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Original Article

Not really a smoker? A study on the prevalence of and attitudes to occasional social smoking in a third level institution in Ireland

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Abstract

Background

Occasional smoking is defined as any smoking occurring on a less than daily basis. Social smoking, i.e. smoking primarily in social contexts, is a sub-group of occasional smoking. Data on occasional cigarette smoking and the subset of social smoking among third level students are limited.

Objectives

(1) To determine prevalence of occasional/social smoking among third level students in an Irish university; (2) to evaluate students' attitudes to occasional/social smoking, including perceived benefits and harm; (3) to explore when students commenced occasional/social smoking, their reasons and continued smoking habits; and (4) to determine any influence of other factors, e.g. alcohol consumption, on occasional/social smoking.

Methods

An anonymous online survey was distributed to undergraduates and postgraduates, using SurveyMonkey. Data were analysed in Microsoft Excel.

Results

Of 18,407 students surveyed, 1310 (7.1%) responded; ~~Of the 1310 students,~~ 1267 (96.7%) provided adequate data for analysis. Of the 1267 students, 423 (33.4%) self-reported as current smokers of whom 106/1267 (8.4%) self-classified as daily smokers and 317/1267 (25%) as occasional smokers. The 25% of occasional smokers comprised 266/1267 (21%) social smokers and 51/1267 (4%) non-social smokers. Occasional smokers tended to start smoking earlier and think less about quitting than daily smokers. Of 423 ~~of all~~ current smokers, 386 (97.2%) reported that alcohol increased their smoking habits.

Conclusion

Prevalence of self-reported occasional smoking among university students was higher than daily smoking. Most occasional smokers primarily smoked in social contexts. All current smokers reported that alcohol increased cigarette intake. Effective intervention campaigns tailored to determinants of occasional/social smoking are needed as part of induction to third level.

Keywords

Alcohol and smoking
Occasional smoking
Social smoking
Third level students

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1007/s11845-020-02439-5>.

Introduction

“Tobacco use is the leading cause of preventable death in Ireland with almost 6,000 smokers dying each year from tobacco related diseases”²²[1]. Data from the 2017 Healthy Ireland Survey revealed that 21% of Irish young people aged 18 to 24 are current smokers; 16% smoke daily, and a further 5% identify themselves as occasional smokers [2]. Ireland has a

national goal of becoming a Tobacco Free Ireland ~~by 2025~~ (smoking prevalence of less than 5%) ~~by 2025~~ [3].

Trinity College Dublin has implemented a Tobacco Free Trinity initiative which prohibits smoking indoors and outdoors on campus with three minor exceptions. Its aim is to achieve the national Tobacco Free Ireland goal of a smoking prevalence of less than 5% among students and staff [4]. A 2013 survey of daily and occasional smoking in Trinity, established that occasional, rather than daily smoking is more prevalent among Irish university students [5].

The Royal College of Physicians of Ireland (RCPI) Tobacco Policy Group defined occasional and social smoking as follows: “Occasional smoking is a broad term that encapsulates a variety of smoking patterns. It is defined as any smoking which occurs on a less than daily basis. Social smoking is a sub-group of occasional smoking which is smoking primarily carried out in social contexts” [6]. For the purpose of this study, the sub-groups of occasional social smoking and occasional non-social smoking are considered.

Individuals may consider occasional smoking to be less hazardous to their health than daily smoking [7]. However, research has indicated that occasional smokers carry an increased risk of mortality (38%) when compared to non-smokers [8]. Furthermore, the 2014 US Surgeon General’s Report indicated that even brief exposure to tobacco ~~may~~ ~~could~~ “lead to significant acute CVD risks” [9].

There is a long established association between current smoking and alcohol. Social drinkers are more likely to smoke than non-drinkers and smokers are more likely to drink than non-smokers. These findings persist across age, sex and culture [10]. However, the relationship between social smoking and alcohol consumption in university students is less clear. A study to examine the association between smoking status and alcohol consumption in a sample of patrons attending a college student bar found that the drinking habits of social smokers reflected those of non-smokers while ~~being a~~ regular smoker~~er~~ was associated with higher drinking levels than the rest of the sample [11].

Research to date has primarily focused on daily and occasional smoking,

with social smoking often not considered as a separate subset of occasional smoking. Internationally, data on social smoking among university students are limited. A US study of 10,904 students, conducted in 2001, reported that 51% of all current smokers surveyed were social smokers [12]. ~~Another study, published in 2006, revealed that 70% of current smokers reported smoking socially (Waters, 2006 #32).~~ This research study aims to provide an insight into the smoking behaviours of undergraduate and postgraduate students in Trinity. It focuses particularly on occasional smoking and the subset of social occasional smoking, hereafter referred to as occasional/social smoking.

The aims of this study were to:

1. Determine the prevalence of occasional/social smoking among third level students;
2. Evaluate students' attitudes to occasional/social smoking, including perceived benefits and harm;
3. Explore when students commenced occasional/social smoking, their reasons and their continued smoking habits; ~~and~~
4. Determine any influence of other factors, e.g. alcohol consumption, on occasional/social smoking.

The results of this study will promote increased understanding of third level student smoking habits in Ireland. It will also be used to enhance the work of the Tobacco Free Trinity initiative above ~~(Trinity College Dublin, 2019 #7)~~[4].

Methods

Study design

The study was a cross-sectional survey of third level university students, conducted in April 2019.

Inclusion and exclusion criteria

All undergraduate, postgraduate, part-time and visiting students aged 18 years and over were eligible to participate. Respondents were invited

to self-exclude if under ~~the age of~~ 18 years. Staff were excluded from the study.

Ethical approval

Ethical approval was obtained from the School of Medicine Research Ethics Committee in March 2019. Once ~~this ethical approval~~ was obtained, an email was distributed to all undergraduate and postgraduate students. The link to the survey was live for ~~three~~ 3 days in April 2019.

Information leaflet and consent

An information leaflet was included for survey participants, which provided background information on the research study, information on how their data would be used once collected and a link to the online questionnaire. In accordance with General Data Protection Regulation (GDPR), students were informed that anonymity would be achieved via an email a link to a webpage which then presented a link to a SurveyMonkey questionnaire. The internet protocol (IP) address of the device on which the survey was completed was not recorded. A prize of concert tickets was offered as an incentive to encourage students to participate in the survey. If the student wished to participate in the draw their email address was collected using a separate Microsoft One Drive form which was destroyed once the winners were announced. Participants were advised to contact the College Health Service if they were affected by any issues raised in the survey. Contact details ~~of one of the investigators of~~ were provided if participants had questions relating to the survey.

Study instrument and data collection

The survey addressed demographic characteristics and smoking behaviours.

Demographic data included ~~sex and age~~, type of student (undergraduate or postgraduate), age, sex, course of study and living situation. Social class data were not collected as the research team were of the view that this ~~might~~ may adversely influence the response rate. Data on smoking behaviour included smoking status, previous smoking history, duration of smoking, number of cigarettes smoked, previous ~~quitting~~ attempts and

quitting intention, risks/benefits of occasional/social smoking and e-cigarette use. Smokers were asked to classify themselves as either a daily, occasional, or social smoker. ~~Occasional smokers who did not classify themselves as social smokers were deemed to be occasional/ non-social smokers. Never and ex-smokers were classified as non-smokers.~~

Respondents were asked questions specific to their declared smoking status. Where possible, these were based on the 2017 Healthy Ireland Survey; however, questions on social smoking specifically did not feature in that survey [2] and thus were based on the limited published research in this area [2, 6].

Participants were asked if they predominantly smoked hand-rolled or regular packaged cigarettes. The age at which they began to smoke, what prompted them to do so and whether alcohol had an impact on their smoking habits were also ascertained. Awareness of the health risks associated with occasional/social smoking was specifically asked, and whether the students believed that occasional/social smoking increases likelihood of becoming a regular daily smoker. Participants were also asked what they considered to be the benefits of occasional/social smoking, to better understand the motives of ~~these~~ occasional/social smokers as a subset of all current smokers. In addition, they were asked if they would use a designated non-smoking outdoor area if this were to become available.

Data analysis and reporting

Frequency of variables was carried out using SurveyMonkey. Data were exported to Microsoft Excel. Statistical significance testing was carried out using χ^2 tests for categorical variables and t tests/ANOVA for continuous variables.

Results

The survey was emailed to 18,407 students. In total, 1310 students responded, yielding a response rate of 7.1%. Staff responses were removed ($n = 4$). Respondents who did not indicate their current smoking status were also removed ($n = 39$) thus leaving responses from 1267

undergraduate and postgraduate students. The response rate was higher for undergraduate students. In total, 479 (37.8%) of respondents were male, 774 (61.1%) female, 4 chose other and 10 left the question blank. A breakdown of responses by student type and gender is shown in Table 1.

Table 1

Breakdown of responses by student type and gender

Variable	Respondents	Student population	Response rate
Student type	<i>n</i>	<i>n</i>	%
Postgraduate	233	5122	4.5
Undergraduate	1034	13,285	7.8
Total	1267	18,407	6.9
Gender			
Female	774	11,044	6.7
Male	479	7362	6.5
Total	1253	18,407	6.8

Figure 1 shows the smoking status of respondents. Of 1267 respondents, 423 self-reported as current smokers of whom 106/1267 (8.4%) classified themselves as daily smokers and 317/1267 (25%) as occasional smokers. The 25% of occasional smokers comprised 266/1267 (21%) occasional social smokers and 51/1267 (4%) occasional non-social smokers. Of the 1267 respondents, 839 (66.2%) were non-smokers (Fig. 1), of whom 554/1267 (43.7%) had never smoked and 285/1267 (22.5%) were ex-smokers.

Fig. 1

Smoking status of respondents ($N = 1267$)

The mean age of daily smokers was 23.1, occasional social 21.6 and occasional non-social 21.4 ($F = 4.546$, $p = 0.01$).

In total, 181 (37.8%) males identified as current smokers, compared to 237 (30.6%) females. Although a higher percentage of males self-reported as daily smokers (9.7% males vs 7.6% females) and occasional social smokers (24.6% males vs 19.2% females), these differences did not reach statistical significance ($p = 0.06$). More postgraduate students self-reported as daily smokers than undergraduates (10.7% vs 7.9%); however, undergraduates were almost twice as likely to be social smokers (23.1% vs 12%, $\chi^2 = 10.75$, $p = 0.005$).

Current smokers were asked about their quitting intentions. Of those who

responded ($n = 409$), 166 (40.6%) had stopped smoking for ~~1~~one -day or longer in the past 12 months because they were trying to quit. More daily smokers had tried to quit in the last 12 months, 58/104 (55.8%), compared to 85/255 (33.3%) of occasional social smokers and 23/50 (46%) of occasional non-social smokers. Seventy-two (69.3%) of daily smokers, 97 (38%) of occasional social smokers and 26 (52%) of occasional non-social smokers were actively planning to quit, or thinking about but not planning to quit at the time of ~~this~~ survey.

In total, 178/237 (75.1%) of occasional/social smokers smoked 1–2 cigarettes per week, compared to 10/50 (20%) of non-occasional/social smokers. The majority of occasional non-social smokers who completed data ($n = 50$) smoked 3–9 cigarettes per week, 31 (62%); 5 (10%) smoked 10–19 cigarettes ~~per week~~ and 4 (8%) smoked 20 or more cigarettes per week.

Regarding type of cigarette smoked, 68/103 (66%) of daily smokers reported that they predominantly smoked hand-rolled cigarettes compared to almost one-third of occasional social smokers 79/240 (32.9%) and 20 (40%) of the occasional/non-social smokers.

In total, 332 of all 674 current and ex-smokers (49.2%) started smoking at ~~the age of~~ 18 years or older (~~49.2%~~), 292 (43.3%) between ~~the ages of~~ 15 and 17 years and 50 (7.4%) under ~~the age of~~ 15 years. Daily smokers were more likely to have started smoking at a younger age, with 19/103 (18.4%) starting at age 15 or lower, compared to 11/243 (4.5%) of occasional social smokers and 4/50 (8%) of occasional/non-social smokers. In contrast, only a third of daily smokers 34/103 (33%) started smoking at ~~the age of~~ 18 or above compared to 119/243 (49%) of occasional social smokers and 21/50 (42%) of occasional non-social smokers.

Figure 2 shows that 384/676 (56.8%) of all current and ex-smokers identified peers as the strongest factor that influenced their decision to start smoking. Among current smokers, stress was cited as the strongest factor in 32/103 (31.1%) of daily smokers, 27/243 (11.1%) of occasional social smokers and 18/50 (36%) of occasional non-social smokers. Enhancing one's image was identified as a factor by 46 (6.8%) of all current and ex-smokers. Of those who selected the option "other" 131/676

(19.4%), “curiosity” was a recurring factor cited.

Fig. 2

What prompted you to start smoking? (N = 676)

Figure 3 shows the influence of alcohol on smoking habits. The vast majority of all current and ex-smokers (632 (93.2%)) stated that alcohol sometimes, usually or always increased their smoking habits. The majority of daily smokers 82 (79.6%), 97 (39.8%) of occasional social smokers and 39 (78%) of occasional non-social smokers stated that alcohol usually increased their smoking habits. Additionally, over half, (128 (52.5%)) of occasional/social smokers stated that they only smoked when drinking alcohol (Fig. 3).

Fig. 3

Does alcohol increase your smoking habits? (N = 678)

Three-quarters of respondents (~~868/1182 (76.7%)~~) stated that they had heard of but not tried e-cigarettes. Forty-seven students stated they had tried and still used e-cigarettes, ~~—29 (61.7%)~~ of these were occasional social smokers. Forty-five daily smokers (45.5%), 84 occasional social smokers (35.7%) and 20 occasional non-social smokers (40.8%) reported that they had tried, but no longer used e-cigarettes.

In total, 1132 (95.8%) of respondents stated they were aware of the health risks associated with occasional/social smoking. ~~Of these And~~ 1042 participants (88.3%) believed that occasional/social smoking increases one's risk of becoming a full-time smoker. Twelve daily smokers (12%) and 33 (14%) of occasional social smokers (~~(14%)~~) did not believe that occasional social smoking increases one's risk of becoming a full-time smoker, in contrast to 4 (8.3%) of occasional non-social smokers (~~(8.3%)~~) and 38 (4.8%) of non-smokers (~~(never and ex-smokers) (4.8%)~~).

Participants were asked what they considered to be the benefits of occasional/social smoking. ~~Resondents could consider more than one option.~~ In total, 417/990 (42.1%) stated there was no benefit; 536/990 (54.1%) stated that for occasional/social smoking having a smoking area provided a quiet area for socialising/chatting; ~~and a further~~ 240/990 (24.2%) that this provided an outdoor space for “fresh air”. ~~In total,~~

and 115 (11.6%) ~~said~~ that occasional/social smoking was beneficial because it enhanced one's image.

A clear majority of students, 954/1185 (80.5%), stated that they would utilise a non-smoking outdoor area for conversations or fresh air instead of the smoking area, 191/1185 (16.1%) stated that they would not use it, and 40/1185 (3.4%) were unsure. Daily smokers were least supportive of the idea, with only 51/100 (51%) stating that they would use the area. In contrast, 175/236 occasional social smokers (74.2%), 31/51 occasional non-social smokers (63.3%) and 697/844 non-smokers (82.67.1%) were in favour of the proposal.

Discussion

~~Our findings of t~~This study of the prevalence of and attitudes to occasional/social smoking among students in an Irish university indicate that smoking culture in university varies significantly to that of wider society. The proportion of daily smokers in Trinity College was less than half the national average of 21% found in among people aged 18–24 in the 2017 Healthy Ireland Survey [2]. The prevalence of occasional smoking among Trinity students however was much higher (25% vs 4%). The previous survey conducted in 2013 [5] reported an occasional smoking prevalence of 12%. Offering a social smoking option in our survey may have prompted participants to identify as social smokers rather than non-smokers which may in part explain the much higher prevalence. There is also an inbuilt social class difference between our survey, which favours the higher social classes and the Healthy Ireland Survey, which may in part account for the differences noted.

Our findings suggest a gradual progression from occasional smoking to daily smoking over time. ~~They are is is~~ in keeping with the findings of long-term study that followed smokers over ~~a period of~~ 17 years which indicated that 13% of occasional smokers ~~progressed~~ ~~ceeded~~ to become daily smokers [13]. Notably, undergraduates were more likely to be occasional smokers and postgraduate students daily smokers. The average age of smoking initiation was 18 years suggesting that an alarmingly high number of students take up smoking in university. This has been echoed by other studies, which also identified the transition into university as a dynamic period for smoking initiation [14, 15]. Over half of all current

and ex-smokers identified peers as the strongest factor that influenced their decision to start smoking. Previous studies have shown that peers influence adolescents to start smoking [16] and that students smoke more cigarettes with peers than when smoking alone [17].

There were some notable differences between occasional social and non-social smokers. Social smokers were younger and were the largest group that did not believe that occasional/social smoking increased the risk of becoming a full time smoker. Social smokers smoked less than occasional non-social smokers, 40% of whom reported smoking six or more cigarettes per week. Previous research has also revealed that some occasional smokers smoke a high number of cigarettes [18]. This may be a cause for concern as some occasional smokers may fall into the category of daily smokers, despite defining themselves as occasional smokers.

It is widely accepted that alcohol consumption is linked to increased smoking habits [10, 19]. A US study, involving first year college students, revealed that 74% of all smoking episodes occur while under the influence of alcohol [20]. In our study, over 95% of current smokers ~~in our survey~~ revealed that alcohol increased their smoking habits.

Previous ~~in~~ research has indicated that alcohol induced an increased urge to smoke, particularly among light smokers [21]. In addition, alcohol consumption enhanced the “pleasure and desire” experienced when smoking in both regular smokers and those experimenting with smoking, ~~however, but~~ in those ~~who~~ experimented ~~ing~~ with smoking, this enhancement was greater [22]. As social smoking is concerned with smoking primarily in social situations, it is therefore not surprising that over half of occasional social smokers reported that they only smoked when drinking alcohol, compared to just 4% of occasional non-social smokers and 1% of daily smokers. This emphasises the importance of considering occasional social smoking as a separate category to occasional non-social smoking. Research has illustrated that there is a greater association between intermittent smoking and hazardous drinking than with daily smoking [23].

Most students were trying to quit at the time of the ~~is~~ survey. As ~~132 (95.896%)~~ of students reported that they were well informed with regard to the health risks associated with occasional/social smoking, recognition

of the health risks alone does not appear to provide enough motivation for students to quit smoking. Research has demonstrated that smokers tend to underestimate the health risks associated with occasional smoking [7]. This is concerning as it has been indicated that smoking just one cigarette per day carries 40–50% of the excess risk of developing coronary heart disease and stroke, when compared to smoking 20 cigarettes per day [24].

This study is the first survey of social smoking in Irish university students. Although well conducted, there were some potential biases in the study. Our response rate (7.1%) was considerably lower than that of other studies of this kind, which had response rates ~~of~~ between 26.5–6 and 78.7–7% [11, 25, 26, 27]. However, in those who responded, the proportion of missing data was low. Undoubtedly, the small window of opportunity for students to complete the survey contributed to this. The survey was live for just ~~three~~3 days due to the introduction of GDPR, which led to delays in obtaining ethical approval. As the survey was an undergraduate project, the end date of the survey could not be moved due to timetabling constraints. Given this is an exploratory survey, we ~~consider~~~~feel~~ the short duration ~~to be~~~~is~~ acceptable, ~~however~~ ~~but that~~ future data should be collected for a longer ~~period~~. A higher proportion of respondents were females (61.6% vs 38.1%), which may have distorted the study findings; however, the proportion of male and female smoking was similar in all the categories studied. Our data on smoking are self-reported. It is well established that self-reported smoking data are associated with under-reporting of smoking prevalence. However, the anonymity assured by the survey method is likely to have reduced the likelihood of data underreporting. It may also have reduced socially desirable responses and encouraged the completion of sensitive data.

Additional limitations are that data were not collected on smoking habits while on campus. Furthermore, a desire to encourage response and to keep data requirements to the minimum necessary resulted in social class data not being collected. Almost three-quarters of Trinity students do not receive state grant support; hence, sufficient variation in the data to merit collection is unlikely.

The positive environmental impact of a tobacco-free campus was also not discussed which is a potential area of further research. Finally, the cross-

sectional nature of the data and convenience sampling mean that limited inferences can be made from this research.

Recommendations

The high prevalence of occasional smoking and social smoking in particular among university students is a significant issue that requires attention. Most current smokers in Trinity began smoking at the age of 18 or above as occasional smokers. Therefore, we recommend that the Tobacco Free Campus committee develops anti-smoking initiatives specifically targeting first year students. This may be accomplished by widespread circulation of information by the university health services about the benefits associated with smoking cessation and availability of cessation programmes as part of university induction programmes. Findings from a student survey at University College London indicated that young people are less receptive to health warnings than older people and may respond better to campaigns that highlight the positive benefits of giving up an action [28]. Thus, highlighting the benefits of smoking cessation may be more effective than highlighting health risks alone.

Based on the high prevalence of occasional/social smoking in third level students and the separate determinants of social and non-social occasional smoking, we recommend that cessation programmes provided by the university be adapted to increase focus on these determinants. Support for implementation of a non-smoking outdoor area in establishments that serve alcohol was overwhelmingly positive among the student body even among current smokers and may encourage cessation. The Tobacco Free Trinity initiative is currently considering the creation of such an area [4]. Given the differences we found between occasional social and occasional non-social smoking, we recommend that social smoking be included as a separate sub-category of occasional smoking in future Healthy Ireland Surveys, at least in the 18–24-year-age group, so that a national picture of social smoking may be established.

Conclusion

Our paper adds a new dimension to the conversation about smoking among third level students in Ireland.

Patterns of smoking among Irish university students differ substantially to

the national smoking picture, with a higher proportion of occasional smokers and a lower proportion of daily smokers. The high proportion of social smokers is a particular cause for concern. Many students take up occasional smoking when they start university and appear to progress to daily smoking; hence, incoming students need to be specifically targeted for anti-smoking initiatives. Quitting campaigns need to be adjusted to focus on occasional/social smoking, and e-cigarette use and the influence of alcohol must also be considered. The high prevalence of occasional social smoking highlights the need to collect data on social smoking in future surveys of third level students and nationally.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval The project was approved by the Research Ethics Committee of the School of Medicine at Trinity College Dublin.

Supplementary information

ESM 1

(PDF 105 kb)

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