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Irish Physical Education student teachers' behaviour and attitude toward drinking: implications for health education'

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Abstract

The study is focused on student teachers' behaviour and attitude toward drinking, substance use and in particular over consumption of alcohol continues to be a significant issue for young people. Ireland has been ranked third of twenty six countries, for levels of adult alcohol consumption. The drinking patterns in Ireland and the United Kingdom have been compared to those of the Nordic countries, where there is evidence of more irregular heavy drinking episodes and higher levels of acceptance of drunkenness in public in comparison to other European countries. Some countries have responded by implementing a specific curriculum on health education which has alcohol consumption and health behaviours as integral to the curriculum.

Introduction

According to the World Health Organisation, the European Union is the region with the highest alcohol consumption in the world [1]. In Ireland, substance use and in particular over consumption of alcohol continues to be a significant issue for young people [2]. Ireland has been ranked third of twenty six countries, for levels of adult alcohol consumption [3]. The drinking patterns in Ireland and the United Kingdom have been compared to those of the Nordic countries, where there is evidence of more irregular heavy drinking episodes and higher levels of acceptance of drunkenness in public in comparison to other European countries [1]. Students have been identified as particularly heavy consumers of alcohol and Irish students report high levels of alcohol consumption and binge drinking [4]. The legal age for alcohol consumption in Ireland is eighteen and yet in Ireland there is significant concern with regard to the drinking behaviours of school going children. The European study on alcohol and drug consumption of 15-16 year olds conducted in 2011 demonstrated that 40% of adolescents in Ireland had been binge drinking in the previous 30 days [5]. The problem is not particular to Ireland however as results from the same study in Denmark found that 56% of the adolescents surveyed had been involved in heavy episodic drinking in the past 30 days [5]. Adolescents have been identified as a key population on which to focus attention in terms of harmful drinking prevention [6]. Some countries have responded by implementing a specific curriculum on health education which has alcohol consumption and health behaviours as integral to the curriculum. Similar to Finland [7], Ireland has implemented such a subject for health education in secondary schools. In order to effectively address social problems such as substance use through education, Social, Personal and Health Education (S.P.H.E.) was introduced in post primary schools by the Department of Education and Science [8] and yet given current trends [9] it appears to have had little effect in terms of reducing alcohol consumption among adolescents.

Teacher's role

Teachers are often expected to educate students about alcohol and substance use [10]. There has been limited research conducted into teachers' views of alcohol consumption, yet substance use among Irish pupils is on the increase [9]. Given the significant rates of alcohol consumption amongst school going children, teachers often have to deal with the fall out of student substance use in the classroom [11]. Many teachers are uncomfortable with the delivery of substance use education material within their class due to a lack of appropriate training, timetabling constraints, role ambiguity and a lack of available time [11]. Teachers require support to deal with this issue and teacher education programmes have a key role in building teacher capacity in health promotion [12]. Teachers are often viewed as role models and therefore their actions have wider implications for their students learning, particularly as they play an essential role in helping students learn and to apply a moral reasoning and healthy decision making process [13]. Teachers also demonstrate the importance of personal responsibility when they model health related physical fitness, good nutrition and the absence of substance abuse [13]. The physical education teacher often plays a key role in the delivery of health education in schools [14]. Health education has always played a significant part in the PE curriculum in the Nordic countries [15], thus offering a stronger cross curricular engagement but unfortunately the same cannot be said for Ireland.

Student drinking

Destructive use of alcohol is the third largest preventable cause of death globally, causing approximately 2.3 million premature deaths

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per year and an estimated 4% of global disease burden [16,17]. It is a significant public health issue. The WHO has acknowledged reducing alcohol related harm as a significant and vital public health action to improve the quality of life of citizens [18]. Alcohol consumption has long been a tradition and expectation of the college student population [19]. Undergraduates' excessive alcohol consumption (binge drinking) has been well documented [20-22]. Binge drinking, that is, drinking at least 4 pints of beer; a bottle of wine or equivalent in a single session has emerged as a popular trend of alcohol consumption amongst Irish undergraduate students [4]. It is increasing among young people globally [23] and especially amongst student populations and sportspeople [24,25]. The deleterious effect of excessive alcohol consumption on health and well-being has been well documented [26], and is linked to increased risk of cirrhosis, dementia, alcohol dependency and cancers of the breast, colorectal and upper digestive tract [27]. In the college student population drinking heavily in university contributes to lower overall quality of life among students [28].

Effect on academic achievement

Young people's consumption of alcohol can contribute to intellectual development problems. Alcohol exerts a greater toll on the brain development of those aged under 21 than on any other age group [29]. The area of the brain that is affected is the part that is responsible for memory, learning and also decision making and reasoning [29]. As a result, alcohol can have a detrimental effect on academic performance and has been shown to reduce by 7-12% with alcohol use [30]. A significant proportion of students' academic performance is possibly being impaired because of their drinking which significantly reduces concentration levels [25]. Binge drinking has been associated with poorer academic achievement [31] and low grades [32]. Students report difficulties in relation to concentration, study and retention, punctuality and academic attendance, as well as failing to meet assignment deadlines as a result of binge drinking [33]. Indeed, Carpenter [34] identifies the significant rise in foetal alcohol spectrum disorders which is also causing significant learning difficulties amongst children. Not only is the alcohol consumption of young people an issue, alcohol consumption of adults is also having a deleterious effect on young children and their schooling.

Alcohol and its relationship with sport

There is a common perception that participation in sport encourages positive health behaviours [35]. Participation in sport has been recommended as a way of discouraging risk taking behaviours such as substance abuse [36]. Low physical activity is associated with negative health behaviours in teenagers [37]. It is argued that people who are interested in engaging in positive health promoting behaviour would not simultaneously engage in health-damaging behaviours such as alcohol, tobacco, or other drug use [35]. However, alcohol consumption can be an integral part of the social engagement of many sporting events [38]. Research suggests that sports people and fans drink more hazardously than non-sports people [39,40] Theorists of sport psychology have argued that the pressures of competitive sport, such as time commitments and physical and mental demands in terms of training may lead athletes to use alcohol as a coping tool [41]. Others have hypothesized that there is significant pressure from team mates and coaches to drink together as a way of team bonding and cohesion and endorse a "work hard, play hard" ethic [40]. Given the competing perspectives on alcohol and sports participation it warrants further investigation in terms of impact on health and well-being.

This pilot study sought to explore the drinking patterns of pre-service physical education teachers. It also sought to investigate their attitudes towards their alcohol consumption and how this influenced their perception of their future role as health educators and teachers of physical education. The specific research questions were study was seeking to answer were: 1) what are the drinking habits of Physical Education pre-service teachers? 2) Does this impact on their perceptions of their role as a teacher?

Methodology

Data collection

A mixed method approach was employed for the study. An online anonymous questionnaire was designed specifically for this research. The questionnaire was e-mailed to all students enrolled (N=277) in the teacher education in physical education programme at the University of Limerick. This university is the leading provider of physical education teacher training in Ireland. The programme of study is four years in duration and it was decided to sample the four years. The instrument was first piloted with student teachers in order to examine the survey's relevance, to verify how long it took to complete and to test that all instructions and questions were clear and relevant [42]. The pilot was carried out using Bell's [42] framework, which asks participants to comment on the clarity, layout and content of the questionnaire. The responses were collected and analysed and the questionnaire was amended in line with the recommendations made in the pilot.

There were 26 items in the revised questionnaire. Of the 26 questions, 3 were open and 23 were closed questions. Of the 23 closed questions 6 had an additional open ended component which asked participants to elaborate on their response. The questionnaire opened with 4 closed questions on general information such as gender, year of study, age and self-rating of overall health. The next 8 questions related to alcohol consumption, including whether they consumed alcohol, age of first consumption as well as frequency of their alcohol consumption and amount of drinks consumed in one sitting. This section was modelled on the Student Alcohol Questionnaire (SAQ) [43]. Participants were also asked to provide their reasons for consuming alcohol. The third section of the questionnaire was dedicated to sport participation and asked participants whether they participated in sport, what type of sport and at what level. Three questions in this section were dedicated to asking participants about the relationship between alcohol and sport and these included an open ended section for participants to explain their answer. The final section of the questionnaire was a series of statements centred on alcohol and college and participants were asked to rate on a 5 point Likert scale the degree to which they agreed with the statements. Eight such statements were presented and three included a space for participants to explain their chosen answer. For the purposes of this paper the data presented is from sections 1, 2, and 4 of the questionnaire.

A total of 144 students from across all four years of the programme responded yielding a response rate of 52%. Of these participants 62 (43.1%) were male and 84 (56.9%) were female. The cohort can be further stratified according to their age groups; with 66 participants between the age of 18 and 20, 64 participants between 21 and 23, and a further 14 students were 24 years of age or older. The distribution of the sample cohot as per year of study is shown in Table 1.

In addition two focus groups were held with sub-samples of the population being researched. A purposive sample was employed in that fourth year students were invited to participate in the focus groups and twelve responded to the invitation and agreed to participate.

Table 1. Distribution per year of study.

	1st Year	2nd Year	3rd Year	4th Year	Total
Male	15	11	15	21	62
Female	23	11	22	26	82
Total	38	22	37	47	144

Fourth years were chosen as they would be graduating later that year and would soon be practicing teachers. It was decided to stratify the genders in the hope that students in single gender groups would be more forthcoming and thus one female and one male focus group were conducted with six in each group.

Data from both the questionnaires and focus groups triangulated. The focus groups were conducted after the questionnaire results had been analysed. By combining the results of the questionnaires and focus groups a better understanding was gained in relation to the connection between alcohol consumption and participants' participation in sport. The focus groups helped expand and clarify what was found in the questionnaire, providing 'colour' to the statistical results [44]. They also clarified the survey results and raise new explanations that may not have come up in the questionnaire [44].

Data analysis

Quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS-v16). Descriptive analysis was conducted to assess the overall drinking patterns of participants, including frequency of consumption and forms of alcohol consumed. Chi-square analyses of the relationship between gender and drinking patterns were performed to assess whether or not disparity existed within the sample cohort. Spearman's correlation analysis was conducted to test for any associations between students' demographics such as age and their corresponding drinking patterns. A Mann-Whitney U-test was utilized to examine gender differences in participants' perceptions of their own health in respect of their drinking patterns.

The focus groups were recorded and transcribed verbatim. A schedule of questions for the focus groups was designed and the questions were similar to the questionnaire questions, the focus being on probing the answers in more depth. Content analysis was undertaken on the focus group data. "Content analysis involves identifying, coding, categorising, classifying and labelling the primary patterns in the data" [45]. An inductive analysis was undertaken which involves allowing the patterns emerge from the data without presupposing in advance what these may be [45]. The data was colour coded according to themes. Eleven topics to be discussed were outlined in the focus group schedule which included exploring the relationship between alcohol consumption and sport during adolescence as well as during college years and also for participants to make recommendations for the future. The themes that emerged from the data were 1) the drinking culture in college 2) sport participation during college 3) drinking during adolescence and its effect on academic performance and 4) the lack of reflection on alcohol and its relationship with teaching. Analysis was independently completed by two researchers and then compared in order to limit potential bias and to increase the trustworthiness of the data reported.

Ethical considerations

Adherence to research ethics was an integral part of the research planning and implementation process [46]. The study complies with the Vancouver Convention. It met local ethical review standards from the University of Limerick Research Ethics Committee and while these local ethical standards do not explicitly state adherence to the Declaration of Helsinki, the study did meet these standards. Participation was completely voluntary for the research study and students' decision not to participate was respected, the privacy of participants was protected and participants' information remained confidential. To ensure anonymity of the questionnaire participants, no IP addresses were gathered in the course of the research. Pseudonyms were given to all those who participated in the focus groups to protect their identity. Each participant was well informed in advance of the study's aims, method and what was required of the participant while they were also informed of their right to refuse to participate and the right to withdraw from the study without prejudice up to the point of survey completion. Once the survey was completed there was no way to identify responses in order to isolate individual contributions for withdrawal. Focus Group participants were also informed of their right to withdraw without prejudice at any stage of the research process.

Results

The data indicate that 95% of participants drank alcohol with only 5% abstaining. The majority of these students were legally underage when they consumed alcohol for the first time as shown in the Table 2.

A Chi-square test for independence indicated no significant differences in the age groups at which male and female students' first consumed alcohol, X^2 (7, n = 144) = 10.961, p = .140. There was also no statistically significant difference in the age at which both male and female participant reported first becoming intoxicated, X^2 (12, n = 144) = 12.157, p = .433. However, results demonstrated significant difference between the number of male and female participants acknowledging previously being intoxicated X^2 (2, n = 144) = 16.466, p > .001, despite no significant gender differences witnessed in the number of participants indicating that they consume alcohol on a regular basis. 87% of males acknowledged that they have previously been intoxicated, compared to 74% of females. Differences were also witnessed in the amount of alcohol reported to be consumed in any discrete instance, with significantly more male students acknowledging regularly consuming more than 6 units of alcohol at once, X^2 (2, n = 144) = 40.183, p > .0005. However, a significant percentage of both male and female participants presented patterns of binge drinking when engaging in alcohol consumption, with 41.7% of students consuming over 6 units of alcohol (either beer, wine, or spirits) in one sitting (Table 3).

Of those who said they drank, 33% cited "to get drunk" as a reason for consuming alcohol while 38% of those who consumed alcohol did so as a way to relax and de-stress. Significant differences exist in the form of alcohol consumed by male and female participants, with 4.3% of males purporting that they never drink beer compared to 44.4% of female students. Similarly 60.9% of males stated that they never drink wine compared to only 14.8% of females. Similar statistically significant

Table 2. Age Participants first consumed alcohol.

Age	Frequency	Valid Percentage	Cumulative Percentage
Never	3	2.2%	2.2%
<9	2	1.4%	3.6%
10-12	8	5.8%	9.4%
13-15	38	27.3%	36.7%
16-18	77	55.4%	92.1%
19-21	10	7.2%	99.3%
22-24	1	0.7%	100.0%
Total	139	100%	

Table 3. Units consumed.

Unit in One Sitting	Number	%
Over 6 units	60	41.7%
5-6 Units	52	36.1%
3-4 Units	51	35.4%
1-2 Units	37	25.7%

differences was witnessed across all combinations of beer, wine and spirits, X^2 (5, n = 144) = 18.806, p = .002. It is also noteworthy that no significant correlation (either positive or negative) was witnessed between participants' age and the frequency or amount of alcohol consumed.

Further analysis was conducted to assess participants' perceptions regarding the link between their own health and their alcohol consumption. A Mann-Whitney U test revealed significant difference between the perceived level of health for male (Md = 1, n = 62) and female (Md = 2, n = 82) students, U = 1865, z = -3.05, p = .002, r = .254. This would suggest that there exists a greater awareness of the harmful effects of alcohol and also the health implications amongst female students. This has implications for their perceived role as health educators. It is also of note that 77% of students agreed or strongly agreed that their alcohol level had increased since they came to college.

Main opportunities to socialise are during the week going out. The whole college experience seems to be revolved around drinking (Q.R. 3)

Because you are in college and because of peer influence, ya it's definitely gone more frequent (P.1. F.G. 2)

Did not drink much before I came to college, in college it seem to be the culture so I fell into the trap (Q.R. 4).

When students were asked their opinion as to whether their attitudes to alcohol had a part to play in their role as physical education teachers, this appeared to be an issue that they had not previously considered and they also perceived it of little relevance. "*I wouldn't have thought about drink and stuff. I wouldn't relate it to being a teacher at all" (P. 1 F. G.1).* Indeed, participants suggested that alcohol consumption as a topic was not relevant for physical education classes: *"you don't really bring it into P.E. classes*" *(P.2. F. G. 1).*

Participants did perceive a connection between teachers' drinking behavior and their professional reputation, evidencing an awareness that their behavior was not healthy *"It would just be more your reputation as a teacher not that I don't want them to see me because it's not healthy" (P. 3. F. G. 1).* Participants appeared somewhat naive about adolescent drinking. They perceived that it would not be something they would encounter or have to deal with as teachers as "*they [school children] are underage so that wouldn't be an issue*" (P.2. F.G.1). Yet the survey yielded that 86.9% of respondents had used alcohol during their school going years (between age 9 and 18). So while the significant majority of these participants did not think substance use was an issue they will need to deal with as teachers, their own behaviour suggests differently. One participant identified attending school intoxicated *"… like you'd go to school pretty much drunk" (P. 4. F. G. 1).* For others, family tradition meant they were drinking from a young age, "*we were out at the back of the pub and he [my father] came over to me with a pint and said: my father bought me my first pint when he was 14 so I said I'd do the same for you" (P.2. F.G.2).*

The drinking patterns of the focus group participants, during their second level schooling had a negative impact on their education with comments such as*: "…match every single Sunday….all go out that night regardless of the score…ended up missing quite a few Monday mornings" "I wouldn't go into class cause of being hung-over" (P. 5. F. G. 1).* Binge drinking after abstaining from alcohol during preparation periods for matches was evident in phrases such as: "*Yeah you have to make the most of it" (P.1. F.G.2).*

Discussion

Participants in the study evidenced some ambivalent attitudes and behaviors with regard to their alcohol use that were cause for some concern. The results in this study reflect international trends that identify third level students as engaging in hazardous drinking patterns [25]. Binge drinking has been found to be increasingly popular among Irish college students [4] and the results of this study reflect this. However, it is of note that the students in this study did not view their binge drinking behaviors as problematic but simply as part of the rituals of college life. They articulated an expectancy to engage in drinking at this level. International literature has identified that attending university can be a disruptive experience for many students [47]. Indeed, according to Risquez et al. [48] the effects of negative transitions to first year are easily underestimated. As a result students may look to alcohol as a coping mechanism, indeed in this study 38% of students, cited the reasons they consumed alcohol were to de-stress and relax. Building the habit of alcohol use as a de-stressor and a relaxant is clearly problematic for their current and certainly for their future behavior patterns specific to alcohol. Alcohol consumption and binge drinking are frequently recognized as being part of the college culture [4].

Interestingly, there is a perception that college life can be perceived as a form of 'holding period', with the college years viewed as a type of vacuum where students appear temporarily exempt from the codes of conduct that are expected among mature adults [49]. This is followed by a further assumption that the patterns of hazardous behavior common in college life will automatically cease post-graduation. However, this type of hazardous drinking is not particular to the college years only. Worryingly among school-going children there is also a belief that heavy drinking is a common and accepted activity [50]. The European School Survey Project on Alcohol and Other Drugs [9] identified the trend among Irish teenagers and particularly teenage girls of drinking spirits as of particular concern. Coupled with the prevalent assumption that students will simply outgrow this behavior it becomes increasingly problematic. Hazardous drinking has a deleterious impact upon academic achievement both at second and third level education and students who engage in binge drinking are at risk of negative consequences that may impact upon their current academic achievements as well as their future lives [33].

In this study almost 37% of those surveyed consumed alcohol before the age of 15 and this is a perturbing trend. The findings here are keeping with international trends [9]. For some of the focus group participants it was clear that drinking during their adolescence had a negative effect on their education due predominantly to hangovers and academic attendance and this is also reflective of international trends [33]. This coupled with the naivety of the participants with regard to alcohol consumption among adolescents of school going age is of concern to the authors, particularly because the student teachers assume that adolescent drinking would not be an issue that the children in their classrooms will contend with. Yet, the National Institute of Alcoholism and Alcohol Abuse (NIAAA) (2009) specify teens that begin drinking before the age of 15 have a 40% greater chance of developing alcoholic

behaviours. Therefore, effective engagement with issues of alcohol consumption amongst school children is imperative for teachers and naivety in this regard, simply facilitates the phenomenon of underage drinking to continue. Without doubt the research points to the growing need for teachers to deal with the impact of underage alcohol consumption [11] as it impacts student learning, retention, motivation and general student well-being. It is curious that almost 37% of the students in the study reported consuming alcohol before the age of 15 themselves, and furthermore in the qualitative phase of the research they identified deleterious impacts upon their school attendance and learning and yet they had not made the connection that it might be an issue that could arise in their future teaching. This is an aspect that warrants further investigation in terms of the development of formation of teacher attitude to holistic and health education and the dissonance between their own experience and behaviours and their expectations of their students, particularly as these are students in their final year of their initial teacher education programme of studies with experience of school teaching practices.

Moore and Werch [35] have pointed out the prevalence of the assumption that those involved in health and fitness are considered to be health conscious and engage in other positive health behaviours. Respondents in this study did not reflect this assumption as over half of the participants reported binge drinking when consuming alcohol. Rather they are suggestive of some dissonance in this regard and appeared to reflect the potential that those involved in sport may actually be at a greater risk of alcohol related problems because the opportunity to binge drink is more often present in the sports pavilion [38]. It appears among these participants, that association with sport did little to promote a healthy and safe attitude toward alcohol. The trend of frequent binge drinking is worrisome and Allen Benton [51] identifies that there is unfortunately no clear way to determine which college students will phase out of binge drinking and which will continue hazardous drinking. She identified several risk factors for continuance, one of which includes the age at which drinking commences. The literature [51,52] identifies that drinking before the age of 15 increases risk of long term health behaviours. Allen Benton [51] further identifies that college students who engage in binge drinking and who graduate into work cultures that incorporate alcohol into their social events such as going out after work or class for drinks or drinking while networking are at higher risk for the continuance of hazardous drinking and this can be exacerbated by the drinking patterns of the group of friends that he or she then lives with or socializes with.

Clearly hazardous drinking is not gender neutral. While girls report more health problems than boys; this difference increasing with age [53-55], females were more likely than males to perceive the greater risks associated with alcohol consumption [56] offering some protective factors to their perspective. Norwegian research demonstrates that young men report more alcohol related problems than women during adolescence and early adulthood [57]. Norm compliant behavior such as abstaining from drinking has been linked to better self-reported health among Swedish adolescents [53]. Therefore, there is also need for attention to be given to the gendered patterns of adolescent behaviour specific to alcohol.

It is of note that the pre-service teachers in this study did not have a broad conceptualization of their role as health educators. They did not envisage themselves as ever teaching broader health topics to students but rather perceived that their teaching engagements would be specific to physical education only. This is unsurprising given that in Ireland at present the national physical education curriculum offers little incentive to health promotion but rather is centred primarily on movement, however it is acknowledged that "learning in physical education involves the acquisition of knowledge, concepts, skills and attitudes central to P.E. together with recognition of its potential for integration with other curriculum areas" [58]. The authors contend that physical education has a key role to play in the promotion of health in schools. The Scandinavian model for health education as an integral part of the PE curriculum [15] has much to offer the Irish education system. The change of title of 'Physical Education' to 'Physical Education and Health' in Sweden in 1994 is evidence of the integration of health into the syllabus [15] and is to all intents and purposes a significant and positive step. Although Finland has a separate health education subject, their PE syllabi strongly integrates health concepts and its main goal is to positively contribute to pupil's health [15]. In many European countries the physical education class plays a key role in the promotion of health and in the raising of awareness of health issues [59]. Ireland could benefit from adopting a similar vision with regard to the role of the physical education teacher. Irish teachers lack the necessary competencies to deal with health issues in class [12] particularly as there is insufficient expert and specialized training in this field [59]. There is limited if any exposure of initial teacher education students to health education in Ireland with teachers not having been trained specifically in health promotion. This is similarly the case in Norway [60] and in this gap much potential for health gain of the nation is lost.

Conclusion

In the data presented, it is clear that the physical education pre-service teachers in the study did not view themselves as being role models in terms of the promotion of health and well-being for their future students. However, the authors contend, that physical education teachers should have a role to play in this regard. Lack of attention to the promotion of health in schools in undergraduate education points to the need to reconceptualise the role of the physical education teacher and more specifically the types of teacher education offered pre-service. Reform needs to begin in universities in initial teacher education. In schools teachers may be called upon to help students as well as to provide instruction in terms of subject matter [10], and all pre-service teachers need to be aware of their potential as teachers of the whole person, not just as subject specialists. Also of concern are the health risk behaviours of the university students, particularly related to their alcohol consumption. Student teachers need to be challenged during teacher education, while developing a critical pedagogical approach to the subject [61] and also confronting their own at-risk behaviours which may mask their ability to recognise similar behaviours among their own students [10]. Clearly, more research specific to pre-service teachers own beliefs and values in relation to health is warranted.

Limitations of the study

The sample was taken from a single university in Ireland and within that university only students undertaking one particular course were sampled, thus the results may not be generalizable to all college students. Although the questionnaire was modelled on the Student Alcohol Questionnaire (SAQ) [43], no test for reliability on the questionnaire as a whole was undertaken. Therefore although tests have been undertaken on those respective tests of the SAQ, they have been done as a whole and not on selecting individual items. Our measurement also required participants to recall, which is error prone as time since the event increases [62]. The focus group findings are specific to those participants that participated and findings cannot be generalized to the whole population.

References

1. Anderson P, Moller L, Galea G (2012) Alcohol consumption in the European Union: Consumption, harm and policy approaches. Geneva: World Health Organization Regional Office for Europe.
2. Morgan M, Brand K (2009) European Schools Survey Project on Alcohol and Other Drugs (ESPAD): Results for ESPAD 2007: Ireland. Dublin: Government Publications.
3. Hope A (2007) Alcohol consumption in Ireland 1986-2006. Retrieved March 28, 2011.
4. Hope A, Dring C, Dring J (2004) College Lifestyle and Attitudinal National Survey. Galway: National University of Ireland.
5. Hibell B, Guttormsson U, Ahlström S, Balakireva O, Bjarnason T, et al. (2011) The 2011 European School Survey Project on Alcohol and Other Drugs (ESPAD) Report: substance use among students in 36 European countries. Stockholm: Modintryckoffset AB.
6. Morgan K, McGee H, Watson D, Perry I, Barry M, et al. (2008) SLÁN 2007: Survey of Lifestyle, Attitudes & Nutrition in Ireland Main Report. Dublin: Department of Health and Children.
7. Välimaa R, Kannas L, Lahtinen E, Peltonen H, Tynjälä J, et al. (2007) Finland: Innovative health education curriculum and other investments for promoting mental health and social cohesion among children and young people at school setting. In: A. Mathieson & T. Koller (Eds.) WHO/HBSC Forum 2007 – Social cohesion for mental well-being among adolescents (pp.91-103). Venice: WHO Regional Office.
8. Department of Education and Science (2000) Social Personal and Health Education. Dublin: Government Publications.
9. Hibell B, Guttormsson U, Ahlström S, Balakireva O, Bjarnason T, et al. (2009) European School Survey Project on Alcohol and Other Drugs (ESPAD) Report-substance use among students in 35 European countries.
10. Trammel R, Kurpius S, Metha A (1998) Suicide and substance abuse among student teachers. *J of Alcohol Drug Educ* 43: 64-74.
11. Van Hout M, Connor S (2008) A qualitative study of Irish teachers' perspective of student substance use. *J of Alcohol Drug Educ* 52: 80-91
12. Mannix Mc Namara P, Moynihan S, Jourdan D, Lynch R (2012) Pre-service teachers' experience of and attitudes to teaching SPHE in Ireland. *Health Education* 112: 199-216.
13. Lumpkin A (2008) Teachers as role models teaching character and moral virtues. *J Physic Educ, Recreat Dance* 79: 45-49.
14. Lisicki T (2009) Health education in the Polish educational system. *Europ J Physic Heal Educ* 2: 61-74.
15. Annerstedt C (2008) Physical education in Scandinavia with a focus on Sweden: a comparative perspective. *Physic Educ & Sport Pedagogy* 13: 303-318.
16. Rodgers A, Ezzati M, Vander Hoorn S, Lopez AD, Lin RB, et al. (2004).Distribution of major health risks: Findings from the Global Burden of Disease study. *PLoS Medicine/ Public Library of Science* 1: 44-55.
17. Room R, Babor T, Rehm J (2005) Alcohol and public health. *Lancet* 365: 519-530. [Crossref]
18. World Health Organisation (WHO) (2000) European Alcohol Action Plan 2000 – 2005. Copenhagen: World Health Organisation Regional Office for Eurpoe.
19. Unruh S, Long D, Rudy J (2006) Alcohol consumption behaviors among athletic training students at accredited athletic training education programs in the Mid-America athlletic trainers' association. *J Athlet Training* 41: 435-440.
20. Ward B, Gryczynski J (2007) Alcohol use and participation in organized recreational sports among university undergraduates. *J of Amr Colleg Health* 56: 273-279.
21. White A, Kraus C, Swartzwelder H (2006) Many college freshmen drink at levels far beyond the binge threshold. *Alcoholism: Clin Exp Research* 30: 1006-1010.
22. Wechsler H, Lee J, Kuo M, Nelson T, Lee H (2002) Trends in Alcohol Use, Related Problems and Experience of Prevention Efforts among U.S. College Students 1993-2001: Results from the 2001 Harvard School of Public Health College Alcohol Study. *J of Amr Coll Health* 50: 203-217.
23. Naimi TS, Brewer RD, Mokdad A, Denny C, Serdula MK, et al. (2003) Binge drinking among US adults. *JAMA* 289: 70-75. [Crossref]
24. Gill JS (2002) Reported levels of alcohol consumption and binge drinking within the UK undergraduate student population over the last 25 years. *Alcohol Alcohol* 37: 109-120. [Crossref]
25. Kypri K, Langley J, McGee R, Saunders J, Williams S (2002) High prevalence persistent hazardous drinking among New Zealand tertiary students. *Alcohol & Alcoholism* 37: 457-464.
26. Rehm J, Room R, Graham K, Monteiro M, Gmel G, et al. (2003) The relationship of average volume of alcohol consumption and patterns of drinking to burden of disease: an overview. *Addiction* 98: 1209-1228. [Crossref]
27. Grønbaek M (2009) The positive and negative health effects of alcohol- and the public health implications. *J Intern Med* 265: 407-420. [Crossref]
28. Murphy JG, Hoyme CK, Colby SM, Borsari B (2006) Alcohol consumption, alcohol-related problems and quality of life among college students. *J Coll Stud Developm* 57: 110-121.
29. American Medical Association (AMA) (2002) Harmful consequences of alcohol use on the brains of children, adolescents and college students.
30. Welcome MO, Razvodovsky YE, Dotsenko EA, Pereverzev VA (2008) Prevalence of alcohol-linked problems among Nigerian students in Minsk, Belarus and their academic performance. *Part Harcourt Medical J* 3, 120-129.
31. Wood PK, Sher KJ, Erickson DJ, DeBord KA (1997) Predicting academic problems in college from freshman alcohol involvement. *J Stud Alcohol* 58: 200-210. [Crossref]
32. Wolaver AM (2002) Effects of heavy drinking on study effort, grade point average and major choice. *Contemporary Economic Policy* 20: 415-428.
33. Faulkner S, Hendry LB, Roderique L, Thomson R (2006) A preliminary study of the attitudes, triggers and consequences of hazardous drinking in university students. *Health Education Journal* 65: 159-169.
34. Carpenter B (2011) Pedagogically bereft! Improving learning outcomes for children with foetal alcohol spectrum disorders. *British J Special Educ* 38: 37-43.
35. Moore MJ, Werch C (2008) Relationship between vigorous exercise frequency and substance use among first-year drinking college students. *J Amr Coll Health* 56: 686-690.
36. Aaron DJ, Dearwater SR, Anderson R, Olsen T, Kriska AM, et al. (1995) Physical activity and the initiation of high-risk health behaviors in adolescents. *Med Sci Sports Exerc* 27: 1639-1645. [Crossref]
37. Pate R, Heath G, Dowda M, Trost S (1996) Associations between physical activity and other health behaviours in a representative sample of US adolescents. *Amr J Publ Health* 86: 1577-1582.
38. O'Brien CP, Lyons F (2000) Alcohol and the athlete. *Sports Med* 29: 295-300. [Crossref]
39. Lorente FO, Souville M, Griffet J, Grélot L (2004) Participation in sports and alcohol consumption among French adolescents. *Addict Behav* 29: 941-946. [Crossref]
40. Leichliter JS, Meilman PW, Presley CA, Cashin JR (1998) Alcohol use and related consequences among students with varying levels of involvement in college. *J Amr Coll Health* 46: 257-262.
41. Stainback RD (1997) Alcohol and Sport. Leeds: Human Kinetics.
42. Bell J (2010) Doing your research project: A guide for first-time researchers in education, health and social science. New York: Open University Press.
43. Engs RC (2007) The Student Alcohol Questionnaire.
44. Green G, Thorogood N (2004) Qualitative Methods for Health Research. London: Sage Publishers.
45. Patton MQ (2002) Qualitative research & evaluation methods (3rd ed.). London: Sage publications.
46. Mertens D (1998) Research Methods in Education and Psychology: Integrating diversity with quantitative and qualitative approaches. London: Sage.
47. Hystad S, Eid J, Laberg J, Johnsen B, Bartone P (2009) Academic stress and health: exploring the moderating role of personality hardiness. *Scandinavian J Educ Research* 53: 421-429.
48. Risquez A, Moore S, Morley M (2007) Welcome to College? Developing a Richer Understanding of the Transition Process for Adult First Year Students Using Reflective Written Journals. *J Coll Student Retention* 9: 183-204.
49. Crawford L, Novak K (2010) Beliefs about alcohol and the college experience as moderators of the effects of perceived drinking norms on student alcohol use. *J Alcohol Drug Educ* 54: 69-86.
50. Borsari B, Carey KB (2003) Descriptive and injunctive norms in college drinking: a meta-analytic integration. *J Stud Alcohol* 64: 331-341. [Crossref]

51. Allen Benton S (2009) The high functioning alcoholic: understanding this hidden class of alcoholics from a professional and personal view. Westport: Praeger Publishers.

52. National Institute of Alcoholism and Alcohol Abuse (2006) Underage drinking: why do adolescents drink, what are the risks and how can underage drinking be prevented? *Alcohol Alert* 67: 1-2.

53. Nygren K, Janlert U, Nygren L (2011) Norm compliance and self-reported health among Swedish adolescents. *Scand J Public Health* 39: 44-50. [Crossref]

54. Hjern A (2006) Chapter 7: children's and young people's health. *Scand J Public Health Suppl* 67: 165-183. [Crossref]

55. Torsheim T, Valimaa R, Danielson M (2004) Health and well-being. In: C. Currie, C. Roberts, A. Morgan, R. Smith, W. Settertobulte, O. Samdal & V.B. Rasmussen (Eds.). Young people's health in context. Health Behaviour in School-aged Childre (HBSC) study: international report from the 2001/2002 study (pp.55-62). Geneva: World Health Organisation.

56. Spigner C, Hawkins W, Loren W (1993) Gender differences in perception of risk associated with alcohol and drug use among college students. *Women Health* 20: 87-97. [Crossref]

57. Hammer T, Pape H (1997) Alcohol-related problems in young people. *J Drug Issues* 27: 713-731.

58. Department of Education and Science (2003) Physical Education. Dublin: Government Publications.

59. Marádová E (2009) Transformation of education towards health in Czech schools and current trends in teacher training. *European J Physic & Health Educ* 2: 75-80.

60. Grieg Viig N, Wold B (2005) Facilitating teachers' participation in school based health promotion – a qualitative study. *Scandinavian J Educ Research* 49: 83-109.

61. Simpson K, Freeman R (2004) Critical health promotion and education--a new research challenge. *Health Educ Res* 19: 340-348. [Crossref]

62. Groves R, Fowler F, Couper M, Lepkowski J, Singer E, et al. (2009) Survey Methodology (2nd ed.). New Jersey: John Wiley & Sons Inc.