Hamburg University of Applied Sciences

Faculty Life Sciences

<u>Substance Abuse in Germany & Social Norms Approach</u>

Master Thesis

Master of Public Health

by

Kiran Mayekar

Matriculation Number – 2088385

Hamburg, 2nd January 2014

First Supervisor: Prof. Dr. med. Ralf Reintjes (HAW Hamburg)

Second Supervisor: Dipl Gesundheitswirtin. Annika von Borczyskowski (HAW Hamburg)

Our brain reacts to many substances, including alcohol, by fooling us to think that the rewards we get from using them far outweigh the harm that they cause, and many companies make a great living out of this…

…besides substance abuse is primary disease which cannot be cured, it's a progressive, chronic relapsing disorder which in long term affects certain body systems and organs, and can be also eventually directly or indirectly fatal.

TABLE OF CONTENTS

Abstract

Background: Substance use particularly among young adults is an increasing concern in Europe. New reports show that smoking, heavy drinking and consumption of illegal drugs have contributed significantly to morbidity among young adults in Germany over the past ten years. While several studies exist that monitor alcohol and substance use from a European and German perspective the pathways that lead to problematic consumption are not always well understood. Besides campaigns for reduction of substance abuse among students were till date predominantly based on traditional prevention strategies in Germany.

Methods: Comprehensive literature ranging from research articles published in national and international journals, presentation texts of various conferences, and official reports of national and international health organisations as well as much of other grey literature was reviewed to critically unfold how we can build up better resilience amongst young generation from becoming target customers of this addictive business. Furthermore, Social Norms Approach as an intervention strategy to control substance abuse was extensively researched for its implications.

Findings: The figures of substance abusing young people (especially smoking and heavy drinking) in the age group of 18 to 25 years are still significantly high. In addition, they are ill prepared to negotiate the balance between emotion and cognition when it comes to consumption of addictive substances. The 'Social Norms' approach to prevent school and college age substance abuse is a new and highly successful alternative to traditional methods for preventing substance abuse among young people.

Interpretation: The cognitive and socio-structural factors that potentially promote, and excuse substance abuse among young adults are not favorably balanced. The prevalence of substance abuse could be further decreased by focusing on intensified bahaviour prevention activities coupled with some modifications in structural measures. The success of 'Social Norms' approach should be confirmed for a big sample exclusively in Germany, and if positive results are obtained it should be increasingly applied in secondary and higher education settings in Germany to promote healthier lifestyles among young adults.

1. Introduction

One in three adults in Germany smokes and almost one in ten adults is a heavy smoker; between 110,000 and 140,000 deaths a year are linked to the consequences of tobacco consumption (Deutsches Krebsforschungszentrum 2002; John U & Hanke M 2001). New surveys show that almost every second child in Germany is exposed to secondhand smoke at home and Passive Smoking is as prevalent as ever. In Germany one woman in six and one man in three consumes alcohol in quantities that are over the risk threshold for their health. Alcohol consumption is at least a partial cause of about 40,000 mortalities every year (Robert Koch Institute 2008).

Figure 1: Mortality in Germany due to tobacco smoking in year 2010

Source: Institute for Health Metrics and Evaluation (GBD 2010 Data Visualisations)
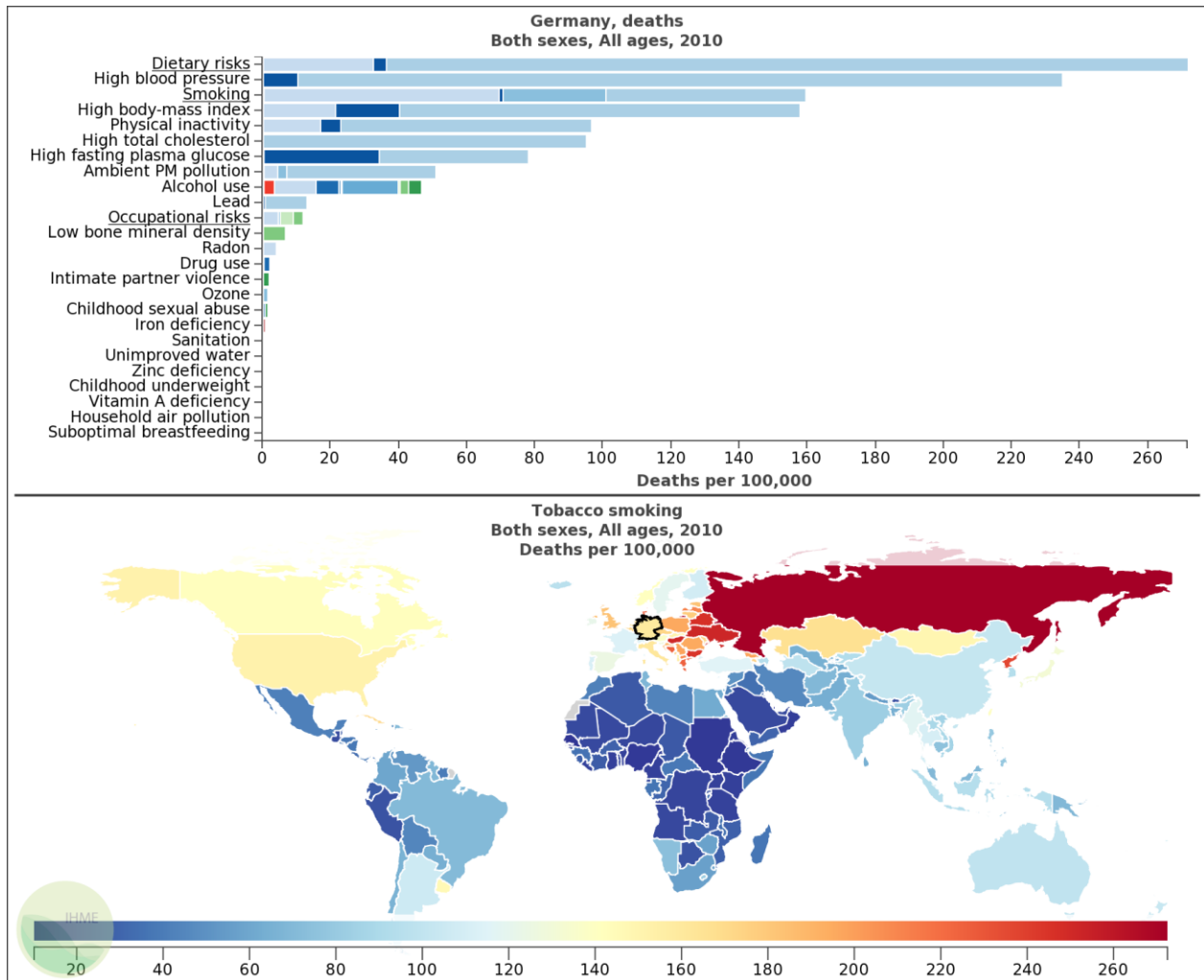
Children and adolescents have greater vulnerability to addictive substances than adults, and there is increasing evidence of the impact of substances on young people's health in long term which includes above all use related illnesses like heart diseases, cerebrovascular diseases, high blood pressure, arteriosclerosis, pneumonia, chronic bronchitis as well as malignant tumours of the lung, bronchia, oral cavity, oesophagus, kidney and pancreas (International Agency for Research on Cancer 2004, *U.S. Department of Health and Human Services 2004*). According to national (Helmer et al. 2010; Akmatov et al. 2011) and international evidence (Stock et al. 2009) for Germany substance abuse represents a quite relevant risky behavior for student population. Besides increased risks of psychological disturbances, indirect consequences for health such as Sexually Transmitted Infections resulting from unprotected sexual relations/injuries are also to be accounted. Above all substance abuse is connected eventually with social, legal and financial consequences like rash driving, increased aggressiveness, absenteeism for lectures, and poor academic performance (Perkins 2002). Just recently it was demonstrated that regular consumption of Cannabis in the long run can lead to reduction of Intelligence Quotient (Meier et al. 2012). Since 2001 also the European Union (EU) has engaged itself in this sphere of public health and since 2006 the European Commission has distributed a communication that sets out an alcohol strategy to support member states in reducing alcohol related harm (Commission of the European Communities 2006).

Substance use policy is a challenging topic for Germany, and the health message on substances has never been greater than today. This health voice is of particular importance given the facts that young Germans are the heaviest consumers of tobacco in Europe, and that alcoholic mixed drinks (alcopops) and so-called "binge drinking" – deliberate drinking to intoxication on special drink-centred occasions have contributed considerably to alcohol consumption among young people over the last ten years (Robert Koch Institute 2008). While several studies exist that monitor alcohol and substance abuse from European and German perspectives, the pathways that lead to problematic consumption are not always well understood. This research complements these studies by focusing on the risk and protective factors of substance use in Europe. Through objective analysis it tries to provide a comprehensive overview of risk factors in different domains and on different levels, while at the same time investigating the variation in these relationships for young adult generation.

Figure 2: Disease Adjusted Life Years (DALYs) for Alcohol & Drug use in Germany
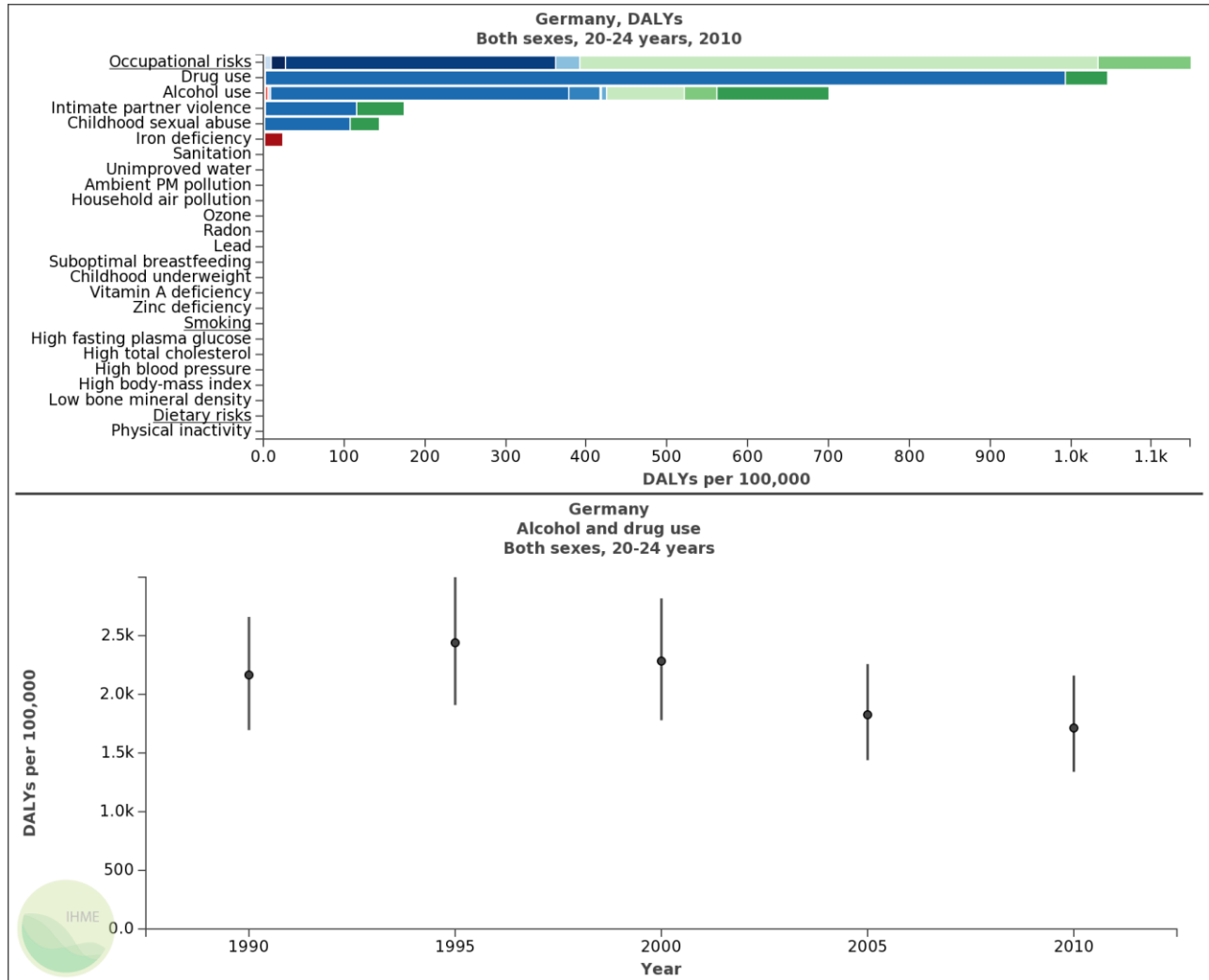
Source: Institute for Health Metrics and Evaluation (GBD 2010 Data Visualisations)

The Global Burden of Disease 2010 study results for Germany show that Drug use and Alcohol use rank second and third respectively (next only to Occupational Risks) in increasing risks for Disabilities Adjusted Life Years (DALYs) among young adults (refer Figure 2), while Smoking ranks third (next to Dietary Risks and High Blood Pressure) as risk for dealth in German people considering all ages (refer Figure 1). These findings mean that the young adults of today's generation are taking increasing risks to intoxicate themselves with alcohol and drugs so as to effect short term disabilities in their lives while the effects of smoking are somewhat getting spilled over the late ages but not without the risk of causing death.

To create a better understanding of the interrelationships between the influence of individual developmental characteristics on the one hand and family, school, peers, neighbourhood, and societal contexts on the other there is a need to handle this issue from a sociological perspective looking at the influence of the environment of juveniles on their substance use behaviour rather than focusing on it from a purely psychological framework of individuals. Many substance use-related studies stipulate that substance consumption merely manifests as the result of individual choice. This report however recognizes the complexity of the issue at hand and takes a closer look at the push and pull effect of a variety of risk, and protective factors in different social domains as well as at the structural level which may be contributory to substance use among young adults. The scope of this report also allows for an extensive comparison of the influence of the various domains and risk factors on youth substance use.

2. Methods

Substance Abuse as a youth issue was thoroughly researched right from its basic definitions over it's risk and protective factors to as far as the ramifications for its control in near future. Attempt has been made to make reader understand it as a disorder with corresponding etiologies, latest epidemiology for young adults, and interventions for its prevention / reduction in Germany. Though at times general reference has been made main focus of the analysis largely remains on the European region and Germany in particular.

Target group of this review was young adults (18 to 25 years age group), majority of whom also fall within the category of college-going university students, hence the significance of studying the right sample group at appropriate time phase in their lives so as to improve our understandings about the issue and further to reduce possible morbidity and mortality among young generation due to substance abuse by implementing / modifying corresponding policy measures. Attempt was made to study this sample (college-going young population) first from global point of view and then trying to limit it to European region and finally to Germany. But when not enough local data for Germany was available focus was shifted preferentially to European region and then to global context. This hold quite true for the review on Social Norms

Approach in which much of the research till now is concentrated in American and Australian region, with only last year the approach being introduced in the European region to evaluate its feasibility. A short review of work done till now on the implementation of Social Norms Approach in Europe is also added further for the information of readers.

Internet search engines used for the research was mainly 'Google Scholar' with key words as 'substance abuse'; 'adolescents and young adults'; 'European region and Germany'; 'latest prevalences'; 'risk and protective factors'; 'policy interventions' to have a firsthand idea.

For a major part of thesis 'Pubmed' was used to search 'Medline' for research articles on substance abuse, but 'Science Direct' was also searched in part for relevant articles. The hits showed up numerous publications from public health scientific journals (e.g. Preventive Science), journals for substance abuse (e.g. Journal of Studies on Alcohol and Drugs), medical journals (e.g. British Medical Journal), journals for adolescents (e.g. Journal of Adolescent Health), journals for college students (e.g. Journal of American College Health), journals of social sciences (e.g. Social Science & Medicine), journals of psychiatry (e.g. Addictive Behaviors), journals of psychology (e.g. Personality and Social Psychology Bulletin), policy journals (e.g. Drugs: Education, Prevention & Policy), and health promotive journals (e.g. Health Education). Relevant context of substance abuse among young adults was extracted from selected articles of interest. Furthermore, the articles in the corresponding reference lists were researched for significant matter. Also some German articles from journals like 'Sucht' and 'Public Health Forum' were reviewed and the meaning of the insertions was duly tailored into English for reader convenience and wider dissemination. Few systematic reviews from Cochrane database were gone through earlier to have a bigger picture of the issue.

Official reports of German national health institutes like 'Robert Koch Institute', 'Bundeszentrale für gesundheitliche Aufklärung', 'Deutsches Krebsforschungszentrum', 'Statistisches Bundesamt', and 'Gesundheitsberichterstattung des Bundes' as well as official publications of specialised substance abuse related national institutes (e.g. Deutsche Hauptstelle für Suchtfragen e.V.) like 'Jahrbuch Sucht' were reviewed for significant inputs. Extracted German information of reports and statistics was translated in English for reader understanding.

Also reports of international institutes like International Centre for Alcohol Policies were gone through for pertinent substance abuse policy related information.

Websites and articles of countrywide prevention projects as well as of prevention foundations within European region (e.g. from Netherlands) were studied for corresponding inputs in thesis. Excerpts from old German newspapers, general magazines like 'Focus', and special magazines like 'Alcohol Concern' and 'About Campus' were inscribed for relevant contexts of explanation.

Annual reports of European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) were reviewed to know the present state of drug problem in Europe. Besides Eurosurveillance reports, reports of European Commision agencies like Executive Agency for Health and Consumers (EAHC), and reports of health programmes of European Union like RAND EUROPE were gone through to take up the important matter.

World Health Organisation's first global report on substance abuse (ATLAS), Organisation for Economic Cooperation and Development (OECD) reports, and studies of some private organizations like 'ComScore' and 'Global Environment Facility' were reviewed for facts and figures relevant to substance abuse among young adults in the European region.

Special books explaining adolescent experiences and health economics strategies with regard to substance abuse, handbooks on Substance Abuse for College and University Personnel, and National Association of Student Personnel Administrators Monograph Series were reviewed for alcohol policies and practices on college and university campuses. On the same lines few Dissertation and thesis works were gone through for useful information. Research reports from Deutsche Angestellten-Krankenkasse [DAK] and scientific opinion of various forums like 'Science Group of the European Alcohol and Health Forum', and 'Forum Hochschule' were reviewed for substance abuse related matter.

Website of the National Social Norms Resource Center, selected chapters from handbooks and textbooks illustrating an overview of the social norms approach, handbooks of health enhancement, and psychological bulletins were extensively researched for 'Social Norms

Approach' review. Besides research conducted at various universities in United States on harm-reduction interventions for abusers, their curriculum for implementing the model (e.g. BASICS), and presentation texts at national conferences on social norms model as well as at international / interdisciplinary public health research conferences were briefly reviewed. Serial working papers published on the report on social norms, in which intervention campaigns of individual universities in United States is drafted, were also studied.

Research articles published in national / international journals as well as reports of official health organizations and releases of Grey Literature till June 2013 were considered for this review.

3. Understanding Substance Abuse

3.1 Definitions

DSM-IV-TR (American Psychiatric Association 1994) defines substance abuse as:

- A. A maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by one (or more) of the following, occurring within a 12-month period:
1. Recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to substance use; substance-related absences, suspensions or expulsions from school; neglect of children or household)
2. Recurrent substance use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by substance use)
3. Recurrent substance-related legal problems (e.g., arrests for substance-related disorderly conduct)
4. Continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance (e.g., arguments with spouse about consequences of intoxication, physical fights)

- B. The symptoms have never met the criteria for Substance Dependence for this class of substance.

The term 'abuse' is sometimes used disapprovingly to refer to any use at all, particularly of illicit drugs. Because of its ambiguity, the term is not used in International Classification of Diseases-10 current version (World Health Organisation 2010) (except in the case of non-dependence-producing substances); harmful use and hazardous use are the equivalent terms in WHO usage, although they usually relate only to effects on health and not to social consequences. In other contexts, abuse has referred to non-medical or unsanctioned patterns of use, irrespective of consequences. Thus the definition published in 1969 by the WHO Expert Committee on Drug Dependence was 'persistent or sporadic excessive drug use inconsistent with or unrelated to acceptable medical practice'.

Public health discipline has attempted to look at it rather from a broader perspective than the individual, emphasizing the role of society, culture, and availability. Instead of accepting the loaded terms, substance abuse (also known as drug abuse) can be defined in very simple terms as a patterned use of a substance (drug) in which the user consumes the substance in amounts or with methods which are harmful to themselves or others.

3.2 Problem Significance

Hingson et al. 2002 estimate that over 1,400 students aged 18-24 and enrolled in 2- and 4-year colleges died in 1998 from alcohol- related unintentional injuries, including motor vehicle crashes. Over 5,00,000 full-time 4-year college students were unintentionally injured under the influence of alcohol and over 6,00,000 were hit or assaulted by another student who had been drinking. Thus there is an urgent need for expanding prevention and treatment programs, to reduce alcohol-related harm among college students and other young adults. Many college students report behaviors and symptoms that meet the diagnostic standard for alcohol abuse or dependence (Knight et al. 2002).

Figure 3: Age-standardised disability-adjusted life year (DALY) rates from Substance use disorders by country (per 100,000 inhabitants) in 2002.

▢	no data
▢	less than 40
▢	40-80
▢	80-120
▢	120-160
▢	160-200
▢	200-240
▢	240-280
▢	280-320
▢	320-360
▢	360-400
▢	400-440
▢	more than 440
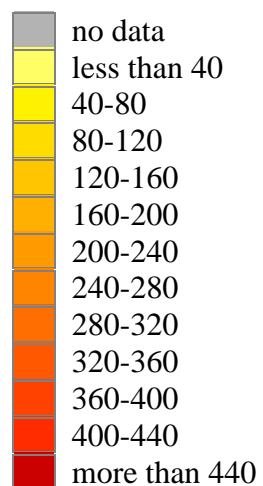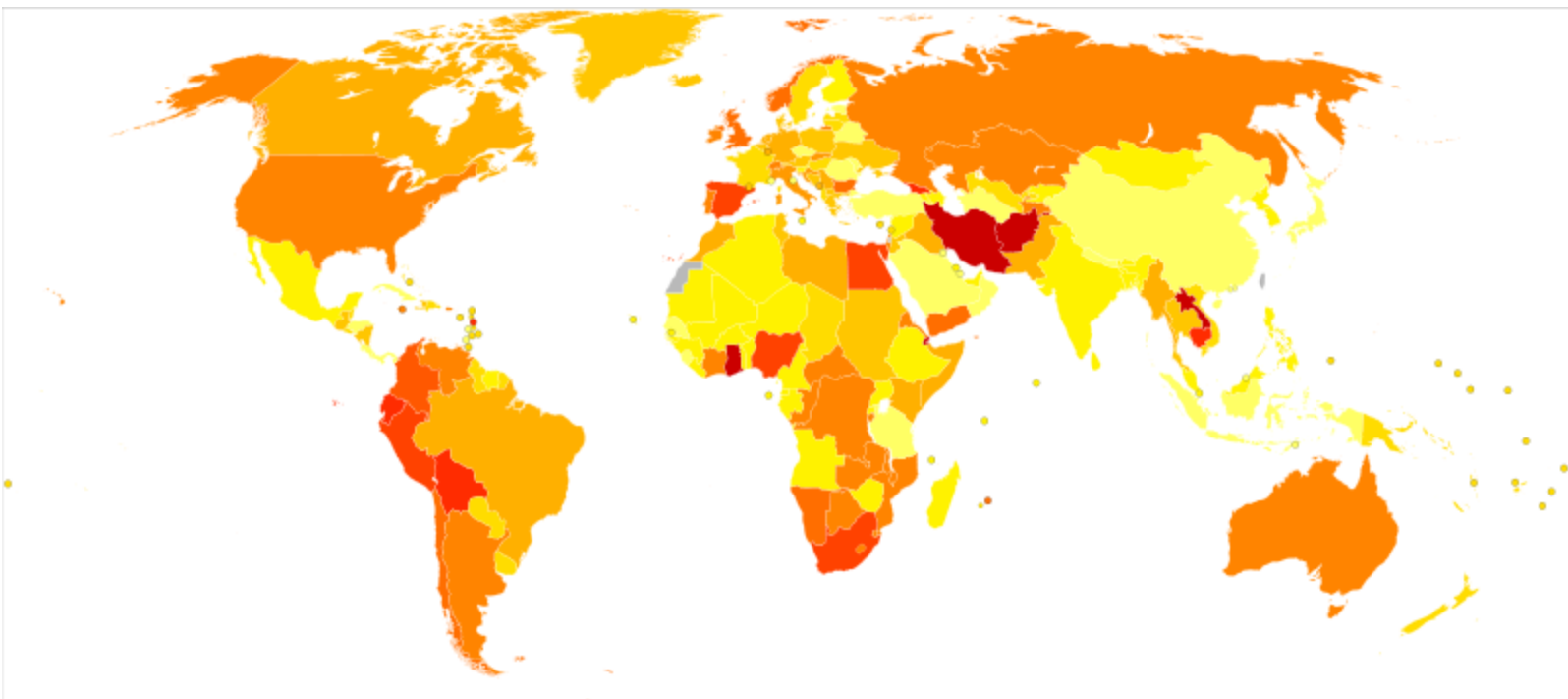
Source: World Health Organisation, December 2004

The bare global facts in little detail:

- ➢ Alcohol and illicit drug use account for 5.4% of the world's annual disease burden, with tobacco responsible for 3.7% (ATLAS, WHO 2010).

- ➢ Alcohol causes the highest demand for treatment of substance use disorders in most WHO regions bar the Region of the Americas, where treatment demand is mainly for cocaine use disorders (ATLAS, WHO 2010).

- ➢ 3,20,000 young people between the age of 15 and 29 die from alcohol-related causes each year, resulting in 9% of all deaths in that age group (WHO 2013).

- ➢ At least 15.3 million persons have drug use disorders (WHO 2013).

- ➢ Injecting drug use is reported in 148 countries, of which 120 report HIV infection among this population (WHO 2013).

Latest statistics from the European Region can be summarized as below:

- ➢ One quarter of European 18–21 year olds and 41% of 21–24 years olds report having consumed an illicit drug (i.e., cannabis, amphetamines, ecstasy, LSD, opiates, cocaine, crack or mushrooms) in their lifetime (EMCDDA 2010).

- ➢ Four percent of all European Union (EU) deaths among those aged 15–39 years are drug-related (EMCDDA 2010).

- ➢ The harmful use of legal drugs, such as tobacco and alcohol, also continues to be a problem in the EU. For example, in Germany, 21% of young adults report binge drinking at least once a month and 30% of women and 38% of men aged 20–24 are regular smokers [Statistisches Bundesamt, Akmatov et al. 2011, Helmer et al. 2010, Stock et al. 2009].

- ➢ Lastly, the use of multiple drugs at the same time (i.e., polydrug use) is widespread in Europe with the majority of drug use combinations including alcohol (EMCDDA 2010).

In this respect some specific points for Germany to be noted are:

- ➢ 8.2% of 12- to 17-years old drink alcohol quantities which are actually dangerous and risky even for healthy adults (BZgA 2009).

- ➢ Every fifth adolescent drinks once in a month 5 glasses or more in succession in one single episode (BZgA 2009). This quantity can impair the physical and mental

development of young adolescents (Seitz, Bühringer & Mann 2008). The number of young people who were to be treated in Hospital for their acute alcohol poisoning increased between 2000 and 2008 by about 170 % (from 9,514 to 25,709) (Destasis 2000-2009).

➢ Beer, mixed wine drinks, and Alcopops belong to most favourite drinks among youths (BZgA 2004, 2007, 2009). Advertising and Marketing for these products lead to the fact that young people mostly underestimate the risk of alcohol consumption and effects through it consequently increased consumption of alcohol among youths (Anderson 2007, DAK 2009, Science Group of the European Alcohol and Health Forum 2009, Saffer & Dave 2006).

3.3 Possible Etiologies

Research suggests that some of the population is *genetically* predisposed to develop an alcohol or drug addiction. Studies indicate that people identified as being addicted lack adequate production of the brain chemicals dopamine and serotonin. When the person is introduced to alcohol/other drug use, they report feeling normal for the first time. These outside stimulants take the place of brain chemicals that might be depleted or lower than normal.

There are also several factors in the *environment*, which contribute to students developing substance addiction. Availability and accessibility of mind-altering drugs are two strong environmental factors. Besides the role of peer influence during adolescence in initiating substance abuse to be maintained for lifetime should not be overlooked, especially when young people are for the first time ever outside the direct supervision of their parents in the process of developing their own identities (Arnett 2000).

A *psychological* factor focuses on a person's psychological needs. Often with entry in student life stress symptoms gradually arise which may be due to changed life situation or ensuing performance pressure in studies. The students use substances to overcome those so also sometimes to self-medicate emotional voids such as sadness, loneliness and depression.

3.4 Explanatory Theories

3.4.1 Social Learning Theory

Social learning theory has been used to explain substance abuse among adolescents literally from its inception in the 1960s (Hirschi 1969). The theory suggests that basically good children learn to become substance abusers due to such social forces as internalized definitions supportive of delinquent behavior, the influence of delinquent peers, the presence of powerful social reinforcers, and the absence of adequate social punishers (Winfree et al. 1998). Post-test analyses of one study (Hansen et al. 1988) indicated that the social pressure resistance program delivered to seventh grade subjects was effective in delaying the onset of tobacco, alcohol, and marijuana use.

3.4.2 Self-Control Theory

Self-control theory, a more recent theoretical entry, has rather different views about adolescent misbehavior: Children become delinquent owing to inadequate parenting and as a consequence thereof poorly developed self-controls (Winfree et al. 1998). Results show that the perspectives in both the theories contribute to the understanding of substance abuse in communities.

3.4.3 Social-Cognitive Theories

In substance research, scientists have traditionally focused on what may be called collective social-cognitive theories, to explain differences in alcohol and substance use. As the umbrella denominator of these theories suggests, these theories pay attention to the question of how cognitive structures (i.e. self-control, self-esteem, attitudes, et cetera) determine adolescents' alcohol and substance use. This tendency to focus on the most proximal risk factors is also illustrated in most substance prevention practices, where it is observed that most attention is focused at strengthening the individual (i.e. individual prevention), for instance, by working on the development and consolidation of the necessarily skills to manage emotiveness and interpersonal relationships, and with that further to resist social pressures for the use of tobacco, alcohol, and other psychoactive substances.

4. Results

4.1 Typical Global Trends

The most popular substance used by college students is alcohol, used by about 90% of students at least once a year (Prendergast 1994). In this aspect widely abused substance among German students is also alcohol (Stock et al. 2009; Helmer et al 2010; Akmatov et al. 2011). Furthermore two of five American college students were heavy drinkers, defined as having had five or more drinks in a row in the past 2 weeks (O'Malley & Johnston 2002). In Germany this so called heavy drinking or binge drinking is particularly characteristic of male student population (Helmer et al. 2010; Akmatov et al. 2011). Longitudinal data show that, while in high school students who go on to attend college have lower rates of heavy drinking than those who do not attend college. Both groups increase their heavy drinking after high school graduation but the college students have seen to surpass heavy drinking frequencies of their non-student same age-mates (O'Malley & Johnston 2002).

Wetter et al. 2004 examined the prevalence and predictors of transitions in smoking behavior among a cohort of 548 college students, in which among nonsmokers 11.5% began smoking occasionally, although none became daily smokers.

Amphetamine-like drug 'Ritalin' was consumed by 18% of students to increase their study performance (Middendorf et al. 2012). The share of brain doping German students was seen around 3% among those who felt no or negligible performance pressure in studies, but then it increased gradually with 4% among students feeling strong performance pressure and up to 9% among students who described having very strong performance pressure. When additional stress from side job or from family matters was considered in latter category then the share of drug consuming students increased even up to 12%. Large share of females as compared to males consumed performance stimulating drugs to overcome performance pressure (9% vs. 7%) (Middendorf et al. 2012).

In the last few years the demand of 'Spice' (synthetic cannabis) has been remarkably increased especially among young adult generation (Vardakou et al. 2010).

4.2 Latest Prevalence for Germany (Young Adults)

4.2.1 Alcohol

The recent 30-day prevalence of alcohol consumption among young adults (18 to 25 yrs old) was 81.9%, 39.8% of them consumed alcohol regularly, and the 30-day prevalence of binge-drinking was found to be 41.9% (BZgA 2012)

Students' specific values (irrespective of age) were:
Regular alcohol use - 43.4%, and Binge drinking (30 days prevalence) - 42.3%

Figure 4: Indicators of Alcohol consumption among 18-to 25-yrs old Germans in year 2011

Alcohol Consumption in percent

■ Total ■ Male ■ Female

	30 Days Prevalence 'Alcohol Use'	Regular alcohol use	30 Days Prevalence 'Binge Drinking'	Regular Binge Drinking (30 Days)
Total	81.9	39.8	41.9	12.9
Male	87	55.3	54.5	20.1
Female	76.5	23.6	28.7	5.4
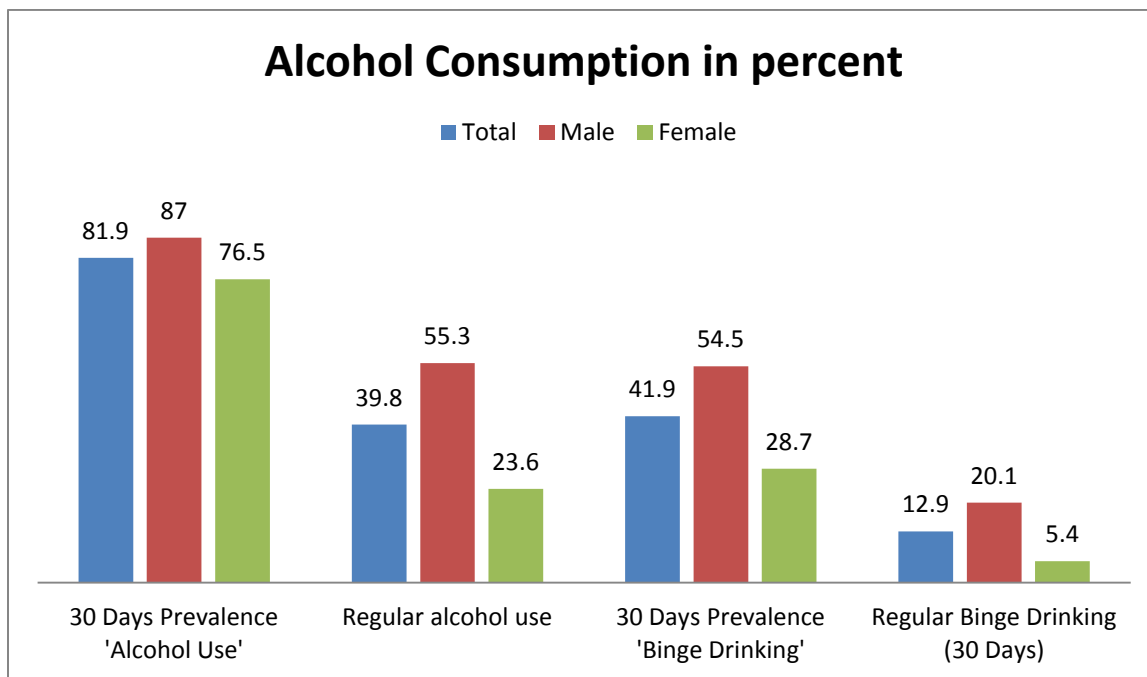
Source: Bundeszentrale für gesundheitliche Aufklärung (2012).

If we consider 30-day prevalence of alcohol consumption there was no significant gender difference with 87% of males as compared to 76.5% of females having consumed alcohol in last

30 days. But with regard to regular alcohol consumption and binge drinking the share of male participants was almost double to those of their corresponding female counterparts. In both the categories females differentiated themselves quite significantly with 23.6% consuming alcohol regularly and 28.7% of them involved in binge drinking episodes as compared to males where the values were 55.3% and 54.5% respectively (BZgA 2012). Furthermore the spread of frequent binge drinking (which means, 4 or more episodes of binge drinking by an individual in last 30 days) was about 4 times as high among males as compared to females (20.1% vs. 5.4%).

4.2.2 Smoking

32.4% of 18 to 25 years old had never smoked. In other words 67.6% of young adults in this age group had tried smoking at least once in their life. In total 35.2% of them smoked regularly (that means, they admitted smoking either occasionally or on continuous basis), 20.6% smoked daily, 14.7% smoked more than 10 cigarettes per day and 4% smoked more than 20 cigarettes per day (BZgA 2013).

Figure 5: Indicators of Tabacco consumption among 18-to 25-yrs old Germans in year 2012.

Source: Bundeszentrale für gesundheitliche Aufklärung (2013).

In this age group there were significantly less non smoking males (29.6%) as compared to non smoking females (35.4%). Also regular smoking was found to be significantly higher (37.7%) among ma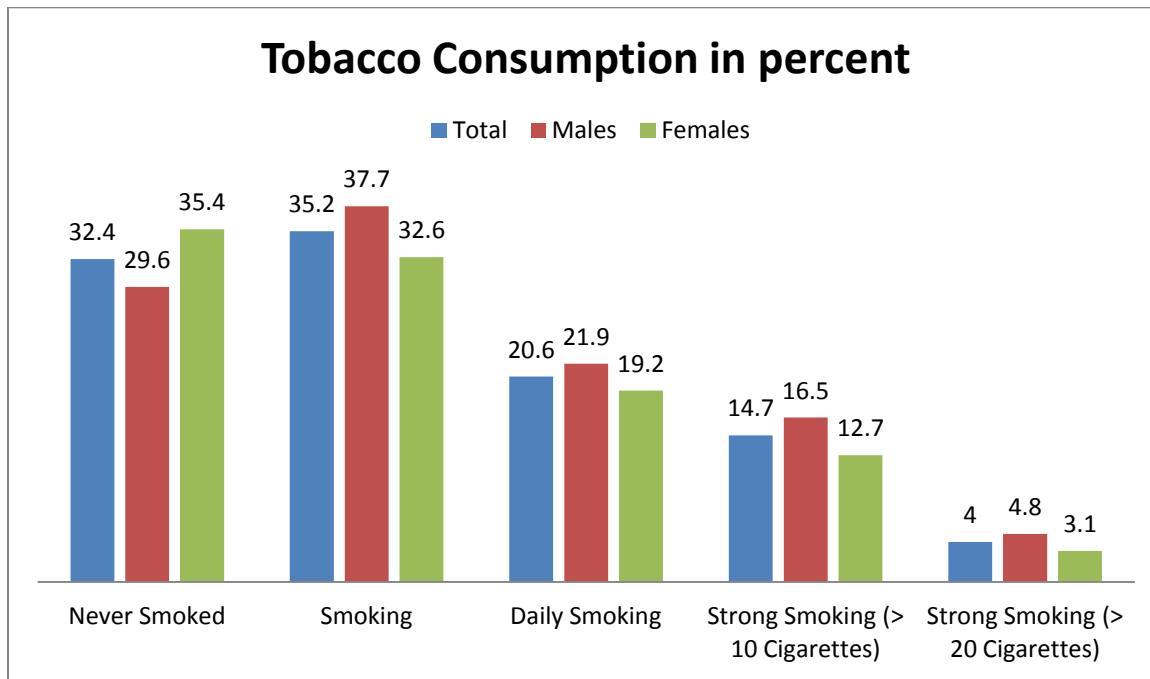les as compared to females (32.6%). As it can be seen from the graph even the strong smoking patterns (more than 10 or 20 cigarettes per day) were widely spread among young males as compared to young females (BZgA 2013).

4.2.3 General Drug Consumption

According to the results of the latest Drug Affinity Study (DAS) of the Federal Centre for Health Education, the life time prevalence for consumption of illegal drugs among young adults was 39.8% and 12 months prevalence 14.3% (BZgA 2012). This shows that for more than half of 18 to 25 years old the last drug consumption was more than a year ago. The 30 day prevalence of illegal drug consumption in this age group was 5.8% and the spread of regular consumption of illegal drugs around 3.7%.

Figure 6: Indicators of consumption of any one of the illegal drugs among 18- to 25-years old Germans in year 2011 (Source: Bundeszentrale für gesundheitliche Aufklärung 2012).
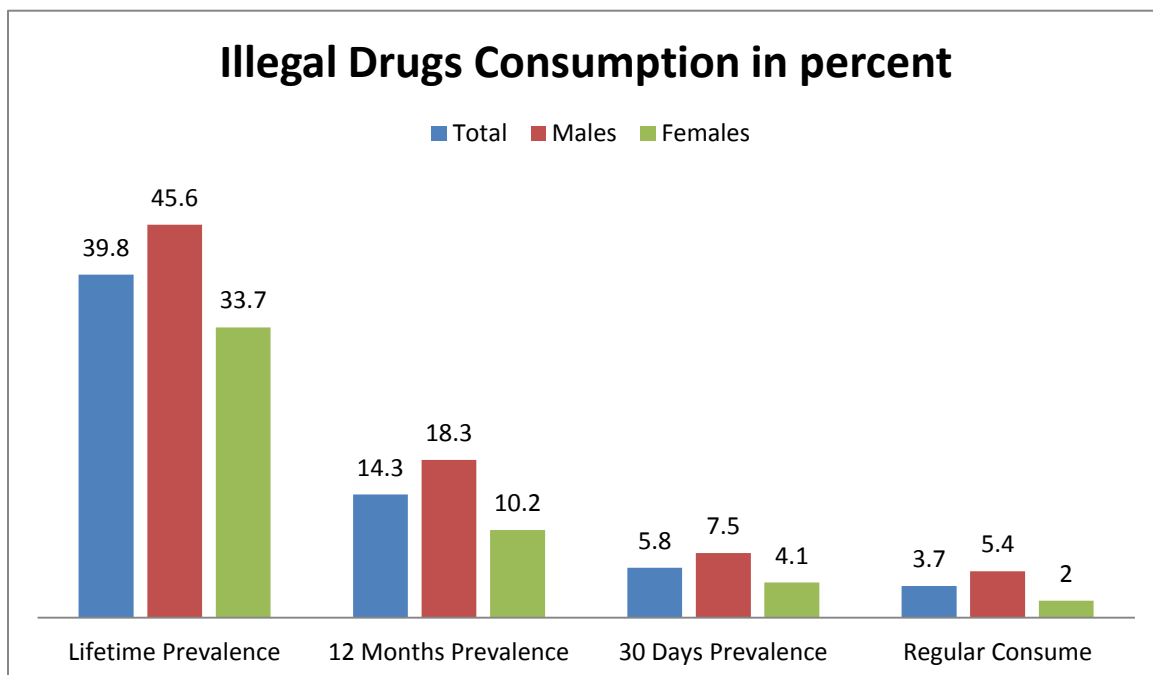
Students' specific values (irrespective of age) were:

Lifetime prevalence - 43.2%, 12 months prevalence - 17.5% and Regular consume - 4.0%

The values for males in this age group were significantly higher as compared to females for the main Indicators surveyed. Men showed lifetime prevalence of illegal drug consumption of 45.6% as compared to females who were 33.7% in numbers. The 12 months prevalence for males was 18.3% as compared to 10.2% for females. 5.4% of males consumed illegal drugs regularly as compared to 2% of females involved in the same practice (BZgA 2012).

Table 1: 12 Months Prevalence of consumption of individual illegal drugs among 18-to 25-yrs old Germans in year 2011

	Total	Males	Females
Anyone of illegal drugs	14.3	18.3*	10.2
Cannabis	13.5	17.2*	9.6
Illegal drugs other than Cannabis	2.8	4.3*	1.3
Ecstasy[1]	1.0	1.3	0.6
LSD[1]	0.3	0.6	0
Amphetamine[1]	1.6	2.7	0.6
Cocaine[1]	0.9	1.3	0.4
Crack[1]	0	0	0.1
Heroin[1]	0	0	0
Psychoactive plants[1]	0.7	1.1	0.3
Inhalational Stuff[1]	0.2	0.1	0.3

*) Statitically significant gender difference with p<0.05

(Binary Logistic Regression with covariable age).

[1]) Due to less number of Consumees the test results-

for gender differences could not be presented.

Source: Bundeszentrale für gesundheitliche Aufklärung (2012).

Cannabis remains by far the most commonly used illicit drug among young adults. Apart from this, noteworthy figures were only reached by cocaine, amphetamines, ecstasy and mushrooms (Europäische Beobachtungsstelle für Drogen und Drogensucht 2012). 2.8% of the same age group had consumed one of the other illegal drugs besides cannabis in 12 months before the survey. The individual 12 months prevalence for Ecstasy, LSD, Amphetamine, Cocaine, Crack, Heroin, Inhalational stuff and psychoactive plants fluctuated in this age group between 0% and 1.6% (BZgA 2012). The use of heroin, LSD and crack remains limited to a specific group that is clearly smaller in numbers (Europäische Beobachtungsstelle für Drogen und Drogensucht 2012).

The use of illegal drugs besides cannabis was also with 4.3% more significantly spread among male participants as compared to their female counterparts (1.3%) in 12 months period before the survey (please refer Table 1).

Table 2: Experience of 12-to 25-yrs old Germans with illegal drugs over the prv yrs in percent)

Drugs	Year				
	1993	1997	2001	2004	2008
Anyone of Illegal Drugs	17	23	27	32	29
Amphetamine / Stimulants / Speed	4	3	3	4	3
Cannabis	16	19	26	31	28
Crack	.	.	0.2	0.2	0.5
Ecstasy	.	5	4	4	3
Heroin	0.9	0.4	0.3	0.3	0.3
Cocaine	3	2	2	2	2
LSD	2	2	2	2	1
Psychoactive Plants or Mushroom	-	-	-	4	3
Inhalational Stuff	1	1	1	1	1
Other Intoxicants	1	3	3	-	-

Source: Gesundheitsberichterstattung des Bundes 14.06.2010

4.2.4 Specific Patterns

4.2.4.1 Cannabis

Around 40 % of young adults in age group of 18 to 25 years had tried cannabis at least one time in their life. 13.5% of young adults had consumed Cannabis in 12 months period before the survey (refer Table 1) and the share of persons who consume cannabis regularly in this age group was 3.3% (BZgA 2012).

In case of males the consumption of cannabis with 17.2% was significantly higher as compared to females (9.6%) in 12 months period before the survey (refer Table 1).

4.2.4.2 Performance improving drugs

Around 5% of all students pursued pharmacological brain doping whereby they consumed non-prescribed drugs in the form of pain killers, sedatives, psychostimulants or other stimulant drugs (Middendorf et al. 2012).

In the same age group (18 to 25 yrs) females consumed a fairly large proportion of non-prescribed drugs as compared to males (Middendorf et al. 2012), giving us the impression that the non-prescribed stimulant drugs play a greater role for females as compared to other substances (alcohol, tobacco etc.), which in turn play a greater role in case of males.

Study specific features:

With the study duration and thereby also with the age increase, the incidence of brain doping among students also correspondingly increased. In the starting university semesters (1st to 4th Semester) 3% of students were involved in drug abuse, but from 13th university semester onwards this share was seen double as high with 8% of students consuming non-prescribed drugs (Middendorf et al. 2012).

Also students studying Medicine and Health Sciences were significantly higher involved in drug abuse with 8% pursuing it, as compared to students studying other subjects where the proportion varied between 5% to 6% (Middendorf et al. 2012). Hence it can be clearly inferenced that there exists a strong connection between performance pressure faced in studies and the use of performance improving non-prescribed drugs.

4.3 Risk Factors

Newcomb et al. 1987 argues that the 12 psychosocial risk factors were able to explain over 50% of the variance in a measure of general drug use. A unit-weighted, summed index of risk factors was linearly related to use and abuse (heavy use) of cigarettes, alcohol, cannabis, cocaine, hard drugs, and a composite substance use score.

Family affluence and negative life events were found to be main **risk factors**, while family structure and family social control and bonding act as main **protective factors.**
Beyond individual characteristics (e.g., self-control, sensation-seeking, self-esteem, et cetera) and characteristics related to the family and school, peer group and neighbourhood also play a central role in influencing alcohol and drug use. Based on theoretical insights, one may expect that schools, together with the peer group, will have the strongest influences on adolescents' alcohol and drug use.

There are many other factors that may encourage alcohol use among young people, and alcohol marketing has been identified as one potential influence. Evidence strongly suggests that alcohol advertising will increase the likelihood that adolescents will start to drink alcohol at a young age and may increase alcohol use among those who already consume alcohol (Winpenny et al. 2012). High exposure to alcohol marketing is possible on social media sites used by young people, including Facebook, YouTube and Twitter. In addition to volume of exposure, it has to be noted how the content of television alcohol advertising contains many features that appeal to young people. Online web content is also so designed as to encourage users to make links between alcohol brand-related content of different websites, alongside the use of incentives to access online content through competitions, giveaways and, in one example, comedy videos. It is possible that social media marketing may have a stronger effect than traditional advertising due to features such as its highly interactive nature and the use of peer influence. The interactive nature of online marketing was highlighted by Ribisl (2003) in a review of the influence of the internet on youth smoking, which noted how it allows for the user to spend 'far more time browsing and interacting with a pro-smoking website than viewing a static cigarette advertisement in a magazine'.

4.4 Intervention Measures in Germany

In Germany activities of prevention can be divided into Setting prevention and into Behavioural focused prevention.

Setting prevention is devoted to the regulation of substance consumption by influencing the conditions of people's social environment positively. It covers, for example, tax increase on tobacco, making access of cigarette-dispensers difficult for adolescents, restriction on advertising of tobacco products, smoking ban in public places, as also prohibition of sale of alcohol products to adolescents under 16 years of age.

Behavioural prevention in contrary comprises activities that are aimed to influence the individual attitude towards substance consumption (Kraus, Müller & Pabst, 2008). Behaviour prevention measures aim at changing knowledge, attitude and behavior as also its stabilization at individual level. As for example, recently with the help of "Rauchfrei" campaign of Federal Centre of Health and Education the knowledge of risks of smoking was spread through, critical attitudes against smoking were promoted and help-offers to maintain non-smoking or to facilitate getting out of this habit were mediated. Experts of addiction prevention involved themselves at places like Schools and Clubs where competitions motivating non-smoking were further realized.

4.4.1 Basic Structure

Federal agencies, Länder and community administrations share responsibility for the implementation of substance prevention activities in Germany.

The school environment still remains the most important setting for universal substance prevention, while family-oriented and community-based interventions are less available. School prevention activities are primarily focused on three substances: alcohol, tobacco and cannabis. Apart from information, the school-based prevention programmes promote life skills, and encourage students to think critically about substance use and to develop their own values. The need to target at-risk children and young people is largely acknowledged. Therefore, these

groups are an important target group for indicated prevention programmes in Germany, especially children and adolescents with behavioural disorders and children in families affected by addiction.

4.4.2 Alcohol Policy

The German Law regulating alcohol use and sale seems to be rather non-restrictive as for example compared to the situation in the USA. The legislation is not designed to keep minors away from alcohol by any chance, but to teach them to use alcohol in an appropriate way. In Germany, in contrast to countries such as the USA, especially a moderate alcohol consumption is traditionally anchored and generally accepted. Recently Mechthild Dyckmanns, drug commissioner of the federal government, pointed out, that alcohol is a part of German culture, but youngsters should learn from their parents to use alcohol in a modest way (Plewnia, 2010).

The German Law aiming at the protection of juveniles (JuSCHG) sets age limits for the consumption and purchase of alcohol. These drinking–age laws cover a broad spectrum of behaviors concerning where, when and under what circumstances alcoholic beverages can be purchased and drunk. In Germany, a distinction is made only as to whether the minor is under adult supervision. As long as youngsters are accompanied by their parents, they are allowed to consume and possess undistilled alcoholic beverages starting from the age of 14. A youngster at age 16 is allowed to drink *and* purchase beer and wine, for other alcoholic beverages the minimum drinking and purchasing age is 18. At this age the adolescents become adults and get access to all kinds of alcohol, including distilled liquor (International Centre for Alcohol Policies, 2002).

Minors themselves can never be prosecuted for alcohol consumption. The violation of restraints will involve prosecution for salesmen who sell alcohol to underage persons and also for bystanders, who do not intervene in underage drinking. Since autumn 2008, e. g. the federal state of Lower Saxony started a series of trap purchases, which are conducted by youngsters, aged 14 or 17, who pose as customers. After the first three months the project revealed in more than 50% of all tests, that alcohol was sold illegally in shops, filling stations and kiosks. Shopkeepers that

are caught repeatedly, when selling alcohol without age verification to underage persons, can be charged by fines ranging from 150 to 1,500 Euro (Hannoversche Allgemeine Zeitung, 2009).

Besides defining an age for purchase and use of alcohol, legal means of restricting alcohol use in Germany are to link the granting of licenses for alcohol sales to conditions (license, fees, assessment of barkeepers etc.) and to increase alcohol taxes. Closing hours for bars and discotheques are not assigned by the state, but rather by towns and cities, generally or for individual locations. However, in most states of Germany closing hours for gastronomic business is set between 5 and 6 a.m. and is also called "cleaning hour" (Kraus, Müller & Pabst, 2008). The state of Baden-Wuerttemberg is the first to forbid the off-premises sale of liquor during night hours (10 p.m. to 5 a.m.) from year 2010 on. Public parties are prohibited nationally on Good Friday and Volkstrauertag (People's Memorial Day), regionally on All Saints' Day.

Someone who serves alcohol in Germany is liable to have a concession and bound to the German law regarding public houses and restaurants (GastG). For example it stipulates that the least expensive drink offered in a bar should be one without alcohol. Beyond that it prescribes that it is forbidden to sell spirits on a vending machine or to people that are noticeable drunk. According to this since 2007 it is forbidden to throw "Flatrate-Parties", where alcoholic beverages are served for an inclusive price (Kraus et al., 2008). Furthermore, in 2009 several railways in Lower Saxony became alcohol-free, because the enterprise Metronom assigned a prohibition to drink alcoholic beverages in their trains (Hannoversche Allgemeine Zeitung, 2009b).

4.4.3 Nationwide Prevention Programs

4.4.3.1 HaLT – Hart am Limit ("Alcohol prevention for children and adolescents")

The main goal of this model-project is to convey risk competences. Furthermore, adults are targeted to prevent their previous risky binge-drinking by making them responsible to act as a role model.

Target group

The program is aimed at adolescents, who consume alcohol at risk respectively at adolescents, who are in hospital because of alcohol intoxication (Kuttler 2009). Furthermore, their parents are an important target group (key persons). At regional level responsible persons, sales people, members of associations, teachers, event promoters are targeted.

Theoretical framework

The program connects behavior-oriented prevention and condition-oriented prevention in order to recognize alcohol-related risks for young people at an early stage and to refer them to short intervention measures (e.g. youth welfare service, doctors, social workers at school, justice). This reactive module is based on Motivational Interviewing (MI) and the Trans-theoretical Model (TTM) of early prevention. In the proactive module, controlling approaches for supply reduction in a community are used particularly (e.g. adherence to age limits). Key words of the proactive modules are responsible behavior of adults respectively they act as a role model when they consume alcohol. The law for the protection of the youth is realized consistently at events as well as in gastronomy and in retail sales. Broad public relations raise the awareness of the population (Reis et al. 2009).

4.4.3.2 SKOLL – Selbstkontrolltraining ("Self-control training")

This program which comprehends any substance and any age and aims of the participants enables them to stabilize their consumption at least, preferably to reduce their consumption respectively in the ideal case to stop substance consumption.

Target group

Adolescents and adult people, who have problems with substance consumption and/or a behavior-related disorder (Bauer 2005).

Theoretical framework

SKOLL is based on the model of Salutogenesis. The training contains 10 meetings (about 90 minutes, 1 meeting a week) with 8 to 10 participants. 8 weeks after the end of training, a further

meeting takes place in order to guarantee sustainability. Contents and methods are based on the participants needs and hold by at least one qualified SKOLL-Trainer. Everybody gets the possibility for personal development. Self-determination and personal responsibility of the participants are highlighted. Self-healing powers, existing resources, health behavior and coping strategies are promoted (Bosing et al. 2006, Bösing & Kliche 2009). The 10 contents of the training are:

- getting to know each other / introductions
- coverage of ambivalent feelings
- risk-situations
- stress management
- social network
- behavior with irrational thoughts
- crisis- / relapse triggers
- behaviour in conflicts
- recreational activities
- rituals / further meeting

4.4.4 Other Effective Settings

Klasse2000 is a programme developed in 1991 and is the most widespread health promotion programme for early school years. This programme is regularly evaluated, and a positive influence has been found on the health behaviour of children up to three years after finishing it. The peer education method for addiction prevention is applied in school settings as well as outside school, usually targeted at children in the 7th grade and older.

Family Ties is an example of intervention aiming to increase parenting skills, while the programme Strong Parents–Strong Children supports parents in building families' protective role and strengthening the basic life skills of children. The programme Elterntalk is available at 35 locations in Bavaria and also focuses on enhancing parenting skills. The federal pilot programme Family Outreach Therapy for Risky Drug Using Adolescents and their Families assists parents of drug-using children and adolescents, facilitating intra-family communication, and referring

young people to services to enable early detection and intervention. Following an evaluation it has been recommended for wider implementation.

A special programme to stop cannabis use among 14- to 25-year-olds has been running in Frankfurt since 2005, offering case management and counselling for students that use cannabis. These prevention programmes are delivered within a therapeutic or counselling context, while www.quit-the-shit.net is an evaluated online counselling programme for cannabis users.

Innovative projects for selective prevention are constantly being developed, such as Internet-based counselling, interventions in recreational settings, telephone counselling and projects specifically targeted at ethnic minorities, migrants, parents and high-risk families. In 2011 a number of universal prevention initiatives were focused on children and young people in recreational settings, for example in sports clubs.

In recent years a new universal prevention programme, Prev@WORK, has been developed for young people in vocational training settings to promote responsible substance use behaviours; it is now implemented in seven states (Länder).

A German selective prevention project, FReD goes Net, which targets young offenders, has now been implemented in 17 other EU Member States.

5. Discussion

5.1 In a Nutshell

The proportion of regular smokers among adults has shown a marked decline over the past thirty years in most OECD countries. Much of this decline can be attributed to policies aimed at reducing tobacco consumption through public awareness campaigns, advertising bans and increased taxation. Smoking rates among adults in Germany have decreased from 28.5% in 1978 to 21.9% in 2009, but still something more remains to be learned from European member states

like Sweden and Iceland who have achieved remarkable success in reducing tobacco consumption, with current smoking rates among adults around 13-15% (Organisation for Economic Co-operation and Development 2013).

Although the prevalence of cigarette smoking amongst men has decreased slightly over the past years, cigarette consumption among women is on the rise. As a result, the smoking behaviour is starting to equalise amongst the sexes. Passive smoking is as prevalent as ever. The proportion of non-smoker households among 25 to 69-year olds has hardly changed in the past decade and remains at around 50 percent (Robert Koch Institute 2008).

The EMCDDA reports positive developments with regard to more traditional drugs. There are fewer new users of heroin and fewer injecting drug users. However, there are concerns about new drugs as 73 new psychoactive substances were notified officially for the first time through the EU Early Warning System (EWS) in 2012 (European Monitoring Centre for Drugs and Drug Addiction 2013). There are concerns about globalisation and internet technology driving changes in supply and demand, as the availability of drugs on the internet has increased. Drug injection continues to be important for the transmission of infectious diseases, including HIV/AIDS and hepatitis C. The long-term decline in new HIV diagnoses related to drug injection in Europe might be halted following outbreaks among injecting drug users in Greece and Romania (European Monitoring Centre for Drugs and Drug Addiction 2013, Likatavicius & Van de Laar 2012). Hepatitis C virus antibody prevalence among national samples of injecting drug users in 2010–11 varied from 18% to 80%, with eight of the 12 countries with national data reporting a level over 40% (European Monitoring Centre for Drugs and Drug Addiction 2013).

5.2 Past Progress

Campaigns for reduction of substance abuse among students were till date predominantly based on traditional prevention strategies. Some involved anti-drug media campaigns aimed at informing about harmful health consequences of licit and illicit drugs, such as the "Drugwatch" campaign in the USA. Others were educational interventions for drug use prevention informing about the harmful effects of drug use at schools and universities [Dejong 2002, Hastings et al.

2004]. The majority of these prevention approaches were ineffective in reducing rates of licit and/or illicit drug use in young adults [McAlaney et al. 2011, Foxcroft et al. 2003].

Major shortcomings of these approaches included the use of fear appeals and scare tactics, which often emphasize the harmful effects of drugs. These messages may not be taken seriously by the target population because negative consequences of drug use are often overstated and students often correctly perceive that the majority of these consequences are unlikely to occur [Foxcroft et al. 2003]. In addition, some of the earlier anti-drug campaigns were based on the "Social Inoculation Theory", which states that, teaching students skills to resist peer pressures or in other words "inoculating" them against social influences to use drugs will prevent actual drug use [Evans 1984]. Instead of inoculating students against social influence of their peers, a new influence is being leveraged nowadays to affect students' drug use behaviour by correcting exaggerated perceptions of risky behaviours in the peer group.

5.3 Recent Developments

As Hawkins et al. (1992) suggests, the most promising route to effective strategies for the prevention of adolescent alcohol and other substance use problems is through a risk-focused approach. This approach requires the identification of risk factors for substance abuse, identification of methods by which these risk factors have been effectively addressed in the past, and application of these methods to appropriate high-risk and general population samples in controlled studies. Accordingly social influence in the form of social norms, or the "perceptions and beliefs what is 'normal' behaviour in the people close to us" (p.3, [Moreira et al. 2009]) has been identified as a key factor modifying drug use behaviour among young adults (Berkowitz 2005, Perkins 2003, Perkins 1999).

As most of the students leave their parents home and live independently in the new phase of late adolescence, the peer group takes on increased importance in their lives, and going further the 'social norms' in relation to substance consumption among this peer group become increasingly relevant (Arnett 2000). Furthermore, online marketing strategies such as creating the opportunity for user comments on substance brand pages and the sharing of page links between friends (for

example, using the Facebook 'like' button) may increase the effect of peer influence (Montgomery & Chester 2009). It is known that individuals, and young adults in particular tend to overestimate drug use in their respective peer group and that these incorrect perceptions are predictive of higher rates of personal drug use (Haines & Barker 2003, Perkins & Craig 2003, Johannessen & Glider 2003, Kilmer et al. 2006, McAlaney & McMahon 2007, Bewick et al. 2008, Page et al. 2008). Individuals may overestimate both the frequency and quantity of alcohol consumption of their peers, and also overestimate how acceptable their peers feel heavy drinking to be. A smaller number of studies have evaluated the role of injunctive norms on illicit drug use. For example, one study showed that students tend to overestimate the level of approval of marijuana use behaviour in their peer group (LaBrie et al. 2010). The individual is then motivated to match their own alcohol consumption to what is an incorrect perception (Festinger 1954, Bosari & Carey 2001).

The 'Social Norms' approach to prevent school and college age substance abuse is a new and highly successful alternative to traditional methods for preventing substance abuse among young people. The proven "Social Norms" approach identifies young people's dramatic misperceptions about their peer norms and promotes accurate public reporting of actual norms that exist in all student populations (Perkins 2003). Thereupon the personal consumption of substances by students adjusts itself to corrected levels shown to them, thus bringing about reduction in risky behaviors among students. It is already showing good effects in USA and New Zealand to prevent and reduce the prevalence of substance abuse and other risky behaviours among students (McAlaney et al. 2010). 'Social Norms' approach works quite effectively especially for the target group of students (Kypri et al. 2009; Lewis & Neighbors 2006; Bewick et al. 2010). Many of active proponents of this approach have successfully applied the 'Social Norms' approach in secondary and higher education settings and as a result have promoted healthier lifestyles among adolescents and young adults across the United States.

5.4 Implementation of Social Norms Intervention in Europe

Presently BIPS and University of Bremen are carrying out a study in 7 participating European countries, in which the feasibility of internet based 'Social Norm' intervention for reduction of

legal and prevention of illegal substance consumption by students is being tested (Pischke et al. 2012). The first results of this SNIPE study which ended in February 2013 showed that the consumption of legal as well as illegal drugs was overestimated by student participants from all participating countries. In frame of this feasibility study in Europe a internet based 'Social Norm' intervention was developed which gave a corrective feedback to students about real life substance consumption in peer group (to correct the misperceptions about it they had previously).

5.5 Analysis

Prevention programmes that focus on empowering young people with psychosocial skills (e.g. self-efficacy, coping strategies, assertiveness, handling peer pressure, et cetera) is a powerful tool and currently one of the most popular prevention programmes in Germany. Important in any person-related prevention programme is however to involve the students themselves in this educational process by working interactively and by putting their particular social world to the foreground. By making students actors in prevention instead of passive recipients, and by focusing on positive messages (e.g. it can be cool and healthy to be a non-alcohol drinker) instead of negatives ones (e.g. drinking can kill you) in prevention programmes would have stronger and longer-lasting effects. Ideally, this empowerment program is be complemented with the provision of accurate and up-to-date information on both alcohol and drugs themselves, as well as on the use of substances by adolescents' peers. This because adolescents tend to overestimate systematically the alcohol and substance use of their age mates (Haines & Barker 2003, Perkins & Craig 2003, Johannessen & Glider 2003, Kilmer et al. 2006, McAlaney & McMahon 2007, Bewick et al. 2008, Page et al. 2008). Adjusting these misperceptions through accurate information campaigns has the additional benefit of diminishing possible negative peer influences.

Recent work in the UK, studying a sample of about 400 primary school children aged 10–11 in Wales, has shown that the majority of the children (between two thirds and 95 per cent) recognised alcohol brands and that recognition of certain alcohol brands was higher than that of

food brands (Alcohol Concern 2012). The findings suggest how it is important to understand the role of alcohol brand recognition in relation to perception.

As drinking patterns only start to develop from adolescence onwards, and strongly determine later drinking habits, tackling these problems makes it necessary to focus on prevention. However, given the unequal allocation of funds in the advantage of treatment and harm reduction programs the impression arises that programs that focus on prevention are much less valued among politicians and policy makers. In 2007, a 16-year-old boy in Germany died in a bar after having drunk over 50 shots of tequila. As a consequence of this event a nationwide discussion was released about alcohol abuse among minors and an appropriate threshold for drinking age. However, most politicians did not follow that media induced discussion and instead pointed out that such abuse already was forbidden according to current laws, which simply needed to be enforced (Plewnia 2010). Furthermore, European citizens generally do not appear to be in favour of alcohol advertising targeting young people. A recent Eurobarometer survey (2010) found that 77 per cent of respondents across 27 Member States agreed that alcohol advertising targeting young people should be banned in the EU. In the countries considered in this study, the corresponding figures were 68 per cent in the UK and the Netherlands and 80 per cent in Germany. However existing regulation in European Union Member States that are designed to restrict the targeting of alcohol marketing to young people are typically limited to audiovisual media, with moves to extend existing regulations to online media occurring only recently.

The effectiveness of these different forms of regulation is inadequately understood. For instance, the limitations of a time ban as a sufficient policy tool become more apparent against the background of an increase in the use of other media such as online television, which provide opportunities to watch programmes at any time. Given the increasing importance of online media it will be crucial to better understand the impact of regulations on the extent of online alcohol marketing. Although there have been attempts to put into place restrictions to prevent young people from accessing alcohol-related content online, their effectiveness is questionable, for example age verification pages of alcohol brand websites can easily be over-ridden. There is a need for further development of effective ways to control under-age access, such as the development of web-wide firewalls, which can be used to block all alcohol-related content.

There is also a need to better understand potential marketing outlets other than television and social media, such as online video advertising. Online video adverts are found in a variety of contexts, for example during online television or on the YouTube website. A study of advertising relating to tobacco available on the YouTube website was conducted in 2010 (Elkin et al. 2010) and a similar work could be undertaken on alcohol adverts. Another area for further investigation is the advertising achieved through mobile internet, which has a 7.7 per cent share of all connected device traffic in Europe, so offering a significant platform for advertising (Abraham 2012).

In summary, there is still scope for strengthening the regulatory environment in which the whole trade operates. For instance, regulators may consider restricting the content of alcohol advertisements. Further work is needed to ascertain more precisely what features of an advert are appealing to young people and how they can be avoided in alcohol advertising. Such work should make more systematic use of young people's views. The recent study by Alcohol Marketing Monitoring in Europe made use of youth rating panels to assess a selection of adverts which were thought to violate existing national rules, and report on whether they were attractive to their peers (Bruijn et al. 2012). It found substantial discrepancies between what national regulators would consider 'appealing to young people' and what young people themselves reported to be attractive to them. This highlights the need to involve young people in relevant research, and to understand whether and how views might differ across different age groups.

While structural prevention has been widely adopted in the domain of regulation (e.g. drink-driving policy, controlling the availability and taxation of alcoholic beverages, et cetera), this is not the case for the different structural and cultural environments students grow up in. Moreover, while alcohol prevention strategies aimed at working on psycho-individual coping mechanisms (i.e. handling peer pressures, assertiveness, et cetera) are a valuable investment, individual prevention can be efficient only if complimented by measures of structural prevention. The latter focus more on long-term measures which address the underlying causes of alcohol and substance use. As such, they have a much broader scope and have the potential to increase the durability of prevention considerably.

Although changing the social and physical environment is far more effective in making healthy practices the default social option than changing individual behaviour, governance of addictive substances and behaviours could be also altogether better redesigned to improve the health and well-being of young generation.

5.6 Limitations

Though the review was primarily focused on young adults between 18 and 25 years of age, the discussion could be potentially generalisable to immediate lower and higher age groups also, as the risk factors to which they are altogether exposed in their socio-cultural and structural environments would more or less going to remain the same. Nevertheless, some minor objective differences amongst them cannot be ruled out. The regulations for the elder age group would also be quite similar as for young adults, as per the political will they can be little strengthened for the younger age group. With regards to interventions, considering cost-effectiveness they can be extended to both lower and higher age groups for their eventual health benefits and increased productivity at the work place respectively. So it's just the matter of how we visualize the present discussion and the conclusions drawn there upon in the relevant context.

It has been tried here to look at substance abuse from a very broad point of view. It considers wide range of inter-dependent stakeholders, and covers not only personal, social, cultural, environmental and political factors prevailing in the country but also other influential industries such as tobacco and alcohol who usually have their well set lobbies in place driving the business against all odds (including black market for illegal drugs). Hence it should not be necessarily dealt in a way they are discussed here if we do not find same set of combination factors influencing it for a community or rather for a living environment surrounding thereby (and this is very much possible). But given the fact that there is no reliable way to predict who will develop an alcohol, tobacco or drug addiction with any of these combinations (there is no typical personality or set of fixed structural attributes responsible for it), cautiously analyzing the inter-play of these diverse factors as applicable to the given situation in hand would surely provide the much needed boost for health promotion and welfare activities for the younger generation.

6. <u>Conclusions</u>

Tackling substance addiction is a complex, difficult task, with many medical, political, judicial, and social factors at play. The German government's drug strategy include laudable aims - targeting prevention strategies to young people, aiming for complete recovery from drug dependence for people with addiction, and recognising the threat of emerging trends in drug misuse. But good intentions alone are not enough. In order to have long-standing effects, prevention needs to engage everybody in the field. Parents, schools and local communities are partners herein, but also civil society, consumer organizations, the alcohol and tobacco industry, and the social and cultural sector.

However, it is quite difficult to interview the business leaders in this area – there is no one to interview in tobacco, and alcohol is very wary of being interviewed. This is unfortunately not a good thing because unless you accept and recognize the conflict, there is nothing that you can do to study the web of influence. And, you cannot recognize or accept conflict if you cannot talk about it. Thus it is a real challenge to study determinants of risky use, problematic use and in and out of dependence from a wide range of individual and societal factors. But if we manage to do it then estimating the social costs from the three groups of substances (alcohol, tobacco and illicit drugs) including estimates of the social costs of harms to others, and then modeling avoidable costs through policy implementation could be a success.

Ideally this should encompass, besides data collection for the prevalence, also undertaking historical analyses, studying stakeholder views, and reviewing media portrayal and public understanding of what is meant by substance addictions. Hopefully this report would encourage additional research not only into the prevalence and risks associated with substance use, but also in refining interventions and optimising their implementation across Germany.

6.1 Recommendations

The success stories presented in recent EU report convincingly illustrate the positive impact of joint actions to the health of EU citizens. Since 2008, 20 joint actions have been funded under

the health programme (for the period 2008–11). This has led to organisations joining together to develop the best solutions for common European public health problems, ready to be rolled out at their respective national levels (Executive Agency for Health and Consumers 2013). Accordingly the European dimension would certainly provide a boost to national, regional and local efforts in tackling substance addiction issues. Findings for Germany appear to suggest that higher exposure to abusive substances among young people by any of the discussed means is not inevitable and it will be necessary to identify the factors underlying this observation if we are to inform policy developments in Germany and Europe more broadly.

Policy measures which can be further strengthened or recommended:

First, as previous knowledge demonstrates that strong bonding and parental control decreases alcohol use among youths, interventions which include teaching parenting and social skills to parents should be encouraged. Policymakers should focus on implementing programs which encourage parents to take control of their childrens upbringing and the notion that their own behavior has a strong impact on their children (Kuttler 2009, Plewnia 2010).

Second, since adolescents who experience negative life events are more prone to alcohol use, it is suggested that programs which strengthen social skills in adolescents should be promoted because those adolescents who experienced negative life events need to acquire necessary social skills to cope in difficult situations (for example, how to manage parental conflicts at home), and also problem solving skills (for example, how to resist peer pressure).

Third, young people should be empowered by means of a life skills approach. Individuals, who are already exposing themselves to high risk of harmful health consequences, should be motivated to make use of getting-rid-of-habit help offers on internet such as those of drug.com as also of local counseling centers.

Fourth, person-related prevention should be complemented by structural prevention measures (specially applicable for the socio-cultural environment in which the adolescents grow up). One of the main criticisms on this strand of research is that little attention is paid to the social and

contextual environment in which these behaviours occur. Past analyses of more distal risk factors that relate to the structural and cultural environment in which teenagers spent most of their time together (i.e., peers, school, neighbourhood) has showed that investing in these structural environment directly impacts substance use, and that the risk and protective factors in different domains are strongly correlated.

Fifth, investments in evidence-based prevention programmes and policies, and in the diffusion of implementation and knowledge on best practices should be increased. In realising the Government's strategy, they need to be certain that new measures are based on the best available evidence, and at the same time resisting punitive approach to address substance addiction, instead, as any other chronic illness. A substantial body of knowledge already exists to allow identification of efficacious policies and interventions. However, the success of a prevention program depends to a large degree on the way it is tailored to the needs of the setting at hand, and therefore harmonization of legislation and prevention programs is not recommended.

6.2 Research Implications

Although alcohol use has decreased somewhat in recent years, much larger declines in use have been recorded for illicit drugs (Prendergast 1994). However, the major proportion of research on substance use in this population has been devoted to alcohol; more information is needed on the prevalence, patterns, and correlates of illicit drug use.

Research on adolescent substance abuse and effective prevention strategies has been dominated by studies of U.S. samples (IOM 2009, Hunt & Barker 2001, Alsaker & Flammer 1999). This has prompted calls for studies of adolescent development and alcohol and drug use behaviour that examines samples from European countries. This type of study would give researchers the ability to distinguish between universal and context-specific influences on behaviour across countries and cultures.

The effectiveness of 'Social Norms' intervention in terms of reduction of legal and prevention of illegal substance abuse in a big study sample in Germany is yet to be analysed. But given the fact

that, other than the control of substance abuse this intervention has also been used for changing an array of behavious like sunscreen use, rumour spreading in high-school, and towel re-use in hotels in international context (McAlaney et al. 2011), testing its validity to control substance abuse in Germany is quite worth considering its overall health benefits for the younger generation.

7. <u>The Social Norms Approach</u>

This comprehensive review of the Social Norms literature attempts to provide readers with an overview of this innovative approach, to summarize the evaluation literature regarding its effectiveness, and to address any open questions and concerns.

Several institutions that persistently communicated accurate social norms have experienced reductions of up to twenty percent in high-risk drinking over a relatively short period of time…. Together these findings provide strong support for the potential impact of the social norms approach. (NIAAA, p. 13, 2002)

In addition to addressing alcohol use with social norms marketing campaigns other programs have demonstrated the effectiveness of social norms interventions in reducing or preventing cigarette smoking, reducing Driving While Intoxicated (DWI), changing attitudes associated with rape proclivity in men, and reducing sexual assault. Positive results have been obtained with college and university students, with high school and middle-school populations, and in defined populations such as sorority and fraternity members, athletes, and first-year college students, and with individuals, groups, and communities.

7.1 Social Norms Theory

The social norms approach provides a theory of human behavior that has important implications for health promotion and prevention. It states that our behavior is influenced by incorrect perceptions of how other members of our social groups think and act. For example, an individual

may overestimate the permissiveness of peer attitudes and/or behaviors with respect to alcohol, smoking or other drug use, or underestimate the extent to which peers engage in healthy behavior. The theory predicts that overestimations of problem behavior will increase these problem behaviors while underestimations of healthy behaviors will discourage individuals from engaging in them. Thus, correcting misperceptions of group norms is likely to result in decreased problem behavior or increased prevalence of healthy behaviors.

Social norms interventions focus on peer influences, which have a greater impact on individual behavior than biological, personality, familial, religious, cultural and other influences (Berkowitz & Perkins, 1986a; Borsari & Carey, 2001; Kandel, 1985, and Perkins, 2002).

Research suggests that these peer influences are based more on what we think others believe and do (the "*perceived norm*") than on their real beliefs and actions (the "*actual norm.*") This gap between "perceived" and "actual" is referred to as a "misperception" and its effect on behavior provides the basis for the social norms approach. Presenting correct information about peer group norms in a believable fashion is hypothesized to reduce perceived peer pressure and increase the likelihood that individuals will express preexisting attitudes and beliefs that are health promoting. Thus, providing normative feedback to correct misperceptions of norms is the critical ingredient of the social norms approach.

7.2 Chronological Development of Theory

Since its inception, the social norms approach has been described variously as the proactive prevention model (Berkowitz, 1997, 1998), social norming (Hunter, 1998), the perceived norms model (Thombs, 2000), norms correction, and the norms challenging model (Farr & Miller, 2003; Peeler, et al 2000).

The social norms approach was first suggested by H. Wesley Perkins and Berkowitz (Perkins and Berkowitz, 1986) in an analysis of student alcohol use patterns. In this study they determined that college students regularly overestimated the extent to which their peers were supportive of permissive drinking behaviors, and they found that this overestimation predicted how much

individuals drank. Their recommendation that prevention efforts focus on providing students with accurate information on peer drinking attitudes and behavior (Perkins & Berkowitz, 1986; Berkowitz & Perkins, 1987a) represented a radical departure from traditional intervention strategies that provided information on abuse and negative consequences and concentrated primarily on the identification, intervention, and treatment of problem users. Interventions based on social norms theory focus on the healthy attitudes and behavior of the majority and try to increase it, while also using information about healthy norms to guide interventions with abusers. The theory underlying the social norms approach has been elaborated by Berkowitz (1997, 2004) and Perkins (1997, 2003a). In many cases, social norms interventions have been successfully combined with other drug prevention approaches strategies such as policy change and other environmental strategies.

Michael Haines at Northern Illinois University was the first prevention specialist to apply the theory to college students. He conducted a longitudinal intervention in which reductions in misperceptions were associated with increases in safe drinking and abstaining (Haines, 1996; Haines & Barker, 2003; Haines & Spear, 1996). His work was followed by similar efforts at other campuses, which achieved significant reductions in high-risk drinking following the promotion of accurate social norms about drinking behavior (Glider et. al, 2001; Johannessen & Glider, 2003; Johannessen et. al, 1999; Fabiano, 2003; Perkins & Craig, 2002; 2003a; Foss et al, 2003; 2004).

Following initial successes in reducing alcohol use and abuse, social norms interventions were developed at colleges and universities to reduce tobacco use and/or delay its onset (Haines, Barker & Rice, 2003; Hancock et al, 2002; Hancock & Henry, 2003; Linkenbach & Perkins, 2003a). More recently, interventions developed for middle and high school students have succeeded in reducing alcohol and cigarette use and/or delaying the onset of these behaviors (Christensen & Haines, 2004; Haines, Barker & Rice, 2003; and Rice, 2003). Other applications have successfully increased seat-belt usage (Perkins & Linkenbach, 2004), and reduced drinking while driving (Hellstrom, 2004). In addition, social norms interventions have been developed to prevent sexual assault (Bruce, 2002; Hillenbrand-Gunn et al, 2004; Rodriguez, Kulley & Barrow, 2003; White, Williams and Cho, 2003).

7.3 Dissecting the approach

7.3.1 Influential Norms handled by approach

One kind of norm refers to attitudes or what people feel is right based on morals or beliefs (*injunctive norms)*. A second type of norm is concerned with behavior, i.e. what people actually do *(descriptive norms)*.

Borsari and Carey's 2003 meta-analysis of 23 studies of norms misperceptions (described as "self other differences") found that misperceptions for injunctive norms were greater than misperceptions for behavioral norms. They also found that injunctive norms were more likely than descriptive norms to predict drinking behavior and negative consequences of drinking. Trockel, Williams and Reis (2003) reached a similar conclusion in an investigation of injunctive and descriptive drinking norms in fraternities, as did Larimer and Neighbors (2003) in a study of misperceptions of gambling norms.

While both injunctive and descriptive norms are widely surveyed in social norms efforts, most successful interventions have used descriptive norms. Thus, it is not clear from existing research if one of these norm types would be more likely to change behavior than the other and should therefore be preferred in social norms interventions.

7.3.2 Relationship between Perception of Norms and Actual Behaviour

In a number of studies, perceptions of drinking norms were positively associated with drinking behavior (Perkins & Wechsler, 1996; Clapp & McDonnell, 2000; Perkins, 1985; 1987).

Also following specific characteristics and additions to the relation to be noted:

• Thombs, Wolcott and Farkash (1997) and Beck and Trieman (1996) found that the best predictors of alcohol use were misperceptions of alcohol use and social climate/context, which both predicted heavy drinking and negative consequences;

• Korcuska and Thombs (2003) found that alcohol use intensity and drinking consequences were positively correlated with perceived norms for both "close friends" and "typical students"; and

• Page, Scanlan and Gilbert (1999) found that overestimations of high-risk drinking were directly correlated with rates of high-risk drinking. Thus, higher rates of high-risk drinking were found among college men who had greater overestimations of its prevalence.

In longitudinal studies examining drinking behavior [Sher et al (2001); Prentice and Miller (1993); Steffian (1999); (D'Amico et al, 2001); (Botvin, et al, 2001); (Marks, Graham & Hansen 1992); Hansen (1985)], perceptions of norms have accurately predicted behavior change at a later point in time.

In summary, a substantial body of research suggests that misperceptions exist, that misperceptions are associated with increased drinking and negative consequences from drinking, and that drinking behavior is often best predicted by misperceptions of drinking attitudes/or and behaviors. This includes correlational studies, longitudinal studies, and outcome studies with experimental and control groups. Similar findings have also been reported for other problem behaviors, such as gambling (Larimer & Neighbors, 2003).

7.4 Evidence supporting Social Norms Approach

There are at over twenty published studies in which misperceptions are positively correlated with drinking behavior or predict how individuals drink (Beck & Trieman, 1996; Botvin, et al, 2001; Clapp & McDonnell, 2000; D'Amico et al, 2001; Korcuska & Thombs, 2003; Kypri & Langley, 2003; Lewis & Neighbors, 2006; Marks et al, 1992; Mattern & Neighbors, 2004; Page et al, 1999; Perkins, 1985, 1987; Perkins & Wechsler, 1996; Prentice & Miller, 1993; Scher et al, 2001; Steffian, 1999; Thombs, 1999; Thombs et al, 1997; Trockel et al, 2003).

Besides these there is one meta-analysis (Borsari & Carey, 2003) that document the importance of social norms and peers in influencing behavior.

7.5 Implementation of the Approach per se

Social norms theory can be used to develop interventions that focus on the three levels of prevention specified as universal, selective, and indicated (Berkowitz, 1997).

Universal prevention is directed at all members of a population without identifying those at risk of abuse. *Selective prevention* is directed at members of a group that is at risk for a behavior. *Indicated prevention* is directed at particular individuals who already display signs of the problem. A variety of successful social norms interventions have been developed that address universal, selective, and indicated prevention.

Interventions in each of these categories are reviewed below:

7.5.1 Universal Prevention – Social Norms Marketing Campaigns

A number of college campuses and high schools have successfully reduced drinking by developing community-wide electronic and/or print media campaigns that promote accurate, healthy norms for drinking and non-use. This includes Western Washington University (Fabiano, 2003), the University of Arizona (Glider et al, 2001, Johannessen & Glider, 2003; Johannessen, et al, 1999), Northern Illinois University (Haines, 1996; Haines & Barker, 2003; Haines & Spear, 1996), Hobart and William Smith Colleges (Perkins & Craig, 2002, 2003a), Rowan University (Jeffrey et al, 2003), and the University of North Carolina Chapel Hill (Foss et al, 2003, 2004). These campaigns use social marketing techniques to deliver messages about social norms and can be described as "*social norms marketing campaigns.*" At these schools, a reduction of 20% or more in high-risk drinking rates occurred within two years of initiating a social norms marketing campaign, and in one case resulted in reductions of over 40% after four years. Haines, Barker and Rice (2003) reported similar results for both tobacco and alcohol in social norms marketing campaigns conducted in two Mid-western high schools. These findings were recently replicated in a second high school (Christensen & Haines, 2004; Rice, 2003).

Among the most thorough and comprehensive evaluations of social norms campaigns are those by Perkins and Craig (2002) and Foss and his colleagues (2003, 2004). Perkins and Craig (2002) described an intervention that combined a standard poster campaign with electronic media, an interactive web site, class projects that developed parts of the campaign, and teacher training for curriculum infusion. The intervention began in 1996 at a college with higher than average alcohol use. A number of evaluations were conducted to determine the effectiveness of the campaign. Results included: 1) increases in drinking that normally occur during the freshman year were reduced by 21%; 2) a campus-wide decrease in high-risk drinking during the previous week from 56% to 46%; and 3) successive decreases in alcohol-related arrests over a four-year time period. Corresponding reductions were also found in misperceptions of use, heavy drinking at a party, and negative consequences associated with alcohol use. Surveys conducted at three time periods over a five-year period indicate successive linear decreases in all of these measures over time.

Foss and his colleagues (2003, 2004) conducted a social norms marketing campaign for first-year students with the theme: "Whether it's Thursday, Friday, or Saturday night, 2 out of 3 UNC students return home with a .00 blood alcohol concentration (BAC)." A unique feature of the study was that the BAC data was collected using breath samples of students coming home to their residence halls. The program was thoroughly evaluated and at the end of five years, the mean number of drinks on the night of the interview decreased from 5.1 to 4.3, the proportion of drinkers with a BAC above .05% on the night of the interview decreased from 60% to 52%, and the percentage of respondents who could be classified as heavy drinkers on the night of the interview decreased from 14% to 10% (representing an overall decrease of 29%.) By using actual BAC measures, this study addresses concerns raised about social norms campaigns that rely on survey data to document effectiveness because it demonstrates that the reductions in use are not due to potential response bias or the possibility that students are taught by social norms campaigns to answer surveys differently.

Social norms marketing campaigns have also been successful in reducing smoking prevalence and delaying smoking onset. For example, in a campaign directed at 12-17 year olds, only 10 percent of non-smokers initiated smoking following the campaign, while 17 percent in the

control sample began smoking. This represents a 41% difference in the proportion of teens initiating smoking in the intervention cases as compared with those in the control group (Linkenbach & Perkins, 2003a). On the same lines, a 29% decrease in smoking rates was achieved at University of Wisconsin from a multi-component intervention including a social norms media campaign, while rates at a control campus did not change significantly (Hancock, et al, 2002). Finally, in one study use remained stable and perceptions became more accurate while the number of cigarettes smoked per month at a control campus increased (Hancock & Henry, 2003). In addition to providing strong support for the effectiveness of social norms campaigns for smoking reduction, these studies all used comparison groups, thus strengthening the scientific literature in support of the model.

Finally, Hellstrom (2004) recently reported on a three-year, seven campus study in which Driving While Intoxicated was reduced overall by 13% (with one campus reporting a decline of 40%) along with reductions in high-risk use from 36% to 29%.

These results provide strong evidence that the social norms approach can be effectively applied as a universal prevention strategy to reduce high-risk drinking and promote moderate alcohol use, and for smoking to reduce smoking prevalence and delay its onset.

7.5.2 Selective Prevention – Targeted Social Norms Interventions

Targeted interventions focus on members of a particular group, such as first-year students, fraternity and sorority members, athletes, or members of an academic class. Misperceptions of close friends' behavior are highly correlated with personal use, a finding that has led to the development of selective social norms interventions on a number of campuses. In most of these efforts, information about the actual group norms are provided in small interactive group discussions, workshops, or academic classes. Due to their smaller size and more manageable format many of these interventions have been evaluated using randomized assignment to experimental and control groups.

The following successful targeted small group norms interventions have been reported:

• Schroeder & Prentice (1998) designed an intervention for first-year students that randomly assigned participants to one of two discussion groups during their first term. In the *norm-focused condition,* students were given data showing systematic misperceptions of drinking norms on campus and participated in a facilitated discussion about actual norms and the social dynamics of drinking. In the *individual-focused condition,* students participated in a discussion of how to make responsible drinking decisions. In a follow-up questionnaire six months later, students in the norm-focused condition consumed significantly fewer drinks each week than students in the individual-focused condition.

• Washington State University pioneered the development of selective interventions with groups such as athletes, fraternities, sororities, and first-year students (Barnett, et. al, 1996; Far & Miller, 2003; Peeler et al, 2000). WSU's "Small Group Norms Challenging Model" provides group members with feedback about their group's actual and perceived drinking patterns in a 45-minute workshop. Discussion focuses on the nature and causes of misperceptions in a talk show format using slides with data on actual and perceived norms for that group. This approach has produced reductions in drinking among first-year students, Greeks, and athletes who received the intervention and was sustained enough to create campus-wide reductions in drinking over a number of years (Far & Miller, 2003). For example, over a nine-year period, students who drink 5 or more drinks on an occasion decreased from 59% to 30%, and abstainers increased from 12% to 20%.

• Peeler et al (2000) designed an intervention as part of a course in which the experimental group received a class module on drinking norms. At the end of the term, the male students in the experimental group reported significant changes in their perceptions of campus drinking and also reported consuming less alcohol per occasion than students in the control group.

• Steffian (1999) assigned college men to either a normative education group (experimental group) or a traditional alcohol education program (control group). The experimental group participated in a group consensus exercise in which the group made predictions about campus

drinking norms and then were presented with actual data, evidence of their own misperceptions, and a discussion of social norms theory. The control group watched a film on the physiological effects of alcohol. The author reported that "Participants in the normative education groups demonstrated more accurate perceptions of campus drinking norms and a significant reduction in the consequences of alcohol use while those in the control group did not. Changes in normative perception were among the strongest contributors to a function discriminating between those who decreased their drinking and those who did not."

• Bonday & Bruce (2003) adapted the small group norms challenging model to develop a normative feedback intervention for fraternities. They reported a decrease in negative consequences of fraternity member drinking after the intervention, although actual drinking rates did not change.

• Hillenbrand-Gunn and her colleagues (2004) developed a three-session intervention on acquaintance rape for high school boys that incorporated local social norms. The workshop resulted in more accurate perceptions and decreases in rape supportive attitudes that were maintained at a one-month follow-up.

Another way of delivering social norms messages to groups is through the use of interactive peer theater. Scripts for such performances are available from BACCHUS (2002) or can be developed locally. For example:

• In one study social norms data were integrated into interactive scenarios presented to students in a freshman seminar class (Cimini, Page & Trujillo, 2002). Students in the control condition were enrolled in the same class but received an academic lecture on substance abuse instead. Students in the theater intervention reported a significant decrease in frequency of use, Driving While Intoxicated, and regretted behavior, and an increase in the incidence of protective behaviors in comparison with the control group. The intervention group also reported a reduction in high-risk drinking rates while these rates increased in the control group.

Other selective interventions have utilized focused media campaigns directed at a particular group of students in combination with other strategies:

• The University of Virginia designed a targeted social norms marketing campaign for first-year students by placing posters in bathroom stalls in first-year residence halls. In its first year (1999-2000) the campaign was successful in reducing the drinking of women and non-fraternity men but not fraternity men (Ohahowski & Miller, 2000). In the next two years of the campaign, which also incorporated environmental management strategies, these improvements continued and the drinking of fraternity men also improved (Bauerle, Burwell & Turner, 2002). Thus, over a period of three years, the number of drinks per week for first-years went down from 3 drinks a week to 1, the median number of drinks per week for fraternity first-year men went down from 15 to 7, and the percentage of abstainers went up from 35% to 49%. In a subsequent presentation of this data, Bauerle (2003) reported that the campaign was expanded to the entire campus and that negative consequences for first-year students continued to trend downwards. These results serve as an important reminder that social norms campaigns may not affect all groups equally (especially at first) and that sustained and combined efforts are required over a period of years to normalize improvements and extend them to all students.

• In an intervention to reduce the incidence of sexual assault for deaf and hard-of-hearing students, a campus-wide social norms marketing campaign to prevent sexual assault that had been previously offered to all students (including deaf and hard-of-hearing) was re-designed to tailor it to the culture and communication styles of deaf and hard-of-hearing students (White, Williams, & Cho, 2003). While the all-campus campaign did not have an effect on deaf and hard-of-hearing students, the tailored campaign was successful in changing attitudes and perceptions, and resulted in fewer sexual assaults.

• At the University of Arizona (Johannessen, 2004) a targeted social norms campaign was developed for sorority members focusing on the ethic of caring among women and providing feedback about actual drinking norms and attitudes. As a result of the campaign, significant decreases in high-risk drinking were reported on a number of measures while sorority drinking remained the same on a control campus.

• Mattern and Neighbors (2004) randomly assigned students in a residence hall to an experimental condition in which participants were given normative feedback through a variety of channels, and a control condition. They found that corrected perceptions were associated with decreases in the quantity and frequency of drinking among students in the experimental group. In addition, a smaller group of students whose misperceptions increased during the campaign reported higher use, providing strong support for the assumptions of the social norms approach.

• In a project sponsored by the Kansas Health Foundation (Berkley-Patton et al, 2003), first-year students received a social norms intervention that resulted in significantly decreased drinking rates for first year students when rates of use for the summer before college were compared with spring term drinking.

These examples provide strong support for the effectiveness of selective social norms interventions directed at particular groups of at-risk individuals when used alone or in combination with other strategies. Targeted social norms interventions such as these may be more effective when the normative data are tailored to the group in question and when they are presented in more extended, interactive formats.

7.5.3 Indicated Prevention – Individualized Social Norms Interventions

Normative data about drinking can be presented to high-risk drinkers and abusers as part of individual counseling interventions. These interventions are theoretically sound because abusers tend to adhere strongly to misperceptions that serve to rationalize their abuse. Sharing normative data in a motivational interviewing format is a non-judgmental way to create cognitive dissonance in heavy drinkers and catalyze change.

The most well-known and scientifically supported individualized intervention that includes a norms correction component has been developed by Alan Marlatt and his colleagues at the University of Washington (Dimeff, et. al. 1999). The Alcohol Skills Training Program (ASTP) uses an eight-session motivational interviewing approach based on stages of change theory to provide heavy drinkers with non-judgmental feedback about their drinking. Data collected prior

to the interview are used to provide comparisons between the individual's drinking and actual rates of peers' drinking on campus. This information presents heavy drinkers with the fact that their drinking is much more extreme than that of peers on a variety of measures. ASTP has been condensed into both a one-hour intervention (BASICS) and a correspondence course in which subjects use a manual. All three interventions have been successful in reducing drinking at follow-ups as long as 1-2 years (Dimeff, et. al. 1999; Larimer & Cronce, 2002), including with high-risk drinkers (Murphy et al 2001).

Agostinelli, Brown & Miller (1995) were able to produce similar reductions in drinking by mailing participants personalized graphic feedback following their completion of a mailed survey.

Similar results were found in a larger population study, in which a normative feedback pamphlet was mailed to over 6,000 households. In a follow-up general population survey a month later, respondents from households receiving the normative feedback reported significantly lower alcohol use than controls (Cunningham et al. 2001).

Mailed feedback was also successful in correcting perceptions and reducing drinking in a study of high-risk college drinkers (Collins et al, 2002). These findings have been replicated in other samples, including one conducted in a workplace where reductions in consumption were documented for heavy drinkers following normative feedback without any increase in drinking on the part of non-drinkers (Walters & Woodall, 2003). Neighbors, Larimer & Lewis (2004) found similar results using computerized normative feedback with alcohol consumption remaining lower at three and six month follow-up assessments.

"Check-Up to Go" or CHUG is another widely used tool for providing personalized individual feedback about drinking. In it's original paper-and-pencil version, it has produced drinking reductions in three controlled clinical trails (Walters, 2000).

These results are extremely promising because they are efficient and cost-effective, produce measurable results, and can be combined with other social norms interventions. For example,

both Western Washington University (Fabiano, 2003) and the University of Washington (Larimer, et al, 2001) have successfully combined universal interventions with indicated interventions providing specific information about campus drinking norms to individual high-risk drinkers.

In addition to individual personalized feedback, high-risk drinkers and smokers also may be influenced by campus-wide media campaigns. For example, Perkins and Craig (2002) reported four-fold reductions in the typical increase in high-risk drinking among first year students and a 21% reduction in weekly heavy drinking among students in general at a small private college. Pryor (2001) reported a decrease from 20% to 13% from 1999-2000 in the number of students drinking ten or more drinks at a sitting. Similarly, a social norms marketing campaign directed at smokers with the theme "96% of smokers want to quit before graduating" resulted in a 29% decrease in smoking rates in one year (Hancock, et al, 2002).

7.5.4 <u>Interventions with multiple levels of prevention</u>

The social norms approach can be used to provide a guiding framework for interventions that are universal, targeted, and indicated to create synergy between these levels of prevention. For example, the University of Arizona combined a universal social norms marketing intervention and other environmental management interventions with a moderation skills program for high-risk drinkers and a targeted campaign directed at sorority members (Glider et al, 2001; Johannessen, 2004; Johannessen & Glider, 2003; Johannessen et al, 1999). Efforts were made to educate stakeholders who were likely to be "carriers of the misperception" about the goals and purposes of the intervention by providing specialized training and developing literature specifically designed for faculty and staff.

In a well-designed intervention, Larimer and colleagues (2001) combined selective and indicated prevention by providing normative feedback about drinking to individual fraternity members and their whole houses. Participants were assessed during their pledge year and one year later. The intervention resulted in significant reductions in alcohol use and peak BAC when compared with fraternity members in the control condition.

These examples suggest that it is possible to combine social norms interventions at all levels of prevention to create a comprehensive change environment with mutually reinforcing, synergistic messages delivered through a variety of channels to a variety of audiences. Such programs are comprehensive, relevant, intensive, and promote positive messages, characteristics that are components of effective prevention programs (Berkowitz, 1997).

7.6 Comprehensive interventions in practice

A number of community-wide and school-based comprehensive interventions have incorporated norms correction into classroom or workshop activities that fall within one of the levels of prevention specified above.

For example, a comprehensive middle-school intervention with a norms correction component demonstrated high-risk drinking rates among the experimental group over 50% lower than the control group in follow-up assessments. Two years after the intervention, corrected perceptions remained correlated with reductions in high-risk drinking (Botvin et al, 2001). In a similar example for smoking, norms correction strategies were incorporated into a multi-component intervention to reduce smoking among high-school students that resulted in a rate of 14% of students smoking weekly in comparison with 24% in the control group (Perry et al, 1992).

Hingson & Howland (2002) reviewed comprehensive community interventions to address alcohol, cigarettes, other drugs, and cardiovascular health and suggested that norms correction strategies may be particularly appropriate for adolescents and young adults. And in separate analyses of successful alcohol prevention programs in middle and high schools, both Hanson (1993) and Clemens and Thombs (2004) concluded that normative feedback was the critical ingredient accounting for the success of these programs.

Finally, Dunnagan and colleagues (2003) proposed a theoretical model for reducing underage drinking that combined environmental management, decision-balance, and norms correction to demonstrate the efficacy of using multiple models and evaluation techniques synergistically to formulate public policy.

These studies suggest that social norms activities can effectively be included in comprehensive interventions that are multi-faceted and incorporate a variety of compatible strategies.

7.7 Use for other health and social justice issues

Many of the normative influences that affect alcohol and tobacco use are also operative for a wide variety of other health and social justice issues, including sexual assault and violence, disordered eating and body image disturbance, academic climate, and prejudicial behaviors. An article by Berkowitz (2003b) suggested that social norms efforts be used to address these problems, reviewed research documenting misperceptions for different health and social justice issues, and provided examples of innovative programs. These interventions include a social norms interventions designed to prevent sexual assault (Bruce, 2002' Hillenbrand-Gunn et al, 2004; White, Williams, & Cho, 2003), and a homophobia prevention workshop that incorporates a small group norms challenging activity (Smolinsky, 2002). Heterosexual individuals were found to overestimate the homophobia of their peers in two studies (Bowen & Bourgeois, 2001; Dubuque et al 2002). In two other studies, the primary factor influencing men's willingness to intervene to prevent sexual assault was men's perception of other men's willingness to intervene (Fabiano et al, 2003; Stein & Barnett, 2004). These findings are consistent with other research suggesting that perceived social norms can influence whether or not individuals' express prejudicial beliefs to others (Crandall et al, 2002; Berkowitz 2003b) suggested that these misperceptions might discourage individuals who are uncomfortable with prejudicial remarks from speaking out against these comments.

In preliminary studies, predictions based on social norms theory have been confirmed for beliefs about masculinity and gender appropriate behavior, body ideal, how often people pray, the prevalence of bullying behavior, and honesty in paying taxes. For example, Gottfried (2002) found that men misperceived other men's beliefs about how men should behave, with men overestimating the extent to which other men hold stereotypical beliefs about masculinity. Greater disparities between men's perceptions of themselves and of other men were correlated with lower self-esteem. The results of this study parallel finding of research conducted with young boys and girls, who both expressed interest in playing with stereotypically "boy" and

"girl" toys but perceived other members of their gender to be only interested in same-gender appropriate toys (Prentice & Miller, 1996). And, in a study of misperception of bullying behavior in an elementary school setting, Bigsby (2002) found that both students and their parents overestimated the amount of bullying behavior that occurred.

In a study of body image women significantly overestimated the degree of thinness that male and female peers considered as ideal. These overestimations were positively correlated with measures of body dissatisfaction, disturbed eating, and concern with appearance (Kusch, 2002). Hancock (2003) documented misperceptions of prayer. It was reported that individuals who pray underestimated the prevalence of praying among their peers, and suggested that this misperception may cause individuals to reduce or hide prayer behavior in academic environments. Finally, Wenzel (2001) documented taxpayer misperceptions of willingness to be honest on income tax forms (i.e., most people thought that others were less honest than themselves) and found that correcting these misperceptions increased honesty in the reporting of some deductions.

With respect to academic success, a pilot project at Ball State University documented misperceptions indicating that students perceived their peers to be less academically motivated than themselves on a variety of variables. The "Academic Success Norming Campaign" corrected these misperceptions with the goal of encouraging behaviors that are associated with academic success and retention (Abhold, Hall & Serini, 1999).

Finally, Linkenbach, Perkins, and DeJong (2003) documented misperceptions among parents regarding parenting attitudes and behaviors such as how often parents talk with children about alcohol use and family rules, and discussed how correction of these misperceptions can be utilized to strengthen effective parenting.

Although these projects are preliminary and have not yet produced strong outcome data, they suggest the applicability of the social norms approach to a broad range of behaviors related to health, social justice, and fostering community.

7.8 Limitations of the approach

Berkowitz (2003c), Haines (1996), Johannesesen (1999), and Linkenbach (2003) provide a detailed overview of the phases of implementing a social norms media campaign, which Fabiano (1999) has condensed into six stages:

• assessment (collection of data)
• selection of the normative message
• testing the message with the target group
• selecting the normative delivery strategy
• dosage of the message
• evaluation of the effectiveness of the message.

Mistakes can occur at any of these stages. For example, participants are likely to question initially the validity of survey data because of misperceptions they hold, but will rethink their assumptions if the data are reliable and presented in an open manner. In contrast, unreliable or confusing survey data may be rejected and in the end undermine the campaign and reinforce misperceptions. In addition, media that are confusing or unappealing, presented by unreliable sources, or not presented in sufficient doses will not have an impact. Key stakeholders can also undermine campaigns through negative comments and criticisms or by sharing their own misperceptions. The following examples illustrate some of these reasons for campaign failure.

Werch et al (2000) outlined an unsuccessful campaign in which social norms messages were sent through the mail to a small sample of freshmen. Three "greeting cards" with normative data were sent in the fall term and a follow-up phone call was conducted in the spring term. This campaign may have failed because the campaign was only conducted over a one-month period, which may not have been long enough, the messages were not focus grouped with students in advance and they may not have been persuasive, and the target subjects were exposed to campus-wide misperceptions that may have undermined the campaign's messages.

Clapp, Russell and DeJong (2001) reported on a failed social norms media campaign in which students did not understand the message, the message and image were incongruent, and the image overpowered the message. In this campaign the image (a student throwing up) was inconsistent with the normative data provided, and students were more likely to remember the image than the data.

Granfield (2002) provided a case study of a well-designed social norms media campaign that did not achieve expected outcomes because the message source was not believable to students. The campaign took place on a campus with a strong fraternity presence at a time when fraternities felt that they were under attack by the administration. Due to this feeling students rejected the social norms messages because the campaign was felt to be part of an administration-led effort to undermine fraternities.

Unsuccessful interventions and philosophical/theoretical disagreements have led some to question the overall validity and effectiveness of social norms. Berkowitz (2002) has provided an extensive response to each of these concerns, suggesting that some may be based on misunderstandings and overgeneralizations about the implications of failed interventions, while others reflect important theoretical and methodological issues that need to be addressed as part of the evolution of the model. In the same article, Rice (2002) reviewed common questions and concerns based on methodological issues.

These findings suggest that when social norms campaigns are unsuccessful it is important to assess what went wrong and why, rather than to assume that the approach itself is flawed.

Having said this there are a number of challenges still facing the prevention field as we continue to develop new and improved social norms interventions. These include the following:

• how to meaningfully integrate universal, selective, and indicated social norms interventions in a synergistic, mutually reinforcing manner;

• how to effectively combine social norms interventions at all three levels of prevention with other strategies such as policy enforcement and other environmental strategies;

• to determine whether tailored social norms interventions based on gender, ethnicity and other group identities are appropriate and effective;

• to evaluate the relative salience of different normative targets for different populations, such as attitudinal and behavioral norms;

• to utilize our knowledge about successful social norms interventions to address other problems such as sexual assault, social justice issues, eating behaviors, academic climate, prejudicial behavior, and issues of spirituality, and adapt the model accordingly;

• to develop standardized evaluation criteria to ensure that social norms interventions are evaluated appropriately and thoroughly;

• to learn from unsuccessful interventions to develop an inventory of common mistakes, problems, and implementation failures; and

• to develop a set of conditions and criteria for successful implementation.

7.8.1 <u>Issues pertaining to the evaluation of approach</u>

Prevention approaches that are evidence-based need to be carefully evaluated to determine their effectiveness. In the case of social norms interventions, it is hypothesized that correction of misperceptions translate into behavior change. Kilmer and Cronce (2003) discussed issues in the evaluation of social norms campaigns and noted the importance of designing surveys that capture anticipated changes, the need to evaluate message impact in addition to message exposure, and the value of assessing differential campaign impact on population sub-groups in addition to global change.

Perkins (2004) has also outlined evaluation challenges including the problem of overlooking campaign successes through insufficient data analysis.

Evaluations and the conclusions based on them can be compromised when the premises of the evaluation are not theoretically sound. For example, assumptions can be made about the underlying theory of social norms that are incorrect, inappropriate measures may be used to evaluate change, or evaluators may neglect to assess the fidelity of the intervention to the model. In each of these cases, an evaluator may conclude that a particular intervention or the model itself is not effective when in fact the evaluation itself has been compromised by these factors. A number of recent evaluations of social norms campaigns share one or more of these problems.

In once recent study, for example, Campo and her colleagues (2003) found that drinking behavior was related to perceptions of friends drinking but not to campus norms. They concluded that because campus norms were not salient to the students in their sample that social norms theory was based on inaccurate premises. Yet their finding of saliency for perceptions of friends' norms in fact supports the theory and serves as a reminder that different norms may be salient for different groups or on different campuses. In addition, their sample was primarily comprised of students living off-campus, who may have differed from on-campus students in terms of the saliency of campus norms.

In another study, Licciardone (2004) analyzed data from 57 campuses and constructed a measure to assess the degree of misperception of alcohol use on each campus. Using this measure he found that campuses with more accurate perceptions had more drinking than campuses with less accurate perceptions, leading him to conclude that the results contradicted social norms theory. However this conclusion is not accurate for a number of reasons. First, the misperception measure used was flawed because it was derived by creating averages of drinking behavior and misperception for each campus. This would not create a reliable measure because the degree of misperception can vary among students and for particular campus sub-groups which will result misleading averages. Second, the measure assumed that it is possible to eliminate misperceptions altogether, something that Borsari and Carey (2001) have suggested is not theoretically possible. In fact, if a social norms campaign was effective the misperceptions might still exist. Third, the

study evaluated data from only one particular point in time without assessing if social norms interventions were utilized. For these reasons it is not appropriate to assume that "the misperceptions ration may be taken as a surrogate measure of the potential effectiveness of overall social norms programming on each campus".

Clapp and his colleagues (2003) conducted a social norms marketing campaign in a residence hall while another residence hall served as a control group. At the end of the six week intervention, misperceptions were reduced but there were no significant effects or counterintuitive effects on drinking, leading the authors to conclude that the campaign had "failed". Yet an analysis of data provided in the article shows that while drinking increased in both groups during the course of the campaign, the increase was much less in the experimental group, which also reported drinking less per occasion. Thus, it may in fact be that the campaign was having a positive effect but was not conducted for a long enough period of time to show significant results. In addition, it is not clear if the normative feedback provided in this study was strong enough to counteract participant exposure to misperceptions elsewhere on campus that the campaign did not try to correct. For example, Mattern and Neighbors (2004) successfully reduced drinking rates using a similar research design but with stronger and more frequent normative feedback.

Finally, Wechsler and his colleagues (2003) conducted a much-publicized national study which he described as evaluating the effectiveness of social norms campaigns. He concluded that it did "not provide evidence for the effectiveness of social norms campaigns." The study has been widely criticized for methodological problems that include poor sample sizes, no assessment of the quality of the campaigns conducted, and a weak definition of the experimental group (see for example, Berkowitz, 2003d, DeJong, 2003b, Haines, 2003, and Perkins and Linkenbach, 2003).

In summary, the analysis reviewed the point of importance to ensure that evaluations are based on valid theoretical premises and determining whether measures of effectiveness and sample selection are appropriate.

7.9 Synopsis

The effectiveness of prevention approaches addressing misperceived social norms have been validated in numerous research studies and in campus and school interventions since they were first proposed by H. Wesley Perkins and Berkowitz in 1986. Programs designed to reduce alcohol and tobacco use have been implemented successfully at all levels of prevention using a variety of media and presentation techniques.

The social norms approach provides an excellent example of how theory- and research driven interventions can be designed, implemented and evaluated to successfully address health problems. The model incorporates recent understandings about the important role of the environment in prevention, the nature and impact of peer influence, the need for interventions that are tailored to their audience, and the design of comprehensive environments that can foster change.

8. Online Social Norms Intervention: A Pure European Perspective

It had been since long recommended that a social norms campaign (as a prevention measure) may consist of surveying a college student population to identify the actual and perceived rates of alcohol use, and then presenting this information back to the student population [Perkins & Berkowitz, 1986; Berkowitz & Perkins, 1987a]. Traditional social norms campaigns have done this by providing social norms feedback to student populations through mass media campaigns and a variety of peer education activities. This approach has been found to be an effective method of reducing alcohol and drug harm at several college campuses [Moreira & Foxcroft 2008, Turner et al. 2008], and has also been used successfully to address other risky behaviours [McAlaney et al. 2011]. **More recently, online technology has been used to offer individuals personalised social norms feedback.** Online feedback operates on the same principles as mass media social norms campaigns, except that the discrepancy between personal consumption, perceived peer consumption and actual reported peer consumption is made even more explicit to the individual. Preliminary research suggests that instantaneous, personalised, computer

delivered feedback can be highly effective [Neighbors et al. 2004]. There is, however, a relative paucity of empirical studies which have explored this technique.

Initial studies assessing rates of drug use and associated social norms in European students indicate that a discrepancy between perceived and actual social norms on tobacco and alcohol use also exists in European young adult and student populations [McAlaney & McMahon 2007, Bewick et al. 2008, Page et al. 2008, Lintonen & Konu 2004]. This raises the possibility of using the social norms approach to address risky health behaviours in Europe in the same way that it has been used in the USA. A relatively small number of social norms campaigns have been implemented in Europe and Australia [McAlaney et al. 2011]. Limitations in the existing evidence base mean that there is however a need for further studies investigating the feasibility of using this approach outside of the USA. In particular, there are several cultural and legislative differences between the USA and European countries that could potentially moderate both the role of misperceptions in alcohol and drug use behaviour as well as the outcome of a social norms campaign. In addition, there are several gaps in the literature which need to be addressed. Firstly, there is a need to more fully explore the potential of online personalised feedback social norms campaigns in university and college settings. Secondly, there is a lack of research on the social norms approach in the prevention of tobacco, illicit, and polydrug use in Europe which was identified as an area of action in the EU Drug Action Plan 2009 – 2012. Finally, there is a lack of multi-language social norms interventions which can be applied simultaneously across Europe to students in different countries.

In this regard SNIPE is a European co-operation project funded by the European Commission, Directorate General Justice, Freedom and Security. It is a multi-site cluster controlled trial of a webbased social norms intervention aimed at reducing licit and preventing illicit and polydrug use in university and college students in seven participating countries [Pischke et al. 2012]. SNIPE is the first cross-national European study investigating the feasibility of such an intervention. It compared the effects of this e-health intervention on related norms and consumption of licit (alcohol, especially binge drinking, tobacco and sedatives) and illicit drugs (cannabis, cocaine, synthetic drugs, not prescribed medication, inhalants) by study participants with those of the control group over the course of 5 months.

The three major innovations in this study are the application of the social norms approach to the realm of illicit and polydrug use; the comparison of rates of drug use and social norms across the participating countries and the study of feasibility of the same social norms intervention in multiple countries at the same time.

As per the first results of the SNIPE study, researchers were able to demonstrate that it is feasible for a designed social norms intervention to show effects in the form of reduction of licit and the prevention of illicit drug use at institutions of higher education in the European context [Pischke et al. 2012]. Hence it was recommended that a subsequent study in individual European countries and including a longer follow-up should be conceived.

References

Abhold, J, Hall, L. & Serini, SA. (1999). Harnessing the Power of Success in Higher Education: Towards a New Model of Academic Success, Presented at the Second International, Interdisciplinary Public Relations Research Conference, University of Maryland, June 19-20.

Abraham L. Connected Europe: How Smartphones and Tablets are Shifting Media Consumption. Reston, VA: ComSore, 2012.

Agostinelli, G, Brown, JM & Miller, WR (1995). Effects of Normative Feedback on Consumption Among Heavy Drinking College Students. Journal of Drug Education, 25(1): 31-40.

Akmatov MK, Mikolajczyk RT, Meier S, Krämer A: Alcohol consumption among university students in North Rhine-Westphalia, Germany-Results from a Multicenter cross-sectional study. J Am Coll Health 2011, 59(7):620–626.

Alcohol Concern. Making an impression: Recognition of alcohol brands by primary school children. London: Alcohol Concern, 2012.

Alsaker, F.D. and Flammer, A. (eds.) (1999). *The adolescent experience: European and American adolescents in the 1990's*. Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders* (4th edition). Washington, DC.

Anderson, P. (2007). The impact of Alcohol Advertising: ELSA project report on the evidence to strengthen regulation to protect young people. Utrecht: National Foundation for Alcohol Prevention.

Arnett JJ: Emerging adulthood. A theory of development from the late teens through the twenties. *Am Psychol* 2000, 55: 469-480.

ATLAS. World Health Organisation (2010). First global report on substance use disorders launched - Resources for the prevention and treatment of substance use disorders.

Bacchus (2002). Customized Health Education Materials, BACCHUS Midwest, Minneapolis, MN (available from dhellstrom@qwest.net).

Baer, JS (1994). Effects of College Residence on Perceived Norms for Alcohol Consumption: An Examination of the First Year of College. Psychology of Addictive Behaviors, 8:43-50.

Baer, JS, Stacy, A & Larimer, M (1991). Biases in the Perception of Drinking Norms Among College Students. Journal of Studies on Alcohol, 52(6):580-586.

Barnett, LA, Far, JM, Maus, AL & Miller, JA (1996). Changing Perceptions of Peer Norms as a Drinking Reduction Program for College Students. Journal of Alcohol and Drug Education. 41(2): 39-61.

Bauer, U. (2005): Das Präventionsdilemma. Potenziale schulischer Kompetenzförderung im Spiegel sozialer Polarisierung. Wiesbaden: VS.,Bösing, S. & Würzl, H. (2011): SKOLL-Selbstkontrolltraining. Ein präventiver Ansatz für einen verantwortungsvollen Umgang mit Suchtstoffen und anderen Suchtphänomenen. In: proJugend. 4/2010, pp. 18-21. URL:,http://www.skoll.de/fileadmin/user_upload/Sabines_Downloads/proJugend_4-2011_S_18-21__2_.pdf, 18.01.2012

Bauerle, J (2003). The University of Virginia's Social Norms Marketing Campaign. The Report on Social Norms: Working Paper #11. P. 3, Little Falls, NJ: PaperClip Communications.

Bauerle, J, Burwell, C., Turner, JC (2002). Social Norms Marketing at the University of Virginia. Presented at the Annual Meeting of the American College Health Association, May 23, Washington, D.C.

Beck, KH & Treiman, KA (1996). The Relationship of Social Context of Drinking, Perceived Social Norms, and Parental Influence to Various Drinking Patterns of Adolescents. Addictive Behaviors, 21(5):633-644.

Berkley-Patton, JY, Prosser, EC, McCluskey-Fawcett, KA & C Towns. A Social Norms Approach to Reducing Alcohol Consumption Among College Freshmen. NASPA Journal, 40(4):24-37.

Berkowitz, AD & Perkins, HW (1986A). Problem Drinking Among College Students: A Review of Recent Research. Journal of American College Health, 35:21-28.

Berkowitz, AD & Perkins, HW (1987a). Current Issues in Effective Alcohol Education Programming. In Joan Sherwood (Ed): Alcohol Policies and Practices on College and University Campuses, p 69-85, Columbus, OH: National Association of Student Personnel Administrators Monograph Series.

Berkowitz, AD (1997). From Reactive to Proactive Prevention: Promoting an Ecology of Health on Campus. Chapter 6 in P.C. Rivers and E. Shore (Eds.): A Handbook on Substance Abuse for College and University Personnel, Westport, CT: Greenwood Press.

Berkowitz, AD (1998). "The Proactive Prevention Model: Helping Students Translate Healthy Beliefs into Healthy Actions." About Campus, September/October 1998, p. 26-27.

Berkowitz, AD (2002). Responding to the Critics: Answers to Common Questions and Concerns About the Social Norms Approach. The Report on Social Norms: Working Paper #7. Little Falls, NJ: PaperClip Communications.

Berkowitz, AD (2003b). Applications of Social Norms Theory to Other Health and Social Justice Issues. Chapter 16 in HW Perkins (Ed). The Social Norms Approach to Preventing School and College Age Substance Abuse: A Handbook for Educators, Counselors, Clinicians, San Francisco, Jossey-Bass.

Berkowitz, AD (2003c). Editor, The Social Norms Resource Book, Little Falls, NJ: PaperClip Communications.

Berkowitz, AD (2003d). Recent Research: A Review of "Perception and Reality" The Report on Social Norms, 3(1).

Berkowitz, AD (2004). An Overview of the Social Norms Approach. Chapter 13 in L Lederman, L Stewart, F Goodhart and L Laitman: Changing the Culture of College Drinking: A Socially Situated Prevention Campaign, Hampton Press.

Bewick B.M, West R, Gill J, O'May F, Mulhern B, Barkham M *et al*.: Providing web-based feedback and social norms information to reduce student alcohol intake: a multisite investigation. *J Med Internet Res* 2010, 12: e59.

Bewick BM, Trusler K, Mulhern B, Barkman M, Hill AJ: The feasibility and effectiveness of a web-based personalised feedback and social norms alcohol intervention in UK university students: A randomised controlled trial. Addict Behav 2008, 33:1192–1198.

Bigsby, MJ (2002). Seeing Eye to Eye? Comparing Students' and Parents' Perceptions of Bullying Behavior. School Social Work Journal, 27(1):37-57.

Bonday, M & Bruce, S (2003). Small Group Norms Interventions with Greeks at the University of Virginia. The Report on Social Norms, Volume 3, #3, Little Falls, NJ, Paper-Clip Communications.

Borsari B & Carey, KB (2003). Descriptive and Injunctive Norms in College Drinking: A Meta-analytic Integration. Journal of Studies on Alcohol, 64:331-341.

Borsari B, & Carey, KB (2001). Peer Influences on College Drinking: A Review of the Research. Journal of Substance Abuse, 13:391-424.

Bösing, S. & Kliche, T. (2009): Das Bundesmodellprojekt SKOLL. Ein Selbstkontrolltraining für den verantwortungsvollen Umgang mit Suchtstoffen und anderen Suchtphänomenen. In: Konturen: Fachzeitschrift zu Sucht und sozialen Fragen. Jg. 30(2009), H. 4, pp. 1417

Bösing, S., Bruns, B. & Tönsing, C. (2006): SKOLL-Selbstkontrolltraining. Ein suchtmittelübergreifender Ansatz zur Frühintervention bei Jugendlichen und Erwachsenen. Freiburg.

Botvin, GJ et al. (2001). Preventing Binge Drinking During Early Adolescence: One- and Two-Year Follow-Up of a School-Based Preventive Intervention. Psychology of Addictive Behaviors, 15:360-365.

Bourgeois, MJ & Bowen, A (2001). Self-Organization of Alcohol-Related Attitudes and Beliefs in a Campus Housing Complex: An Initial Investigation. Health Psychology, 20(6):1-4.

Bruce, S (2002). The "A Man" Campaign: Marketing Social Norms to Men to Prevent Sexual Assault. The Report on Social Norms: Working Paper #5, Little Falls, NJ: PaperClip Communications.

Bruijn Ad, Wildenberg Evd, Broeck Avd. Commercial promotion of drinking in Europe: Key findings of independent monitoring of alcohol marketing in five European countries. Utrecht: STAP, 2012.

Bundeszentrale für gesundheitliche Aufklärung [BZgA](2004). Die Drogenaffinität Jugendlicher in der Bundesrepublik Deutschland 2004. Eine Wiederholungsbefragung der Bundeszentrale für gesundheitliche Aufklärung, Köln. Teilband: Alkohol

Bundeszentrale für gesundheitliche Aufklärung [BZgA](2007). Alkoholkonsum der Jugendlichen in Deutschland 2004 bis 2007. Ergebnisse der Repräsentativbefragungen der Bundeszentrale für gesundheitliche Aufklärung, Köln. Kurzbericht Juni 2007.

Bundeszentrale für gesundheitliche Aufklärung [BZgA](2009). Die Drogenaffinität Jugendlicher in der Bundesrepublik Deutschland 2008. Eine Wiederholungsbefragung der Bundeszentrale für gesundheitliche Aufklärung, Köln. Verbreitung des Alkoholkonsums bei Jugendlichen und jungen Erwachsenen.

Bundeszentrale für gesundheitliche Aufklärung (2012). *Die Drogenaffinität Jugendlicher in der Bundesrepublik Deutschland 2011. Der Konsum von Alkohol, Tabak und illegalen Drogen: aktuelle Verbreitung und Trends*. Köln: Bundeszentrale für gesundheitliche Aufklärung.

Bundeszentrale für gesundheitliche Aufklärung (2013). *Der Tabakkonsum Jugendlicher und junger Erwachsener in Deutschland 2012. Ergebnisse einer aktuellen Repräsentativbefragung und Trends*. Köln: Bundeszentrale für gesundheitliche Aufklärung.

Campo, S, Brossard, D, Frazer, MS, Marchell, T, Lewis, D & Talbot, J et al (2003). Are Social Norms Campaigns Really Magic Bullets? Assessing the Effects of Students Misperceptions on Drinking Behavior. Health Communication, 15(4):481-497.

Carter, CA & Kahnweiler, WM (2000). The Efficacy of the Social Norms Approach to Substance Abuse Prevention Applied to Fraternity Men. Journal of American College Health, 49: 66-71.

Christensen, S & Haines, M (2003). Communities Use A Social Norms Approach to Reduce Teen Alcohol and Tobacco Use: Two Case Studies. In "Selected Abstracts from the 2004 National Conference on the Social Norms Model." The Report on Social Norms: Working Paper #14, Little Falls, NJ: PaperClip Communications.

Cimini, MD, Page, JC & Trujillo, D. (2002). Using Peer Theater to Deliver Social Norms Information: The Middle Earth Players Program. The Report on Social Norms: Working Paper #8, 2(1). Little Falls, NJ: PaperClip Communications.

Clapp, JD & McDonnell, AL (2000). The Relationship of Perceptions of Alcohol Promotion and Peer Drinking Norms to Alcohol Problems Reported by College Students. Journal of College Student Development, 41(1):20-26.

Clapp, JD, Lange, JE, Russell,C, Shillington, A & Voas, RB (2003). A Failed Social Marketing Campaign. Journal of Studies on Alcohol, 64:409-414.

Clapp, JD, Russell, C & DeJong, W (2001). Done 4 Did Zip: Evaluating a Failed Social Norms Marketing Campaign. Presented at the Fourth National Conference on the Social Norms Model. Anaheim, CA, July 18-20.

Clemens, H & Thombs, D (2004). Is Normative Feedback the "Active Ingredient" of Effective, Universal School-Based Prevention Programs? The Report on Social Norms, Volume 3(5).

Collaborative's Positive Social Norming Campaign. The Report on Social Norms: Working Paper #7, Little Falls, NJ, PaperClip Communications.

Collegiate Rite of Passage: A Campus-wide Social Marketing Media Campaign to Reduce Binge Drinking. Journal of Drug Education, 31(2), 207-220.

Collins, SE, Carey, KB & Sliwinsky, MJ (2002). Mailed Personal Normative Feedback as a Brief Intervention for At-Risk College Drinkers. Journal of Studies on Alcohol, 63:559-567.

Commission of the European Communities (2006). An EU strategy to support Member States in reducing alcohol related harm. Communication from the Commission to the Council, the European Parliament, the European economic and social committee and the committee of the regions. Brussels, 24.10.2006 COM(2006) 625 final.

Crandall, CS, Eshleman, A & O'Brien, L (2002). Social Norms and the Expression of Prejudice: The Struggle for Internalization. Journal of Personality and Social Psychology, 82(3):359-378.

Cunningham, JA, Wild TC, Bondy, SJ, & Lin, E (2001). Impact of Normative Feedback on Problem Drinkers: A Small-Area Population Study. Journal of Studies on Alcohol, 62(2):228-233.

D'Amico, EJ, et. al. (2001). Progression Into and Out of Binge Drinking Among High School Students. Psychology of Addictive Behaviors, 15:341-349.

DeJong W: The role of mass media campaigns in reducing high-risk drinking among college students. J Stud Alcohol Suppl 2002, 14:182–192.

DeJong, W (2003b). An Interview with William DeJong. The Report on Social Norms, Volume 3,(1).

Destasis 2000-2009. Link zum statistischen Bundesamt: http://www.destatis.de siehe: „Tiefgegliederte Diagnosedaten der Krankenhauspatientinnen und –patienten" der Jahre 2000 bis 2008.

Deutsche Angestellten-Krankenkasse [DAK] (2009). Jugendliche und Alkoholwerbung: Besteht ein Zusammenhang zu Einstellung und Verhalten? Forschungsreport. IFT-Nord, Kiel. [Verfügbar unter] http://www.ift-nord.de/pdf/bericht_alkoholwerbung.pdf [Accessed 10.12.2009]

Deutsches Krebsforschungszentrum (2002) *Gesundheit fördern – Tabakkonsum verringern. Handlungsempfehlungen für eine wirksame Tabakkontrollpolitik in Deutschland.* Rote Reihe Tabakprävention und Tabakkontrolle

Dimeff, L, Baerk J, Kvilahan, D & Marlatt, AG. (1999). Brief Alcohol Screening and Intervention for College Students: A Harm Reduction Approach (BASICS). NY: Guilford Press. A thorough overview of the excellent research conducted at the University of Washington on harm-reduction interventions for abusers and a curriculum for implementing the model.

Dubuque, E, Ciano-Boyce, C & Shelley-Sireci, L (2002). Measuring Misperceptions of Homophobia on Campus. The Report on Social Norms: Working Paper #4, Little Falls, NJ: PaperClip Communications.

Dunnagan, T, Hayes, G, Linkenbach, J & Shatwell, P (2003). Developing Theoretical and Environmental Policy for Underage Drinking. American Journal of Health and Behavior. 27(5):508-523.

Eleanor Winpenny, Sunil Patil, Marc Elliott, Lidia Villalba van Dijk, Saba Hinrichs, Theresa Marteau, Ellen Nolte. Assessment of young people's exposure to alcohol marketing in audiovisual and online media. RAND EUROPE: Health Programme of the European Union, September 2012.

Elkin L, Thomson G, Wilson N. Connecting world youth with tobacco brands: YouTube and the internet policy vacuum on Web 2.0. *Tobacco Control* 2010;19(5):361-66.

EMCDDA (2010). European Monitoring Centre for Drugs and Drug Addiction. The state of the drugs problem in Europe, Annual Report, 2010. http://www.kom.gov.tr/ Tr/Dosyalar/EMCDDA_rapor_2010_en.pdf.

Eurobarometer. Special Eurobarometer 331: EU citizens' attitudes towards alcohol: European Commission, 2010.

Europäische Beobachtungsstelle für Drogen und Drogensucht (2012). Bericht 2012 des nationalen REITOX-Knotenpunkts an die EBDD, Drogensituation Deutschland 2011/2012: Neue Entwicklungen, Trends und Hintergrundinformationen zu Schwerpunktthemen. Lisabon: Europäische Beobachtungsstelle für Drogen und Drogensucht.

European Monitoring Centre for Drugs and Drug Addiction (2013). European Drug Report 2013: Trends and developments. Lisbon: EMCDDA. May 2013.

Evans RI: A social inoculation strategy to deter smoking in adolescents. In Behavioral health: A handbook of health enhancement and disease prevention. Edited by Matarazzo JD, Weiss SM, Herd JA, Miller NE, Weiss SM. New York: Wiley; 1984:765–774.

Executive Agency for Health and Consumers (2013). European Commission's Directorate-General for Health and Consumers. Joint actions, EU support for key public health initiatives 2008-2011. Joint Action Coordinators, Luxembourg 2013.

Fabiano, P (1999). Learning Lessons and asking Questions about College Social Norms Campaigns. Presentation given at Second The National Conference on the Social Norms Model: Science Based Prevention, Big Sky, MT, July 29.

Fabiano, P (2003). Applying the Social Norms Model to Universal and Indicated Alcohol Interventions at Western Washington University. Chapter 5 in HW Perkins (Ed). The Social Norms Approach to Preventing School and College Age Substance Abuse: A Handbook for Educators, Counselors, Clinicians, San Francisco, Jossey-Bass.

Fabiano, P, Perkins, HW, Berkowitz, AB, Linkenbach, J & Stark, C (2004). Engaging Men as Social Justice Allies in Ending Violence Against Women: Evidence for a Social Norms Approach. Journal of American College Health, 52(3):105-112.

Far, J & Miller, J (2003). The Small Group Norms Challenging Model: Social Norms Interventions with Targeted High Risk Groups. Chapter 7 in HW Perkins (Ed). The Social Norms Approach to Preventing School and College Age Substance Abuse: A Handbook for Educators, Counselors, Clinicians, San Francisco, Jossey-Bass.

Festinger L: A theory of social comparison processes. Human Communications 1954, 7:117–140.

Foss, R Deikkman, S, Bartley, C & Goodman, A (2004). Social Norms Program Reduces Measured and Self-Reported Drinkinng at UNC-CH. The Report on Social Norms: Working Paper #14, Little Falls, NJ, PaperClip Communications.

Foss, R, Deikman, S, Goodman, A & Bartley, C (2003). Enhancing a Norms Program to Reduce High- Risk Drinking Among First Year Students. University of North Carolina Chapel Hill. Downloaded from www.hsrc.unc.edu/pressrelease/collegealcohol.htm.

Foxcroft DR, Ireland D, Lister-Sharp DJ, Lowe G, Breen R: Longer-term primary prevention for alcohol misuse in young people: a systematic review. Addiction 2003, 98(4):397–411.

Freshmen: Evaluation of a Social Norms Marketing Intervention. Chapter 8 in HW Perkins (Ed). The Social Norms Approach to Preventing School and College Age Substance Abuse: A Handbook for Educators, Counselors, Clinicians, San Francisco, Jossey-Bass

Glider, P., Midyett, S., Mills-Novoa, B., Johannessen, K and Collins, C (2001). Challenging the Gottfried, MGS (2002). Perceptions of Others' Masculinity Beliefs: Conforming to a False Norm?, Presented at the 110th Conference of the American Psychological Association, August 22-25, Chicago.

Granfield, R (2002). Can You Believe It? Assessing the Credibility of a Social Norms Campaign. The Report on Social Norms: Working Paper #2, Little Falls, NJ: Paper-Clip Communications.

Haines, MP & Barker, GP (2003). The NIU Experiment: A Case Study of the Social Norms Approach. Chapter 2 in HW Perkins (Ed). The Social Norms Approach to Preventing School and College Age Substance Abuse: A Handbook for Educators, Counselors, Clinicians, San Francisco, Jossey-Bass.

Haines, MP & Spear, SF (1996). Changing the Perception of the Norm: A Strategy to Decrease Binge Drinking Among College Students. Journal of American College Health, 45: 134-140.

Haines, MP (1996). A Social Norms Approach to Preventing Binge Drinking at Colleges and Universities, Newton, MA: The Higher Education Center for Alcohol and Other Drug Prevention.

Haines, MP (2003). "Social Norms is Effective: Wechsler Study Flawed." Available from the website of the National Social Norms Resource Center: www.socialnorm.org.

Haines, MP, Barker, GP & Rice, R (2003). Using Social Norms to Reduce Alcohol and Tobacco Use in Two Midwestern High Schools. Chapter 14 in HW Perkins (Ed). The Social Norms Approach to Preventing School and College Age Substance Abuse: A Handbook for Educators, Counselors, Clinicians, San Francisco, Jossey-Bass.

Hancock, L & Henry, N (2003). Perceptions, Norms and Tobacco Use in College Residence Hall Hancock, L (2003). Social Norms and Prayer. The Report on Social Norms, Volume 2(3)

Hancock, L, Abhold, J, Gascoigne, J & Altekruse M. (2002). Applying Social Norms Marketing to Tobacco Cessation and Prevention: Lessons Learned from Three Campaigns. The Report on Social Norms: Working Paper #6, Little Falls, NJ, PaperClip Communications.

Hannoversche Allgemeine Zeitung (2009). Testkäufer gegen Komasäufer: Niedersachsens Weg. Hannoversche Allgemeine Zeitung, 13.12.2009. Retrieved 20.04.2011 from http://www.haz.de/Nachrichten/Panorama/Uebersicht/Testkaeufer_gegen_Komasaeufer_Niedersachsens_Weg

Hannoversche Allgemeine Zeitung (2009b). Alkoholverbot im Metronom ist ein Erfolg. Retrieved 21.04.2011 from http://www.haz.de/Nachrichten/Politik/Niedersachsen/Alkoholverbot_im_Metronom_ist_ein_Erf olg

Hansen W.B, C. Anderson Johnson, Brian R. Flay, John W. Graham, Judith Sobel. Affective and social influences approaches to the prevention of multiple substance abuse among seventh grade students: Results from project SMART. Preventive Medicine Volume 17, Issue 2, March 1988, Pages 135–154.

Hansen, WB (1993). School-Based Alcohol Prevention Programs. Alcohol Research and Health, 17(1): 54-60.

Hastings G, Stead M, Webb J: Fear appeals in social marketing: Strategic and ethical reasons for concern. Psychology and Marketing 2004, 21(11):961–986.

Hawkins, J. David; Catalano, Richard F.; Miller, Janet Y. Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. Psychological Bulletin, Vol 112(1), Jul 1992, 64-105.

Hellstrom, D (2004). State of Minnesota Department of Public Safety Project: The Prevention Collaborative's Positive Social Norming Campaign. The Report on Social Norms: Working Paper #7, Little Falls, NJ, PaperClip Communications.

Helmer S, Mikolajczyk R, Meier S, Krämer A: Drogenkonsum von Studierenden − Ergebnisse des Gesundheitssurveys NRW. Public Health Forum 2010, 18(2):e1–e21.

Hillenbrand-Gunn, TL, Heppner, MJ, Mauch, PA & Park, Hyun-Joo (2004). Acquaintance Rape and Male High School Students: Can a Social Norms Intervention Change Attitudes and Perceived Norms? Paper presented at the Annual Convention of the American Psychological Association (August, 2004), Honolulu, Hawaii.

Hingson R.W, Timothy Heeren, Ronda C. Zakocs, Andrea Kopstein, Henry Wechsler. Magnitude of Alcohol-Related Mortality and Morbidity among U.S. College Students Ages 18-24. J. Stud. Alcohol 63: 136-144, 2002.

Hingson, RW & Howland, J (2002). Comprehensive Community Interventions to Promote Health: Implications for College-Age Drinking Problems. Journal of Studies on Alcohol, Supplement 14:226-239.

Hirschi, T. (1969). *Causes of delinquency.* Berkeley: University of California Press.

Hunt, G. and Barker, J.C., (2001). Socio-cultural anthropology and alcohol and drug research: Towards a indentified theory. *Social Science and Medicine, 53*, 165-188.

Hunter, D (1998). Taking Control: A Student Initiative. The Peer Educator: Social Norming – Trusting the Truth. 21(1), Denver: Bacchus/Gamma.

International Agency for Research on Cancer (2004). *IARC Monographs on the Evaluation of the Carcinogenic Risks to Humans. Tobacco Smoke and Involuntary Smoking.* IARC, Lyon.

International Centre for Alcohol Policies (2002). *Drinking Age Limits*. ICAP Reports 4.
IOM. (2009). *Report on preventing mental, emotional and behavioural disorders among young people: Progress and possibilities.* Institute of Medicine.

Jeffrey, LR, Negro, P, Demond, M & Frisone, JD (2003). The Rowan University Social Norms Project. Chapter 6 in HW Perkins (Ed). The Social Norms Approach to Preventing School and College Age Substance Abuse: A Handbook for Educators, Counselors, Clinicians, San Francisco, Jossey-Bass.

Johannessen, K & Glider, P (2003). The University of Arizona's Campus Health Social Norms Media Campaign. Chapter 4 in HW Perkins (Ed). The Social Norms Approach to Preventing School and College Age Substance Abuse: A Handbook for Educators, Counselors, Clinicians, San Francisco, Jossey-Bass.

Johannessen, K (2004). Reducing High-Risk Drinking in Sorority Women Using a Social Norms Approach. The Report on Social Norms: Working Paper #14, Little Falls, NJ, Paper-Clip Communications.

Johannessen, KJ, Collins, C, Mills-Novoa, BM & Glider, P (1999) A Practical Guide to Alcohol Abuse Prevention: A Campus Case Study in Implementing Social Norms and Environmental Management Approaches. The University of Arizona Health Service, www.health.arizona.edu. An excellent guide to the development of social norms media and for combining social norms marketing campaigns with other individual and environmental interventions. Available from The Higher Education Center for Alcohol and Other Drug Prevention (www.edc.org/hec) or www.socialnorms.CampusHealth.net.

John U, Hanke M (2001) *Tabakrauch-attributable Mortalität in den deutschen Bundesländern.* Das Gesundheitswesen 63: 363‑369.

Kandel, DB (1985). On Processes of Peer Influences in Adolescent Drug Use: A Developmental Perspective. Advances in Alcohol and Substance Use, 4:139-163.

Kilmer JR, Walker DD, Lee CM, Palmer RS, Mallett KA, Fabiano P, Larimer ME: Misperceptions of college student marijuana use: implications for prevention. J Stud Alcohol 2006, 67(2):277–281.

Kilmer, JR & Cronce, JM (2003). Do Your Data Do You Justice? Evaluating Social Norms Interventions. The Report on Social Norms, Volume 2(7).

Knight J.R, Henry Wechsler, Meichun Kuo, Mark Seibring, Elissa R. Weitzman, Marc A. Schuckit. Alcohol Abuse and Dependence among U.S. College Students. J. Stud. Alcohol 63: 263-270, 2002.

Korcuska, JS & Thombs, DL (2003). Gender Role Conflicts and Sex-Specific Drinking Norms: Relationships to Alcohol Use in Undergraduate Women and Men. Journal of College Student Development, 44(2):204-215.

Kraus, L., Müller, S. & Pabst, A. (2008). Alkoholpolitik in Deutschland. *Suchttherapie* 2008; 9: 103-110. Georg Thieme Verlag KG: Stuttgart.

Kusch, J (2002). Test of A Social Norms Approach to Understanding Disordered Eating Practices in College Women, Dissertation Submitted to the Department of Psychology, Washington State University, Pullman, WA.

Kuttler H. (2009): Hart am Limit – HaLT – Ein bundesweites Präventionsprojekt gegen den riskanten Alkoholkonsum von Jugendlichen. URL: http://www.halt-projekt.de/images/stories/pdf/konturen%201-2%202009.pdf

Kypri K, Hallett J, Howat P, McManus A, Maycock B, Bowe S *et al*.: Randomized controlled trial of proactive web-based alcohol screening and brief intervention for university students. *Arch Intern Med* 2009, 169: 1508-1514.

Kypri, K & JD Langley (2003). Perceived Social Norms and their Relation to University Student Drinking. Journal of Studies on Alcohol, 64:829-834.

LaBrie JW, Hummer JF, Lac A, Lee CM: Direct and indirect effects of injunctive norms on marijuana use: The role of reference groups. J Stud Alcohol Drugs 2010, 71(6):904–908.

Larimer, ME & Cronce, JM (2002). Identification, Prevention and Treatment: A Review of Individual- Focused Strategies to Reduce Problematic Alcohol Consumption by College Students. Journal of Studies on Alcohol, Supplement 14:148-163.

Larimer, ME & Neighbors, C (2003). Normative Misperception and the Impact of Descriptive and Injunctive Norms on College Student Gambling. Psychology of Addictive Behaviors, 17(3):225-243.

Larimer, ME, Turner, AP, Anderson, BK, Fader, J, Kilmer, JR, Palmer, RS & Cronce, JM (2001). Evaluating a Brief Alcohol Intervention with Fraternities. Journal of Studies on Alcohol,, 62: 370-380.

Lewis M.A, Neighbors C: Social norms approaches using descriptive drinking norms education: a review of the research on personalized normative feedback. *J Am Coll Health* 2006, 54: 213-218.

Licciardone, JC (2003). Perceptions of Drinking and Related Findings from the Nationwide Campuses Study. Journal of American College Health, 51(6):238-245.

Likatavicius G, Van de Laar M. HIV and AIDS in the European Union, 2011. Euro Surveill. 2012;17(48):pii=20329.

Linkenbach, J & Perkins, HW (2003A). Most of Us Are Tobacco Free: An Eight-Month Social Norms Campaign Reducing Youth Initiation of Smoking in Montana. Chapter 13 in HW Perkins (Ed). The Social Norms Approach to Preventing School and College Age Substance Abuse: A Handbook for Educators, Counselors, Clinicians, San Francisco, Jossey-Bass.

Linkenbach, J (2003). The Montana Model: Development and Overview of a Seven-Step Process for Implementing Macro-Level Social Norms Campaigns. Chapter 11 in HW Perkins (Ed). The Social Norms Approach to Preventing School and College Age Substance Abuse: A Handbook for Educators, Counselors, Clinicians, San Francisco, Jossey-Bass.

Linkenbach, J, Perkins, HW & DeJong, W (2003). Parent's Perceptions of Parenting Norms: Using the Social Norms Approach to Reinforce Effective Parenting. Chapter 15 in HW Perkins (Ed). The Social Norms Approach to Preventing School and College Age Substance Abuse: A Handbook for Educators, Counselors, Clinicians, San Francisco, Jossey-Bass.

Lintonen T, Konu A: The misperceived social norm of drunkenness among early adolescents in Finland. Health Educ Res 2004, 19(1):64–70.

Marks, G, Graham, JW & Hansen, WB (1992). Social Projection and Social Conformity in Adolescent Alcohol Use: A Longitudinal Analysis. Personality and Social Psychology Bulletin, 18(1):96-101.

Mattern, JM & Neighbors, C (2004). Social Norms Campaigns: Examining the Relationship Between Changes in Perceived Norms and Changes in Drinking Levels. Journal of Studies on Alcohol, 64(5):489- 493.

McAlaney J, Bewick B, Hughes C: The international development of the 'Social Norms' approach to drug education and prevention. Drugs: Education Prevention and Policy 2011, 18(2):81–89.

McAlaney J, McMahon J: Normative beliefs misperceptions and heavy episodic drinking in a British student sample. J Stud Alcohol Drugs 2007, 68:385–392.

Meier M.H, Caspi A, Ambler A, Harrington H, Houts R, Keefe RS.: Persistent cannabis users show neuropsychological decline from childhood to midlife. *Proc Natl Acad Sci USA* 2012, 109: E2657-E2664.

Middendorff E, Poskowsky J, Isserstedt W: Formen der Stresskompensation und Leistungssteigerung bei Studierenden. *HIS:Forum Hochschule* 2012, F01.

Montgomery KC, Chester J. Interactive Food and Beverage Marketing: Targeting Adolescents in the Digital Age. *Journal of Adolescent Health* 2009;45(3):S18-S29.

Moreira M.T, Smith LA, Foxcroft D (2010) : Social norms interventions to reduce alcohol misuse in university or college students. *Cochrane Database Syst Rev* 2009, CD006748.

Moreira MT, Foxcroft DR: The effectiveness of brief personalized normative feedback in reducing alcohol-related problems amongst university students: protocol for a randomized controlled trial. BMC Public Health 2008, 8:113.

Murphy, JG et al (2001). Relative Efficacy of a Brief Motivational Intervention for College Student Drinkers. Psychology of Addictive Behaviors, 15(4):373-379.

Neighbors, C, ME Larimer, & ,Lewis, MA (2004). Targeting Misperceptions of Descriptive Drinking Norms: Efficacy of a Computer Delivered Personalized Normative Feedback Intervention. Journal of Consulting and Clinical Psychology, 72(3):434-447.

Newcomb M.D, Ebrahim Maddahian, Rodney Skager, and P. M. Bentler. Substance Abuse and Psychosocial Risk Factors among Teenagers: Associations with Sex, Age, Ethnicity, and Type of School. The American Journal of Drug and Alcohol Abuse, 1987, Vol. 13, No. 4 : Pages 413-433.

NIAAA (2002). How to Reduce High Risk College Drinking: Use Proven Strategies, Fill Research Gaps. Final Report of the Panel on Prevention and Treatment, Task Force of the National Advisory Council on Alcohol Abuse and Alcoholism. Washington, DC, National Institutes of Health.

Odahowski, MO & Miller, CM (2000). Results of the 2000 Health Promotion Survey on the Class of 2003. Office of Health Promotion. Charlottesville: University of Virginia. (Available from: http://www.virginia.edu/studenthealth/hp/norms/showmethedata.html)

O'Malley P.M, Johnston L.D. Epidemiology of Alcohol and Other Drug Use among American College Students. J. Stud. Alcohol, Supplement No. 14: 23- 39, 2002.

Organisation for Economic Co-operation and Development (2013). OECD Health Data 2013: How does Germany compare. Released 27th June 2013. Available under http://www.oecd.org/health/health-systems/oecdhealthdata.htm Accessed 08.12.2013

Page RM, Ihasz F, Hantiu I, Simorek J, Klarova R: Social normative perceptions of alcohol use and episodic heavy drinking among Central and Eastern European adolescents. Subst Use Misuse 2008, 43:361–373.

Page, RM, Scanlan, A & Gilbert, L (1999). Relationship of the Estimation of Binge-Drinking Among College Students and Personal Participation in Binge Drinking: Implications for Health Education and Promotion. Health Education, 30:98-103.

Peeler, CM, Far, J, Miller, J & Brigham, T (2000). An Analysis of the Effects of a Program to Reduce Heavy Drinking Among College Students. Journal of Alcohol and Drug Education, 45: 39-54.

Perkins H.W: Surveying the damage: a review of research on consequences of alcohol misuse in college populations. *J Stud Alcohol Suppl* 2002, 91-100.

Perkins HW & Linkenbach, J (2003). Harvard Study of Social Norms Deserves an "F" Grade for Flawed Research Design. Available from the website of the National Social Norms Resource Center: www.socialnorm.org.

Perkins HW, Craig DW: The Hobart and William Smith College experiment: A synergistic social norms approach using print, electronic media, and curriculum infusion to reduce collegiate problem drinking. In Social norms approach to preventing school and college age substance abuse: A handbook for educators, counselors, and clinicians. Edited by Perkins HW. San Francisco, CA: Jossey-Bass; 2003:35–46.

Perkins HW, Meilman PW, Leichliter JS, Cashin JR, Presley CA: Misperceptions of the norms for the frequency of alcohol and other drug use on college campuses. J Am Coll Health 1999, 47(6):253–258.

Perkins HW: The emergence and evolution of the social norms approach to substance abuse prevention. In The social norms approach to preventing school and college age substance abuse: a handbook for educators, counselors, and clinicians. Edited by Perkins HW. San Francisco: Jossey-Bass; 2003:3–17.

Perkins, HW & Craig, DA (2003a). The Hobart and William Smith Colleges Experiment: A Synergistic Social Norms Approach Using Print, Electronic Media and Curriculum Infusion to Reduce Collegiate Problem Drinking. Chapter 3 in HW Perkins (Ed). The Social Norms Approach to Preventing School and College Age Substance Abuse: A Handbook for Educators, Counselors, Clinicians, San Francisco, Jossey- Bass.

Perkins, HW & Craig, DA (2003b). The Imaginary Lives of Peers: Patterns of Substance Use and Misperceptions of Norms Among Secondary School Students. Chapter 12 in HW Perkins (Ed). The Social Norms Approach to Preventing School and College Age Substance Abuse: A Handbook for Educators, Counselors, Clinicians, San Francisco, Jossey-Bass.

Perkins, HW & Linkenbach, J (2004). Most of Us Wear Seatbelts: The Process and Outcomes of a Three- Year Statewide Adult Seatbelt Campaign. The Report on Social Norms: Working Paper #14, Little Falls, NJ, Paper-Clip Communications.

Perkins, HW & Wechsler, H (1996). Variation in Perceived College Drinking Norms and Its Impact on Alcohol Abuse: A Nationwide Study. Journal of Drug Issues, 26(4):961-974.

Perkins, HW (1985). Religious Traditions, Parents, and Peers as Determinants of Alcohol and Drug Use Among College Students. Review of Religious Research, 27(1):15-31.

Perkins, HW (1987). Parental Religion and Alcohol Use Problems as Intergenerational Predictors of Problem Drinking Among College Youth. Journal for the Scientific Study of Religion, 26(3):340-357.

Perkins, HW (1997) College Student Misperceptions of Alcohol and Other Drug Use Norms Among Peers. In: Designing Alcohol and Other Drug Prevention Programs in Higher Education: Bringing Theory Into Practice, (P. 177-206). Newton, MA: The Higher Education Center for Alcohol and Other Drug Prevention.

Perkins, HW (2002). Social Norms and the Prevention of Alcohol Misuse in Collegiate Contexts. Journal of Studies on Alcohol, Supplement 14:164-172.

Perkins, HW (2003a). The Emergence and Evolution of the Social Norms Approach to Substance Abuse Prevention. Chapter 1 in HW Perkins (Ed). The Social Norms Approach to Preventing School and College Age Substance Abuse: A Handbook for Educators, Counselors, Clinicians, San Francisco, Jossey-Bass.

Perkins, HW (2004). Getting Social Norms Results by Improving Implementation and Assessment. The Report on Social Norms, 3(9)5.

Perkins, HW and Berkowitz, AD (1986). Perceiving the Community Norms of Alcohol Use Among Students: Some Research Implications for Campus Alcohol Education Programming. International Journal of the Addictions, 21:961-976.

Perkins. HW & Craig, DA (2002). A Multi-faceted Social Norms Approach to Reduce High-Risk Drinking: Lessons from Hobart and William Smith Colleges. Newton, MA: The Higher Education Center for Alcohol and Other Drug Prevention. (Also available at www.edc.org/hec).

Perry, CL, Kelder, SH, Murray, DM & Knut-Inge, K (1992). Communitywide Smoking Prevention: Long- Term Outcomes of the Minnesota Heart Health Program and the Class of 1989 Study. American Journal of Public Health. 82(9):1210-1216.

Pischke C.R, Zeeb H, van Hal G, Vriesacker B, McAlaney J, Bewick BM *et al*.: A feasibility trial to examine the social norms approach for the prevention and reduction of licit and illicit drug use in European University and college students. *BMC Public Health* 2012, 12: 882.

Plewnia, U. (2010). Alkohol gehört dazu. Focus Online, 14.02.2010. Retrieved 20.04.2011 from http://www.focus.de/politik/deutschland/gesundheitspolitik/drogenbeauftragte_alkohol_gehoertd azu_aid_479317.html

Prendergast M. Substance Use and Abuse among College Students: A Review of Recent Literature. Journal of American College Health Volume 43, Issue 3, 1994, pages 99-113

Prentice, DA & Miller, DT (1993). Pluralistic Ignorance and Alcohol Use on Campus: Some Consequences of Misperceiving the Social Norm. Journal of Personality and Social Psychology, 64(2)243- 256.

Prentice, DA & Miller, DT (1996) Pluralistic Ignorance and The Perpetuation of Social Norms by Unwitting Actors. Advances in Experimental Social Psychology, 28:161-209.

Pryor, J (2001) Effective Evaluation and Research Tools and Techniques for Your Social Norms Campaign. Presented at the Fourth National Conference on the Social Norms Model. Anaheim, CA, July 18-20.

Reis O, Pape M, Häßler F. (2009): Ergebnisse eines Projektes zur kombinierten Prävention jugendlichen Rauschtrinkens. In Sucht: Zeitschrift für, Wissenschaft und Praxis, 55, 6:347-356.

Relationships to Alcohol Use in Undergraduate Women and Men. Journal of College Student Ribisl K. The potential of the internet as a medium to encourage and discourage youth tobacco use. *Tobacco Control* 2003;12(suppl 1):i48-i59.

Rice, R (2002). Some Notes on Methodological and Other Issues. In A. Berkowitz: Responding to the Critics: Answers to Some Common Questions and Concerns about the Social Norms Approach. The Report on Social Norms: Working Paper # 13 , Little Falls, NJ: PaperClip Communications.

Rice, R (2003). An Overview of the 2003 National Conference on the Social Norms Model. The Report on Social Norms: Working Paper # 7, p.3, Little Falls, NJ: PaperClip Communications.

Robert Koch Institute (2008). Health in Germany. Federal Health Reporting. Robert Koch Institute, Berlin.

Rodrieguez, R, Kulley, J & Barrow. J (2003). A SGNM Intervention for Men to Prevent Sexual Assault. The Report on Social Norms, 3(3):3.

Saffer, H., Dave, Dhaval (2006). Alcohol advertising and alcohol consumption by adolescents. In: Health Economics, John Wiley & Sons, Ltd., vol. 15(6), pages 617-637.

Schroeder, CM & Prentice, DA (1998). Exposing Pluralistic Ignorance to Reduce Alcohol Use Among College Students. Journal of Applied Social Psychology, 28: 2150-2180.

Science Group of the European Alcohol and Health Forum (2009). Does marketing communication impact on the volume and patterns of consumption of alcoholic beverages, especially by young people? - a review of longitudinal studies. Scientific Opinion of the Science Group of the European Alcohol and Health Forum [Available under] http://ec.europa.eu/health/ph_determinants/life_style/alcohol/For um/docs/science_o01_en.pdf [Accessed 10.12.2009]

Seitz, H.; Bühringer, G.; Mann, K. (2008). Grenzwerte für den Konsum alkoholischer Getränke. In: Deutsche Hauptstelle für Suchtfragen (Hrsg.): Jahrbuch Sucht 2008. Neuland Verlagsgesellschaft, Geesthacht.

Sher, K, Bartholow, BD & Nanda, S (2001). Short- and Long-Term Effects of Fraternity and Sorority Membership on Heavy Drinking: A Social Norms Perspective. Psychology of Addictive Behaviors, 15:42- 51.

Smolinsky, T (2002). What Do We Really Think? A Group Exercise to Increase Heterosexual Ally Behavior. The Report on Social Norms: Working Paper #4, Volume 1, Little Falls, NJ: PaperClip Communications.

Statistisches Bundesamt: Leben in Deutschland. Haushalte, Familien und Gesundheit - Ergebnisse des Mikrozensus. http://www.destatis.de/jetspeed/ portal/cms/Sites/destatis/Internet/DE/Presse/pk/2006/Mikrozensus/Pressebroschuere,property=file.pdf

Steffian, G (1999). Correction of Normative Misperceptions: An Alcohol Abuse Prevention Program. Journal of Drug Education, 29(2):115-138.

Stein, JL & JA Barnett (2004). Male College Students' Willingness to Prevent Rape: The Impact of Personal Attitudes, Referent Group Norms, and Peer Educators. Presented at the Seventh Annual National Social Norms Conference, Chicago, IL, July 21-23, 2004.

Stock C, Mikolajczyk R, Bloomfield K, Maxwell AE, Ozcebe H, Petkeviciene J, Naydenova V, Marin-Fernandez B, El-Ansari W, Kramer A: Alcohol consumption and attitudes towards banning alcohol sales on campus among European university students. Public Health 2009, 123(2):122–129.

Thombs, DL (1999). Alcohol and Motor Vehicle Use: Profiles of Drivers and Passengers. American Journal of Health and Behavior, 23:13-24.

Thombs, DL (2000). A Test of the Perceived Norms Model to Explain Drinking Patterns Among University Student Athletes. Journal of American College Health, 49: 75-83.

Thombs, DL, Wolcott, BJ & Farkash, LGE (1997). Social Context, Perceived Norms and Drinking Behavior in Young People. Journal of Substance Abuse, 9:257-267.

Trockel, M, Williams, S & Reis, J (2003). Considerations for More Effective Social Norms Based Alcohol Education on Campus: An Analysis of Different Theoretical Conceptualizations in Predicting Drinking Among Fraternity Men. Journal of Studies on Alcohol, 64:550-59.

Turner J, Perkins HW, Bauerle J: Declining negative consequences related to alcohol misuse among students exposed to a social norms marketing intervention on a college campus. J Am Coll Health 2008, 57(1):85–93.

U.S. Department of Health and Human Services (2004). *The Health Consequences of Smoking: A Report of the Surgeon General*, National Center for Chronic Disease Prevention and Health Promotion, Atlanta.

Vardakou I, Pistos C, Spiliopoulou C: Spice drugs as a new trend: mode of action, identification and legislation. *Toxicol Lett* 2010, 197: 157-162.

Walters, S (2000). *In Praise of Feedback: An Effective Intervention for College Students Who Are Heavy Drinkers*. Journal of American College Health, 48:235-238. "Check-Up to Go" or CHUG is a widely used tool for providing personalized individual feedback about drinking.

Walters, ST & ,Woodall, WG (2003). Mailed Feedback Reduces Consumption Among Moderate Drinkers Who are Employed. Prevention Science, 4(4):287-294.

Wechsler, H, Nelson,T, Lee, JE, Seibring,M, Lewis,C & Keeling, R (2003). Perception and Reality: A National Evaluation of Social Norms Marketing Interventions to Reduce College Students' Heavy Alcohol Use. Journal of Studies on Alcohol, 64:484-494.

Wenzel, M (2001). Misperceptions of Social Norms About Tax Compliance, Working Paper #7 (A Prestudy) and Working Paper #8 (A Field Experiment), Centre for Tax System Integrity, Australian National University.

Werch, CCE, Pappas, DM, Carlson, JM, DiClemente, CC, Chally, PS & Sinder, JA (2000). Results of a Social Norm Intervention to Prevent Binge Drinking Among First-Year Residential College Students. Journal of American College Health, 49: 85-92.

Wetter, David W.; Kenford, Susan L.; Welsch, Samuel K.; Smith, Stevens S.; Fouladi, Rachel T.; Fiore, Michael C.; Baker, Timothy B. Prevalence and Predictors of Transitions in Smoking Behavior Among College Students. Health Psychology, Vol 23(2), Mar 2004, 168-177.

White, J, Williams, LV and Cho, D (2003). A Social Norms Intervention to Reduce Coercive Behaviors among Deaf and Hard-of-Hearing College Students. The Report on Social Norms:Working Paper #9, Volume 2(4). Little Falls, NJ, PaperClip Communications.

Winfree Jr., L. Thomas; Bernat, Frances P. Social learning, self-control, and substance abuse by eighth grade students: A tale of two cities. Journal of Drug Issues, Vol 28(2), 1998, 539-558.

World Health Organisation (2010). International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) Version for 2010. Mental and behavioural disorders due to psychoactive substance use (F10-F19) http://apps.who.int/classifications/icd10/browse/2010/en#/F10-F19 Last accessed: 01.12.2013

World Health Organisation (2013). Management of substance abuse. Facts and Figures. Available under http://www.who.int/substance_abuse/facts/en/   Last accessed: 01.12.2013

Acknowledgements

I sincerely thank Prof. Dr. Ralf Reintjes for supervising me on this ever remaining difficult-to-control issue concerning the upcoming younger generation, as also for his teachings over the past year.

My special thanks goes to Annika von Borczyskowski for giving me the proper direction for this research and for her continuous guidance over the past few months.

I would like to take this opportunity to thank all the Professors and Lecturers of Hamburg University of Applied Sciences who contributed in sense giving me an altogether different insight in to the health care, as opposed to being always in the curative clinical environment of the hospitals.

I am grateful to my parents and sister for their invaluable support throughout the past years, as also during my brief stint here at Hamburg University of Applied Sciences. I dedicate this piece of research eventually to them.