross tabulations have been done across the faculties. This was deliberate and was one of the conditions that the researcher agreed to prior to starting the study. This was to avoid comparing alcohol use etc between faculties.

## Chapter 6

## Recommendations

Should interventions be planned, they should take place during the school years. This study showed us that the mean age at which the students started drinking alcohol was 15 . The mode was 16 . Waiting until the children reached college could be too late. The added advantage of doing the intervention at school is that those high-risk children of alcoholics the majority of whom never make it to college would benefit from the intervention. In Ireland the tradition was to rely on the church to influence the children's drinking habits. At the age of 13, a communion a pledge is taken where the children have to swear to stay away from alcohol. However in this study only one student said that the reason they abstained from alcohol was the communion pledge. The only time religion worked as a deterrent to prevent drinking was when the students were Muslim.

From this study it would seem that the family and peers, not the church were the more likely sources of information about alcohol and therefore the more appropriate people to be doing the intervention. This was investigated in 2001 when a study was done on the efficiency of intervention on students before they start college through their parents. ${ }^{132}$ The group whose parents had been educated on how to convey information about drinking to them where significantly different from the non intervention groups with regards to drinking activities and drinking related consequences in their first semester.

So the intervention should be done in the school years by the parents. The children should be encouraged to participate in sport and to look after their health. Being health conscious and taking part in sport was both were found to be good deterrents against drinking. Having a car and driving acted as a deterrent as did not having enough money for alcohol. Parents have a role to place in all of these areas.

Unfortunately those parents who are alcoholics are less likely to do the appropriate intervention in their children putting them once again at a disadvantage.

As far as the family physician is concerned in this study, only $4.4 \%(49)$ of the 1114 responses got their knowledge of alcohol from professionals e.g. Teachers, doctors. This could surely be improved. Health professionals could educate the parents of adolescents and let them know how important they are as a source of information about alcohol for their children. Family physicians could teach parents how to implement alcohol education measures and what is the safe number of units to drink per week. Health professions could also make a point of educating their patients about alcohol when they see them for other routine complaints.

## Chapter 7

## Conclusions

Despite the fairly small sample a number of conclusions can be drawn from this study.

The aim of the study was to investigate the knowledge attitudes and practices of first year students at UCC regarding parental and personal alcohol use.

Firstly with respect to the practices of the students regards to alcohol. The students at UCC in Ireland drink on average more than their peers at Universities in the United States. The majority of them are drinking within safe limits, ( $83,3 \%$ of females and $80,6 \%$ of males).

Their knowledge of the negative effects of alcohol is quite good. Their main sources of knowledge re alcohol are their friends and family. The implications for the family physician is that only $4.4 \%$ (49) of the 1114 responses got their knowledge of alcohol from professionals e.g. Teachers, doctors.

Children of alcoholics are different from their peers at college in that they feel more at risk of developing a drinking problem, and chose career paths that require less time and study commitments than their peers.

The limitations of this study are the small numbers of students sampled, the possible bias introduced by trying to re-sample the science and German students and finally the choice of measuring tool used. However some interesting trends were noted in the children of alcoholics with respect to the way they answered the CAGE questions and their attitudes to alcohol. Unfortunately because of the relatively small sample these trends were not statistically significant. A larger study sampling 2000 or more students would show these differences more clearly.

## APPENDIX 1

## Questionnaire

(g)

1). Age in years

2). Gender (tick one)
3). Year of course

4). Degree for which you are studying?
(d)

5). Points achieved in leaving certificate $+/-$ ?

6). If you are Irish, which county are you originally from?

Name one only
(hc)
7). If you are not Irish what is your nationality?

8). With regard to alcohol consumption which phrase best describes you? Tick one

| Regular drinker <br> $(\mathrm{rd})$ | Occasional drinker <br> $(\mathrm{od})$ | Non drinker <br> $(\mathrm{nd})$ |
| :--- | :--- | :--- |

9). At what age did you start drinking alcohol?


## If you are now a non-drinker go to question

16. 

Otherwise continue with question
10
10). If you drink alcohol, how many units on average do you drink per week. One unit=
$1 / 2$ pint beer lager or cider/1 small glass wine, 1 single measure spirits,
1 small glass sherry/1 single measure aperitifs

11). Have you ever had an eye-opener drink to get going in the morning?

Tick one

12). Have you ever felt angry when people criticise you about your drinking?

Tick one

13) Have you ever felt guilty about your drinking?

Tick one

14). Have you ever felt you should cut down on your drinking?

Tick one

15). Have you ever driven while under the influence of alcohol?

Tick one

16. If you don't drink alcohol what are your reasons for abstaining?


## If your parents don't drink go straight to question 23.

Otherwise continue with question
17
17). Have you ever encouraged one of your parents to stop drinking?
(tick)

18). Have you ever fought or argued with a parent when he or she was drinking? (tick one)
 (ct)
19). Have you ever felt like hiding or emptying a parent's bottle of liquor?

20). Have you ever heard your parents fight when one of them was drunk?

21). Have you ever wished a parent would stop drinking?

22). Have you ever thought one of your parents had a drinking problem?

23). Do you think you are at risk of developing a drinking problem?
(tick one)

24). If yes, why do you think you are at risk of developing a drinking problem?

25). If no, why do you think you are not at risk of developing a drinking problem?

26). What do you consider to be a safe number of units to drink per week?

1 unit=1/2 pint beer lager or cider/1 small glass wine, 1 single measure spirits,
1 small glass sherry/1 single measure aperitifs

| In Males |  | In Females |  |
| :--- | :--- | :--- | :--- |

27). Do you or any other member of your family belong to an alcohol support group?

28). If yes, what do you or they attend? Tick each as appropriate

|  | AA | Al-Anon | Al-Teen | Other alcohol support groups |
| :--- | :--- | :--- | :--- | :--- |
| Yourself |  |  |  |  |
| Parent |  |  |  |  |
| Other relative |  |  |  |  |

29). State the extent with which you agree with these statements?
29). One's chances of becoming an alcoholic are increased by Tick

|  | Strongly <br> agree | agree | don't <br> know | disagree | strongly <br> disagree |
| :--- | :--- | :--- | :--- | :--- | :--- |
| a). Having an alcoholic parent. <br> (ap) |  |  |  |  |  |
| b). Having a relative other than <br> a parent who is an alcoholic. <br> (ora) |  |  |  |  |  |
| c). Regular heavy drinking. <br> (hd) |  |  |  |  |  |
| d).Use of other drugs (d) |  |  |  |  |  |
| e). Weak personality (d) |  |  |  |  |  |

f). Others, please explain
$\square$
30). From where do you get your knowledge on alcohol?
(tick more than one if necessary)


Others, please explain

Thank you for taking the time to fill in this questionnaire for me.
services
They can be contacted on 0214902311.

Once again, thank you for your co-operation.

Dr Jacqueline Glisson

## Appendix 2

## Alcohol Study

Dear student,
I am a post graduate student at the University of the Witwatersrand in Johannesburg. I am doing a degree in Family medicine for which I am required to do a research project. I am being assisted in my research by Professor Bradley of the Family medicine department at this university. I am doing research on alcohol use amongst first year students and their families. I would be very grateful if you would fill in the questionnaire below. Your name was randomly selected from all first year students at Cork. The questionnaire is anonymous and your identity can not be known in any way. The information is confidential and will only be made available to myself and my supervisor. The results of the research will be published so that other doctors can benefit from this study.

While I hope that you will be prepared to help me, you are under no obligation to complete this questionnaire and you will experience no negative consequences if you refuse to do so. Similarly you are free to omit any question or part of a question with which you aren't comfortable.

If you are willing to fill in the questionnaire please do so now. Unfortunately the form cannot be taken home and returned later. We would like you to fill in the questionnaire as carefully and completely as possible. If you don't wish to answer any question for whatever reason, please feel free to do so. When you have finished please check to see that you have answered all the questions and then place the form in the box in the front.

If you decide not to fill in the questionnaire, I still request that you place your form in the box provided.

If you would like more information about alcohol please feel free to contact the student counselling service on:- 021490 2311. Alternatively you can contact the AA on - 016795967.

Thank you for your time and assistance,
Dr. Jacqueline Glisson. MBBcH, MCGP, University of Witwatersrand South Africa
Mary Street Medical Centre, 12 Mary Street, Clonmel, County Tipperary

## Appendix 3

T0.d 7 7101


UNIVERSITY OF THE WITWATERSRAND. JOHANNESBURG
Division of the Deputy Registrar (Research)
From
Aral Wright
COMMITTEE FOR RESEARCH ON HUMAN SUBJECTS (MEDICAL) Ref: R14/49 Glisson

CLEARANCE CERTIFICATE
PROTOCOL NUMBER M03-06-11
PROJECT
A Study of the Knowledge, Attitudes and Practices of 1st Year Students at Cork University Regarding Parental and Personal Alcohol Use

| InVESTIGATORS | Dr J Glisson |
| :--- | :--- |
| DEPARTMENT | School of Clincial Medicine, Tipperary Town, Ireland |

## DATE CONSIDERED

## DECISION OF THE COMMITTEE

Approved unconditionally
Unless otherwise specified the ethical clearance is valid for 5 years but may be renewed upon application
This ethical clearance will expire on 1 January 2008.

DATE 03-06-30
CHAIRMAN

"Guidelines for written "informed consent" attached where applicable.
cc Supervisor: Dr A Wright
Dept of School of Clinical Medicine, Wits Medical School
Works2llain00151HumEth97.wdblM $03-08-11$
OF (NVITMTOR
DECLARATION OF INVESTIGATORS)
To be completed in duplicate and ONE COPY returned to the Secretary at Room 10001, 10th Floor
Senate House, University
We fully understand the conditions under which I am/we are authorized to carry out the abovernentioned research and lowe guarantee to ensure compliance with these conditions. Should the abovernentioned contemplated from the research procedure as approved t/we conditions. Should any departure to be Committee. I agree to a completion of a yearly progress form undertake to resubmit the protocol to the the study is completed.

DATE $\qquad$ SIGNATURE $\qquad$

## Chapter 8

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