

***Title: 'An Investigation into how different Environmental Settings Influence
Smoking Prevalence, Attitudes, and Behaviours'.***

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List of Abbreviations

CSO.....	Central Statistics Office
DV.....	Dependant Variable
HBSC.....	Irish Health Behaviour in School-Aged Children
HSE.....	Health Service Executive
IV.....	Independent Variable
MRBI.....	Market Research Bureau of Ireland
OECD.....	Organisation for Economic Co-operation and Development
OTC.....	Office of Tobacco Control
RQ.....	Research Question
SC.....	Shopping Centre
SC.....	Social Class
SES.....	Socio-economic Status
SLAN.....	Survey of Lifestyle, Attitudes and Nutrition in Ireland
SPSS.....	Statistical Analysed Package for Social Sciences
WHC.....	Waterford Healthy Cities
WHO.....	World Health Organisation

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Abstract

Overview: Tobacco use is a major contributor to ill health and mortality and exacerbates health inequalities. Smoking prevalence remains higher in lower Socio-economic status (SES) areas, and lower SES smokers may face greater exposure to the harms of tobacco. Research suggests that SES alone cannot determine inequalities in health. Health behaviours are influenced by mechanisms working at several levels. Other variables, such as personal, social, and environmental factors may play a significant role. The aim of this study is to examine prevalence, attitudes and behaviours related to smoking among two areas different in SES.

Method: The research design utilised was a cross-sectional study. Two areas different in SES were identified and within those areas two shopping centres were chosen in order to recruit participants. One hundred participants from each area were selected to complete a researcher administrated questionnaire. Data was analysed using the Statistical Analysed Package for Social Sciences (SPSS).

Results: Smoking prevalence continues to be higher in lower SES areas. Participant's attitudes to the smoking ban were positive, however, varied across smoking status. Surprisingly, the variable 'All my friends/ family smoke were the only significant factors that influenced smoking status among lower SES smokers only. No significant difference was found between the groups in relation to implementing a voluntary smoking ban in homes. The lower SES area was found to be denser in tobacco sales outlets and also to have poorer signage indicating where smoking was and was not allowed, possibly influencing where people smoked.

Conclusion: Smoking prevalence continues to be a contributing factor to health inequalities, particularly among lower social groups. While there seems to be a positive change in people's attitudes to smoking, in order to enable sustainable change there needs to be greater policing from the enforcing authorities regarding policy and legislation.

Chapter 1

Introduction

1.1 Introduction

There continues to be significant emphasis in Ireland on the number of premature deaths as a result of smoking behaviours (Strinhini et al., 2011; Office of Tobacco Control, 2013; WHO, 2013). A staggering ten quality years of lives can be lost from smoking. In Ireland, it is estimated that smoking accounts for 6,500 deaths per year (Tobacco Control Framework, 2010). Evidence suggests that low SES is a determinant of poorer health. Thus, the number of deaths due to smoking is skewed towards low SES areas (Jha, Peto & Zatonski, 2006). The population of Ireland is categorised accordingly to SES, based on level of education, skill, and occupation. Occupation is filtered down further into social class, which ranges from the high end of the scale- social class 1 (SC-1), to the bottom end of the scale- social class 7 (SC-7) (Central Statistics Office, 2011). Even with decades of public health interventions addressing smoking, it is estimated that 22% of the population of Ireland across all social classes smoke daily (Office of Tobacco Control, 2013). It is well documented that the majority of the population (87%) acknowledge that smokers die younger. However, SES differentials in processing the health risks of smoking exist across social groups (Layte & Whelan, 2009). As a result of this, and perhaps other factors which will be discussed later, smoking prevalence is highest among SC-6 (34.3%) as compared to SC- 1 and 2 at 14.8% (Office of Tobacco Control, 2013).

Unhealthy behavioural trends follow patterns governed by society-unequal opportunities, material constraints, and lack of knowledge in considering health interventions can determine whether or not lower social class groups adopt healthy lifestyles (Chinn, 1999; Macintyre, 2000; Townsend, 1982). It has been argued by researchers that higher risky behaviours within lower SES does not alone account for higher mortality rates. Socioeconomic differentials in mortality are a result of multiple factors that will be addressed later in this discussion (Lantz et al. 1998). Link and Phelan (1995) suggest that if disparities in health behaviours fail to exist, little would change in the relationship between SES and health, as other sources of disparities would develop in importance. The research to date has tended to focus on individual risk factors for smoking, rather than environmental risk factors (Twigg & Cooper, 2009; Pearse, Barnett & Moon, 2012). Socio-economic settings can produce fundamental health behaviours that influence smoking (Cockerham, 2005). Social determinants effect environmental settings, and as a result can lead to different SES areas being exposed to damaging environmental conditions. Social factors created by a person's position in society are the main causes of health disparities that exist within SES areas (WHO, 2007). Health

behaviours are influenced by mechanisms working at several different levels, that include; personal, social, and environmental factors (Sallis, 2008; Trost, 2002). The aim of this study is to examine how different environmental settings influence smoking prevalence, behaviours, and attitudes.

Chapter 2

Literature

Review

Literature Review

2.1 Socioeconomic Status and Health

It is well documented that low SES is related to poor health (Bobak, 2000; Mokdad, 2004). Education, occupation and income are measures of SES and can influence health behaviours (Alder & Newman, 2002; Siegrist & Marmot, 2004). Education in early years enables future occupational prospects and potential earnings, thus providing knowledge, life skills, access and resources to information to improve health (Schnittker, 2004). Income can represent a level of distinction and provides in paying for health towards health insurance and health care (Kristenson, 2004). Occupation is often referred to as the link that bridges education and income. Occupation has the potential to affect health status through direct and indirect ways, to dangerous job exposures and health behaviours (Barbeau, Kreiger & Soobader, 2004). Most recent figures from the Irish Censuses (2011) show unemployment in Ireland to be at 19%. Unemployment in Waterford was 24.4%.

Marmot (2001) claims that low SES, referring to poverty, is more multifaceted than just money. Money by itself does not determine poor health. Income may have a direct impact on social participation and in controlling life stressors which are important for health outcomes. Inactive social involvement can manifest into isolation, and it is well highlighted that isolation can lead to poor health (Marmot, 2003). Social inequality refers to differences between higher and lower social class, but also social gradient. Positioning in this social ladder is related to mortality risk (Siegrist & Marmot, 2004).

Jha, Peto & Zatonski (2006) examined a number of studies across England, Wales, Poland and North America. They utilised secondary data of death rates and examined the relationship between mortality and smoking status across different social classes. Deaths due to lung cancer and other classified disease were recorded from males aged 35-69 years. In total 564, 626 death rates from social strata high, medium, and low were recorded. It was found that social class 5 (low) accounted for 19% of deaths due to smoking compare to 4% in social class 1 and 2 (high). Areas of high income witnessed fewer deaths (6%), as compared to areas of lower income at 13%. In measuring death rates across educational levels, a difference of 6% was found between the highest and lowest strata.

2.2 Measurement of SES

2.2.1 Grouping the Population

In the Irish census, the entire population of Ireland is classified according to socio-economic status, which is made up of a ten tier schema based on level of education, skill, and occupation (working, unemployed or retired). The socio-economic groups used in the census are as follows:

A- Employers and managers, B- Higher professional, C- Lower professional, D- Non-manual, E- Manual skilled, F- Semi-skilled, G- Unskilled, H- Own account workers, I-Farmers, J- Agricultural workers, and Z- All others gainfully occupied and unknown (CSO, 2011).

Figure 1 Indicates that socio-economic group (non-manual) has the largest amount of workers (20%), with agricultural workers having the lowest at less than 1% (CSO, 2011).

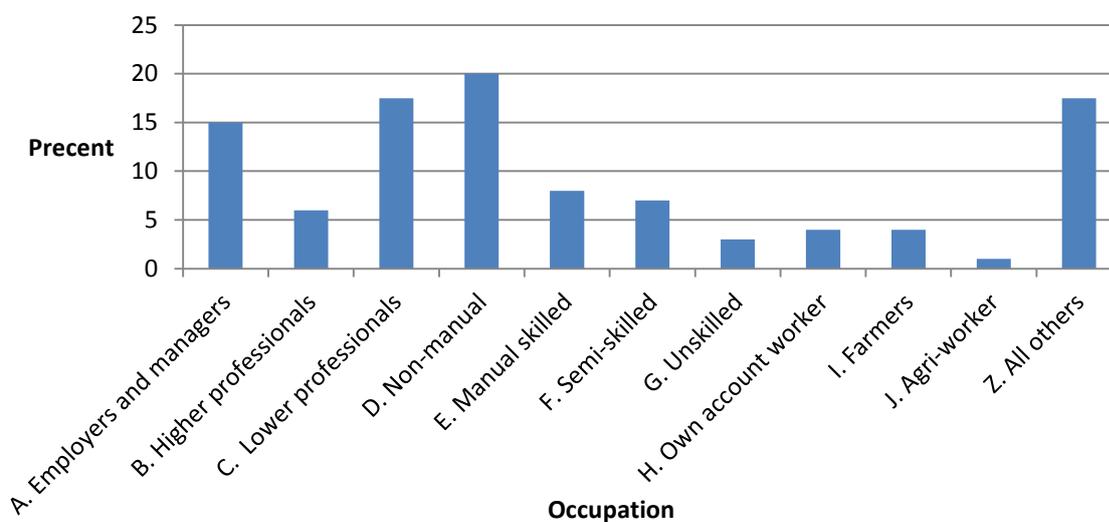


Fig 1 Percentage of the population per socio-economic grouping

Thus, socioeconomic status is determined primarily by occupation (introduced in 1996). Occupation is broken down further into a seven tier categorised system from social class 1 (SC-1) at the higher end of scale to social class 7 (SC-7) at the bottom. The groups have been selected in order to have similar levels of occupational skills together. Educational skills are

excluded from the schema. Six of the categories are occupational and employment based, with a residual category “Others”.

SC-1 Professional workers, SC-2 Managerial and technical, SC-3 Non-manual, SC-4 Skilled manual, SC-5 Semi-skilled, SC-6 Unskilled, SC-7 All others gainfully occupied and unknown (CSO, 2011).

Figure 2 shows that 28% are categorised in a managerial or technical role social class 2 (SC-2). SC- 6 has the lowest percentage of people at 5%.

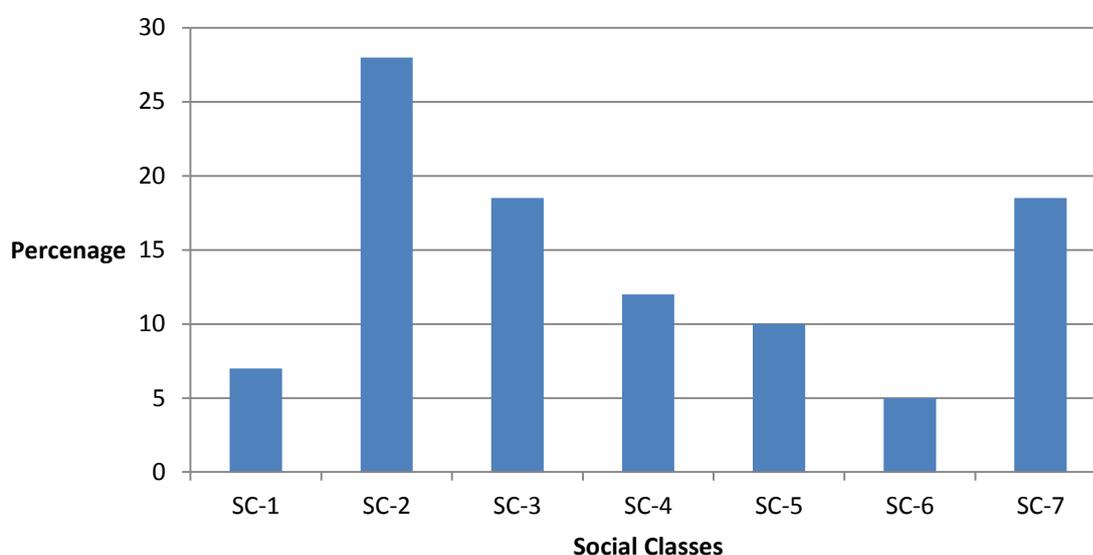


Fig 2 Percentile of the population per social classification

2.3 SES differentials in smoking in Ireland

2.3.1 Social Class differentials in Smoking

Despite almost 60 years of research on smoking and at least 35 years of public health awareness and education on the consequences of smoking, a substantial proportion of the population still smoke. The latest figures from the Office of Tobacco Control (2013) suggest that in Ireland around one fifth (22%) of the population will smoke daily. In contrast the OECD (2013) found Ireland to have the fourth highest smoking rate in Europe at 29%. A possible explanation for the 7% difference in statistics is that the OECD accounted for smokers aged 15 years and greater, whereas the OTC included those 18 years and above. The explanation into smoking is complex. Smoking is an individual choice made regardless of the

information of the dangers, but this information may not be processed the same across social groups (Layte & Whelan, 2009).

A study completed in Ireland by MRBI/THS in 2002 (cited in Layte & Whelan) of 1,000 adults was carried out by means of telephone survey. The poll has stringent demographic controls in order to have a true representation of the population. The study found that the majority of the population (87%) agreed that smokers die younger due to smoking and of that only 45% of smokers agreed. Professional and managerial groups agreed strongly with the statement (65%) and 47% among smokers, compared to 60% of unskilled manual workers. Although, the unskilled class had a higher proportion of older people, and age had an influence on the results, the data still suggests that 72% under 25 years in the higher social group agreed strongly compared to 65% in the unskilled manual group. The study also highlighted that 86% of smokers reported cigarettes to be addictive and the majority (90%) associated smoking with relaxing and calming. Reviewing this context, many individuals' who chose to continue smoking, view the benefits of smoking to be greater than the risks and costs of quitting (Layte & Whelan, 2009).

2.3.2 Social Structure and Risk Perception

An understanding of the socio-economic structures in which an individual decides to smoke and persists in smoking helps explain SES differences in smoking. Like other forms of health behaviours, smoking needs to be addressed in and alongside social and economic settings, to ensure a better understanding of smoking and differences in smoking between social groups (Layte & Whelan, 2009).

Chamberlin & O' Neill (1998) completed a qualitative study of fifteen higher SES smokers and fifteen lower SES smokers in New Zealand. The study examined perceptions and understandings of smoking, through semi-structured open ended interviews. The interviews were coded and themed. The results found substantial differences between the groups. Lower SES smokers viewed health in terms of being able to work, had lower expectations of health and experienced greater pressure towards unhealthy behaviours. The higher SES smokers were more likely to see health in a holistic manner and have a sense of overall well-being. The ability to have a holistic view of health and illness may contribute to the differences between social groups.

Differences in levels of education may also have an impact on smoking behaviour. Professional and managerial occupations usually involve a higher level education and qualification. Incorporating high levels of knowledge and education- results in higher levels of intellectual thinking and more emphasis on future issues, and this may have an impact on the differences in social class (Backlund, 1999; Mirowsky, 1998).

2.4 Prevalence of smoking in different SES groups

In Ireland the most up to date longitudinal study conducted in the area of lifestyle and health behaviour, SLAN, 2007 (Brugha et al., 2009) estimated that almost 940,000 (20%) of Irish adult's smoke. The study found that 29% of these were current smokers (31% were men, 27% of women). Smoking rates among younger people were highest at (35%) in those aged 18-29 years, compared to 25% of those in the age group 45-46 years. Smoking disparities were found between social classes 5-6 (37%) as compared to social group 1-2 (24%). Statistics from the HBSC, 2006 (Nic Gabhainn, Kelly, and Molcho, 2007) found that 15% of 10-17 age group smoke. Smoking among girls aged 12-14 was higher (11.3%) compared to boys (9.3%). Equally in the 15-17 age groups, girls reported higher smoking rates than boys at 27.3% and 21% respectively.

Figure 3 indicates that smoking rates have fallen in Ireland by 7% from 2007. Prevalence has also decreased among males (7.5%) and females (3.5%).

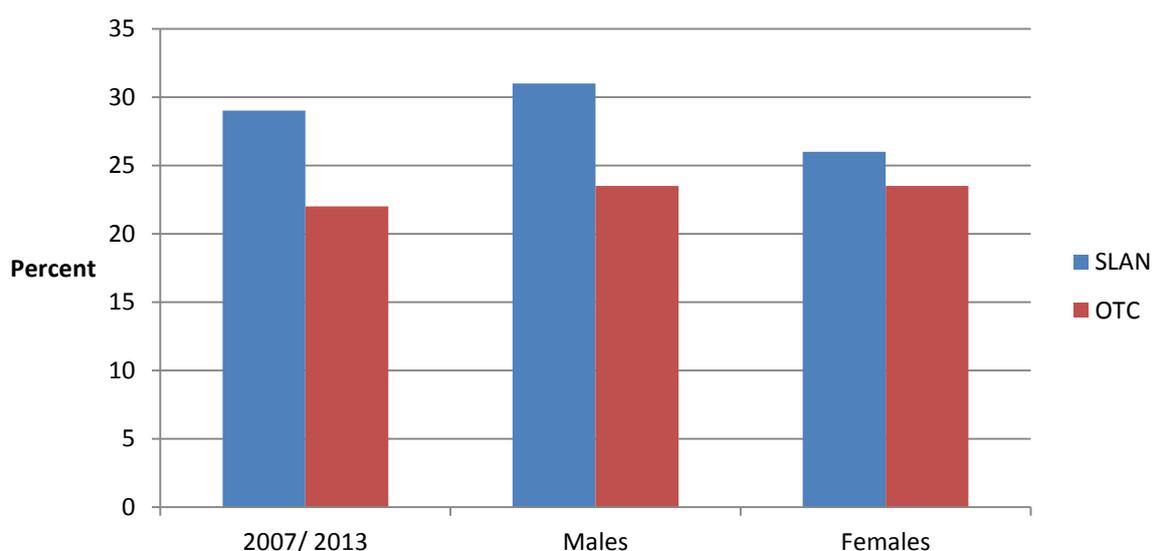


Fig 3 show sex differences in smoking prevalence from SLAN, 2007 and OTC, 2013

Smoking rates were highest among the lower social class groups 5-6, with group 6 accounting for 34.3% of the smoking population. The lowest prevalence rate was found within groups 1-2 at 14.8%. A report from Waterford Healthy Cities (2011) found that 28% of the population are current smokers (6% above national average), with higher rates among lower social group (32%) compared to the highest social group (20%).

Barbeau, Kreiger and Soobader (2004) examined the burden of smoking in the United States using SES indicators. Data were drawn from a 2000 cross-sectional National Household Interview Survey made up of non-institutionalised populations. A total of 100,618 persons from 38,633 sampled households were interviewed face to face or computer assisted. Higher smoking prevalence is associated with low education and low income. Results showed that 39% of those aged 24 years and above with no college diploma- smoke, in contrast to 12.5% of those with a college degree. Those with the highest level of income are less likely to smoke (20%) compared to the least well off (35%).

2.5 How important are health behaviours in determining health status in different social class groups?

Lifestyle related health behaviours have a major influence on the distribution of health and disease within populations (Byberg et al., 2009; Khaw, 2008). Unhealthy behaviours more often follow societal patterns; material constraints, unequal opportunities, and lack of knowledge in processing health promoting messages can impede lower social groups from adopting a healthy lifestyle (Chinn, 1999; Macintyre, 2000; Townsend, 1982). However, the extent to which health behaviours impact social inequalities still remains unclear (Kaplan, 1993; Lynch, 2006), as results vary hugely across studies (Laaksonen, 2008; Stringhini, 2010). Lantz et al. (1998) discarded claims that increased mortality risks in lower social groups stem from higher rates of risky behaviours among these groups. In controlling for drinking, smoking, inactivity and body weight, it has been found during a 7.5 year period that the mortality odds ratio between the lowest and highest education group reduces by only 14%, thus, SES differences involve more than health behaviours such as smoking, drinking, and inactivity.

Link and Phelan (1995) imply that if the disparity in health behaviours across the SES classification were removed, little would change, as other causes of disparities would develop in turn. Socio-economic environments can create primary health behaviours that enable smoking (Cockerham, 2005). According to the WHO (2007), social determinants influence environmental conditions and can contribute to different social groups being more often exposed to damaging environmental conditions. Evidence suggests that social factors, which are created by a person's place in society, account for the majority of health disparities that exist between communities and countries. Health behaviours are influenced by mechanisms working at several levels that include personal, social, and environmental factors (Sallis, 2008; Trost, 2002).

A follow-up study by Strinini et al, (2011) incorporated participants from both Whitehall II study (n=9,771) and the GAZEL study (n=17,760) to examine health behaviours and health status across SES groups. Smokers in the Whitehall II and GAZEL study of lower social class had a 2.38 and 2.10 times greater risk for all cause mortalities compared to those of higher social class. Those in lower occupational position in the Whitehall II study and GAZEL study were more likely to smoke with a risk ratios of 3.67 and 1.13 respectfully.

2.6 Mechanisms that affect the relationship between SES and Smoking

2.6.1 Personal

2.6.1.1 Peer, parent and media influences

A study to examine the link between peer smoking, smoking at home and media exposure during adolescence was carried out by Villanti, Boulay and Juon (2011) of fifty states in the USA. A total of 22,111 middle-high school students aged 10-17 were include. Those over 18 years were excluded due to being the legal age to purchase cigarettes. The administration of The National Youth Tobacco Survey was used in collecting data. The results point out that peer smoking and smoking at home- play a direct role in current smoking behaviour, with peer influence decreasing during late adolescence. Increased exposure to tobacco-related media had a significant impact to smoking prevalence among adolescence.

2.6.1.2 Motivation

Motivation provides the initial stimulus in deciding to quit (West, 2004). Motivation includes- desire, intention and duty (Smit, Fidler, & West, 2011). Smokers of lower social class may not have these aspects of motivation (Reid, Hammond, & Boudreau, 2010), directly affecting their quit chances. A longitudinal study completed in England which included a national representative sample of smokers was conducted by Smit et al. (2011). Smokers were assessed at base-line (n=5593), three (n=1263) and six (n=1096) months. Base-line assessment was carried out via face to face computer interviews, with follow-up data collected via postal surveys. The study found that smokers acknowledged they should quit, but did not want or intend to. Positive predictors in quit attempts are found to be desire and intention, while duty had a moderate effect. Smokers of lower SES are more likely to be worried in relation to present matters rather than future matters (Jones, Landes, & Fi, 2009) thus, making present health issues more likely to result in quit efforts among lower social groups (Pisinger, Aadahl, Toft, & Jorgensen, 2011; Fidler, Jarvis, Mindell, & West, 2008). Future orientated health issues are more common among higher social groups (Fidler, Jarvis, Mindell, & West, 2008).

2.6.1.3 Psychological

Smokers of lower SES experience higher levels of stress and depression, acting as a basis to relapse compared to smokers of high SES (Lomas, Al-Khairalla, & Winter, 2008; Pisinger, Aadahl, Toft, & Jorgensen, 2011). This is reflected through the work and home environment. Greater levels of boredom, stressful living conditions both inside the home and within the community, as a result, emphasis is placed on present issues rather than smoking cessation (Businelle, Kendzer, & Reitzel, 2010). Smoking in these conditions can act as a coping tool (Tsourto & O'Dwyer, 2008). Stress and living conditions can affect a persons' self-efficacy and self-control, which in turn can impede one's confidence towards quitting and overturning the barriers that face them (David, Esson, Perucic, & Fitzpatrick, 2010; Businelle, Kendzer, & Reitzel, 2010; & Young, Borland, & Hammond, 2006), which in turn can increase desire to smoke (Kassel et al, 2007; Manfredi et al, 2007; & Shiffman & Waters, 2004). Higher

confidence towards smoking cessation was found in those with higher education levels (Droomers, Schrijvers, & Mackenbach, 2004).

2.6.2 Social

2.6.2.1 Social support

Social support was found to have the greatest positive influence on quit attempts (Gulliver, Hughes, Solomon, & Dey, 1995) and in reducing the negative effects of stress (Berkman, Glass, Brissette, & Seeman, 2000; Schulz et al, 2006). The aid of a supportive colleague in cessation programs has been found to be beneficial (Bauld et al, 2007; Picardi, 2002). Evidence suggests that low SES is linked to lower participation and social support (Delva, et al, 2006), potentially reducing the chances of quitting. Where support is on hand, higher cessation rates may be achieved (Nollen, Catlin, & Davies, 2005). Furthermore, areas of low SES, often where smoking is considered the norm, initiating smoking may add to one's social network and strengthen bonds (David, Esson, Perucic, & Fitzpatrick, 2010; Paul et al, 2010), having an opposing effect.

2.6.2.2 Social Norms

'Social norms' at a community level can include shared behavioural cultures and norms, potentially influencing smoking. Such norms in highly disadvantaged communities continue to support current smoking rates, while middle-high income regions generally encourage smoking cessation due to the social values of that area, with emphasis on stigmatization (Curry, 1993). Smith et al, (2007) carried out a study in the USA where high levels of smoking among African-American communities existed. The findings revealed that buying single cigarettes were part of the norm within the community, which contributed to the smoking prevalence. Thompson et al. (2007) carried out an investigation to understand how social norms, practices can isolate and promote smoking. Researchers interviewed residents from a disadvantaged area of Christchurch, New Zealand. Areas of 'smoke islands' became apparent due to rates of smoking dropping more rapidly in affluent areas. All residents', smokers and non-smokers became increasingly isolated and faced a dual of stigmatization of substance abuse and social deprivation. Isolation or being classed as an outsider could potentially cause resistance in people to heeding public health campaigns (Poland, 2000).

2.6.3 Environmental (settings, neighbourhoods and policies)

Health behaviours such as smoking, diet, drinking and physical activity are mainly linked to individual risk factors; previously, there has been little investigation into how place and layout can act as a ‘determinant’ to health (Twigg and Cooper, 2009; Pearse, Barnett & Moon, 2012). Environmental aspects of human behaviour gained extensive interest in the 60s and 70s in relation to behavioural geographical crime, education and voting achievement (Herbert and Thomas, 1998; Johnston et al, 2000; Pain, 1997). It has long been recognised by both sociologists and urban geographers that environmental factors influence individual livelihoods and prospects (Diez Rouz, 2001; Leyton, 2003).

Neighbourhoods can also act as a passageway in determining smoking behaviour. Research dating back to 1942 has found that people living in areas of crime, stress and disorder can use smoking as a response mechanism in temporarily resolving situations (Shaw and McKay, 1942). In Finland, crime rates and smoking were found to be directly linked; areas high in crime were also areas more likely to have higher numbers of current smokers (Blackman, 2008; Virtanen et al, 2007). A measure of physical neighbourhood disorder (graffiti, litter and broken windows) and smoking was completed by Miles (2006). The study reported that areas with high levels of environmental disorder were also areas with elevated rates of smoking. Stress plays a key role within neighbourhood disorder, affecting communities and individuals.

Restrictions on the accessibility of tobacco products are a method in which regulation can influence smoking behaviour (Pearse et al., 2009). Many passageways actually link the local availability of tobacco to an individual’s smoking behaviour. Easy access of tobacco retailers gives a chance to obtain tobacco, easier contact may affect consumption. The amount of outlets that supply tobacco, can add to temptation in the pathway of possible quitters (Novak et al., 2006; Ogneva-himmelberger et al., 2010; Yerger, 2007). The availability of tobacco and tobacco retailers are favourably placed in more socially disadvantaged areas where smoking prevalence is greater (Hyland et al, 2003).

A study conducted by Novak et al. (2006) found a positive link between an areas access to tobacco outlets and smoking patterns. Participants (n=2,116) aged 11-23 years were selected

from a random sample of 80 neighbourhoods obtained from the census tract of Chicago. Post consent, trained interviewers gathered data from participants. It was found that neighbours with the highest concentrate of tobacco outlets, were 21% more inclined to have current smokers compared to areas of lesser density in tobacco outlets. Areas dense in tobacco outlets had a greater number of smokers (13%) in the previous month. This mirrors the findings of Henriksen (2008), where there was a higher prevalence of smoking among school students and areas of dense tobacco retailing outlets.

2.6.3.1 Social Capital

‘Social capital’ is a term widely used in health promotion and describes how communities link, bridge, and bond (Jones, 2011; Hanks, 2008). It is the cohesion that strengthens communities and has been recognised as core in knowing the health initiations and outcomes which include smoking. Social capital may improve or reduce smoking behaviour (Carpiano, 2007; Pearse, 2012). Various studies have used different measures in linking social capital and smoking, and found that areas of reported low social cohesion had a direct link to higher levels of reported smoking (Karyonen, 2008; & Poortinga, 2006).

Lindstrom (2003) drew data from a cross-sectional study of the 2000 public health survey in Sweden (n=13,715). The data was analysed to examine the relationship between social capital variables and daily/ intermittent smoking. Daily smoking within communities of southern Sweden are related to low levels of civic trust and participation. Intermittent smoking was a positive factor in social participation, but was negatively associated with trust. Cohesion, civic trust and participation are associated with lower levels of smoking and higher cessation rates.

2.6.3.2 Regulation and policies

Political involvement and decision making can assist the ties and prospects of communities and as a result have an impact on smoking behaviour. Both regulating areas in which people can smoke, and the sales and, - advertising of tobacco can encourage behavioural responses (Pearse, 2012). During the 1940s, Adolf Hitler created the first modern nationwide smoking ban and prohibited smoking in public offices, universities and military hospitals (Henningfield, 1985). However, in more recent times, Ireland has paved the way in reviewing smoking regulation and polices. In May 2002, the Office of Tobacco Control (OTC) was established and made recommendations for a complete ban on tobacco use in the workplace,

including public bars. In March 2004, the smoking ban was endorsed, making Ireland the first country to do so nationwide (Mulcahy et al, 2005; Mc Nabola, 2006). In light of recommendations from the OTC, in June 2009, Ireland became the first European country to ban the advertising of tobacco in retail outlets. While many policies have been set up to reduce exposure to second hand smoke, adherence to the smoking ban may not be obeyed the same across different social groups (Wakefield et al, 2000). Due to the higher smoking prevalence among socially deprived people, this group are potentially exposed to higher amounts of second hand smoke, due to smoking being more common within the environments in which they work and reside (David, Esson, Perucic & Fitzpatrick. 2010).

However, with the implementation of the smoking ban many studies suggest a significant improvement in exposure to smoke and air quality of workplaces and public houses (Akhtar, 2010; Main, 2008). A study of nine pubs carried out in Galway both pre and post implementation of the smoking ban found a reduction in pollution concentrates (PM 2.5, PM 10) to have decreased up to 96% and 76% respectively (Mulcahy, 2005). A further study completed by Mc Nabola (2006) of two pubs in Dublin, found a reduction in both benzene and butadiene concentrates of 91% and 95% respectfully, both pollutants were found to have poor effects on human health (Hughes, Meek, Walker & Beauchamp, 2001; WHO, 2000).

Other policy methods that potentially shape the characteristics of smoking include community based smoking cessation programmes. Smoking cessation programmes provided to disadvantaged areas can have success, however, sustainable quit rates among this cohort is poorer towards more affluent groups (Hiscock et al, 2009; Bauld, 2007).

Hiscock, Judge and Bauld (2010) examined secondary data from NHS smoking cessation programs across Nottingham, North Cumbria and Glasgow. The study was restricted to 2,397 participants between the ages of 25-59; SES indicators were accounted for, along with Carbon monoxide validation at follow-up. Both group and one-one session were provided along with nicotine replacement therapy (a small fee needed). Results show at follow-up that areas of more affluence smokers had higher rates of cessation. Continuous cessation was greater in England (14%) compared to Glasgow (3%). England also had a higher cessation rate among those in 4-5 social categories. Disadvantaged smokers even with the availability of smoking interventions are less likely to quit compare to those in affluent areas.

Summary and Rationale

The literature review has indicated how different environmental settings influence smoking prevalence, behaviours, and attitudes. No single factor accounts for higher mortality, morbidity and smoking rates among lower SES groups (Frohlich, 2002; Pearse, 2012). The most obvious finding to emerge from these studies is that smoking is significantly higher in lower SES areas, and smoking messages may not be processed uniformly across social groups (Layte & Whelan, 2009). Lower SES smokers had different expectations of health, are often more exposed to tobacco related harms within the environment they live, and are less successful in quit attempts, as compared to higher SES smokers. In general, it seems that living in lower SES areas is a risk factor to smoking, so addressing individual behavioural change is less likely to be successful unless the social environment is also changed.

Rationale for Study

- Smoking is a major public health challenge and mortality and morbidity rates due to smoking are preventable (WHO, 2013).
- Smoking prevalence in Waterford City is 6% above the national average (WHC, 2011) and it is envisaged the study may further highlight areas that may need to be addressed.

Research Questions

- Is smoking prevalence different in different areas of Waterford?
- Is the uptake of smoking cessation programs greater in a high SES area, compared to a lower SES area?
- Are voluntary smoking bans (i.e. at home) more prevalent in higher SES areas?
- Is there a difference in people's attitudes to smoking in low v's high SES area?
- Is there a difference in the factors that influence smoking status in low v's high SES area?
- Are cigarettes more readily available in low v's high SES areas in Waterford?
- Are public locations in the low SES area more smoking enabling than those in high SES areas?

Chapter 3

Methodology

3. Methodology

3.1 Research Design

In order to address the research questions, two parts were needed within the research design. The two methods utilized were a survey and a situational analysis.

Survey

A cross-sectional study design was chosen. Convenience (non-probability) sampling was utilised in two selected areas known to be areas of different SES and these are described below. An attempt was made to select participants without bias. The researcher approached every third or fourth adult male and female that were entering or exiting the locations. The researcher then administered the questionnaires to the participants. Due to the lower SES area in which the surveys were being administered, it was decided to take a researcher administered approach with the surveys in order to overcome any possible communication issues (i.e. literacy problems) that may affect results. Previous research has shown that face-to-face surveys were found to achieve higher response rates (Bowling, 2005). The study design was used to compare two areas different in SES, at one point in time.

Situational analysis

Sale points in each vicinity.

- Are areas of lower SES denser in tobacco outlets?
- Are cigarette machines in pubs located behind the counter, or in view of staff- i.e. what is the case of access for under-age smokers?
- Are E-cigarettes on display for sale?

Designated areas for smoking.

Data will be collected in relation to-

- Where are people smoking, are people smoking in doorways of pubs?
- Are these designated areas with signage?
- Do pubs have actual smoking areas?

Data was measured in relation the quality, quantity and visibility of signage. The same variables were measured for smoking areas, along with seating. Both signage and smoking areas were rated using a Likert scale- very poor, poor, acceptable, good, and very good.

3.2 Population and sample strategy

Population: The study population included 100 adults from two different SES areas within Waterford City.

Sample strategy: A shopping centre in each of the two SES areas was chosen. These locations were chosen due to large footfall. Firstly, two areas of Waterford were chosen in relation to SES status. The first area was Lisduggan Shopping Centre (low SES area) and the second was Ardkeen Stores (high SES area). Both studies were completed on Thursday the 2nd and Friday the 10th of January. Lisduggan and Ardkeen are identified as areas of different SES in reference with (Pobal, 2012). The areas of different SES were measured using the Pobal HP Deprivation Index (2012), which is a tool of measuring the relative affluence or disadvantage of an area using data from previous censuses. These locations were chosen in reference with Pobal (2012) areas of different SES classification. The measurement of classification was obtained from the following categories;

- Population Change (percentage increase from the past five years)
- Age Dependency
- Ratio Lone Parent Ratio
- Primary Education Only
- Third Level Education
- Unemployment Rate (male and female)
- Proportion living in local authority rented housing (Pobal, 2012).

Characteristics of Lisduggan/Larchville Area (Waterford)

- Population- 4,531 (9.7% of Waterford City's population)
- 30% of the population are aged 65 years and over
- 19% of the population have a disability (Waterford Age Friendly, 2013)
- Extremely disadvantaged area
- Area of population decline
- Lone parent rate- 60.9%
- Number of residents with primary education only- 41%
- Number of residents with third level education- 7.1%
- Second highest level of local authority housing-32% (Hasse & Pratsche, 2008)

3.3 Data collection

Data was collected on;

- Smoking prevalence
- Smoking behaviours and attitudes
- Tobacco enabling environments

The questionnaire was a modified version of The International Tobacco Control Ireland and UK survey as cited in (Fong et al. 2006), a national cohort telephone survey of adults (> 18 years) in Ireland (n = 769) and The UK (n = 416). The survey was deemed valid and reliable as it was used in 30 different countries, to address areas weak in tobacco control policy. The questionnaire consisted of three sections:

- General information
- Smoking status
- Attitudes and behaviours around smoking

The majority of the questions in the survey were closed, in order to achieve a clear and concise answer. In order to obtain approval to administer the survey, primary contact was made with the management of both shopping centres (Lisduggan and Ardkeen). Upon receiving the go head from my supervisor and the management of both shopping centres, the researcher then administrated the surveys. Prior to completing the surveys, the participants were briefed in relation to informed consent (see 3.8). The researcher provided a box of Celebration sweets in each location in order in entice participation.

Situational analysis

A situational analysis was conducted by the researcher in both areas. This observation enabled the researcher to answer questions that could not be attained from the questionnaire. Data was then collected in relation to a tobacco enabling environment;

- Sale points in each vicinity.
- Designated areas for smoking.
- Signage

3.4 Pilot Study

Prior to dispensing the questionnaires a pilot study was initiated to six residents, 3 from both low and high SES areas. This ensured the questionnaire to be appropriate for the populations,

in that people could understand what of the questions was being asked, and also to calculate the length of time it would take to complete. The survey took two minutes to complete. No issues were found with the questionnaire.

3.5 Data Analysis

Surveys were inputted into the Statistical Analysis Package for Social Sciences (SPSS).

Descriptive statistics were carried out for all the demographic variables using frequencies.

RQ1. A comparative analysis of smoking prevalence (DV) across SES groups (IV) was assessed using Crosstabs (both categorical). Significance was assessed using a non-parametric test (Chi square test for differences, as the DV was nominal).

RQ2. A comparison of SES groups (IV) across the uptake of smoking cessation programs (DV) was analysed using Crosstabs.

RQ3. A comparison of voluntary smoking bans (DV) across SES groups was assessed using Crosstabs. Chi square was used to assess significance. The variables from the DV were collapsed into either 'Yes' or 'No'.

RQ4. Descriptive statistics were carried out for attitudes to the smoking ban using frequencies. A comparison of the groups (IV) across attitudes to the smoking ban (DV) was assessed using Crosstabs. Significance was assessed using non-parametric test (Chi square test) both categorical. Participant's attitudes were further broken down into 'Agree' or 'Disagree'.

RQ5. A comparison of factors that influence smoking (DV) was assessed using Crosstabs and Chi square test for significance.

Situational analysis for RQ5 & RQ6 was assessed using descriptive statistics.

3.7 Ethical Considerations

The method and procedure of data collection will be authorised by the dissertation supervisor. In this study participants' will be told about the aim, method, potential benefits and hazards'

of the research. Privacy, confidentiality and rights will be given the upmost respect. Participants will not need to give their name and there will be no follow-up, making anonymity easier. Only age will be required and this will not be enough to know their identity. The participants have the right not to continue in the study at any time. The researcher will assure participants' that only the supervisor and researcher will have access to the information. All the information that will be taken from the participant's will be destroyed post completion of the study.

3.8 Informed consent

The researcher, Davin Power an undergraduate Health Promotion student of WIT, is examining smoking prevalence in Waterford as part of a 4th year dissertation. If you would like to take part in the study, your participation will be anonymous and confidential. The questionnaire should only take 5 minutes to complete and there is no follow-up. In completing the questionnaire, you are agreeing to take part in the study. If you have any further inquiries you can contact my supervisor at Niamh Murphy@WIT.ie.

Chapter 4

Results

4.1 Characteristics of participants from a low and high SES area of Waterford City.

Table 1 illustrates a higher number of females compared to males in the low SES (62%) and high SES areas (59%) participated in the study, with the majority (63% and 75%) respectively in the 41+ year's category. Attendance in third level education in the high SES area is almost double (62%) of that in the low SES area (32%) in comparison to the average of Waterford County (27.2%). Unemployment in the low SES area was 12 % higher than that of the high SES area; however the unemployment rate was 8.4% lower than the average in Waterford (24.4%) as discussed in the literature review. A small proportion of participants in the low SES area (3%) compared to 21% in the high SES area described their employment status as manager/ professional.

Table 1 *Characteristics of Participants from the low and high SES areas*

	Low SES area n= 100 (%)	High SES area n=100 (%)
Sex		
Male	38	41
Female	62	59
Age Group (years)		
<40	37	25
41+	63	75
Highest level of Education		
Primary	21	7
Secondary	44	31
Tertiary	34	62
None	1	
Employment status		
Retired	27	29
Student	7	5
Work at home	11	5
Unemployed	16	4
General worker	19	17
Factory worker	2	3
Farmer	1	0
Skilled worker	13	16
Manager/professional	3	21

4.2 Research Question 1

Is smoking prevalence different in different areas of Waterford?

Table 2 shows that a higher number of participants smoked in the low SES area (38%) compared to those in the high SES area (13%), with an overall smoking prevalence of 25.5%. Using a Chi-square test, there was a significant difference in smoking prevalence between the areas ($p < .05$).

Table 2 Smoking prevalence between low and high SES areas

Do you smoke?	Low SES area n=100 %	High SES area n=100 %
Yes	38*	13
No	62	87

* $p < .05$ Low v High SES area

4.3 Research Question 2

Is the uptake of smoking cessation programs greater in a high SES area, compared to a lower SES area?

Figure 4 highlights a greater percentage of respondents from the low SES area (15%) in contrast to the high SES area (7%) attended a smoking cessation program. This is not surprising given that fewer people smoke in the high SES area. Using a Chi-square test there was no significant difference in the uptake of smoking cessation programs between the high and lower SES areas.

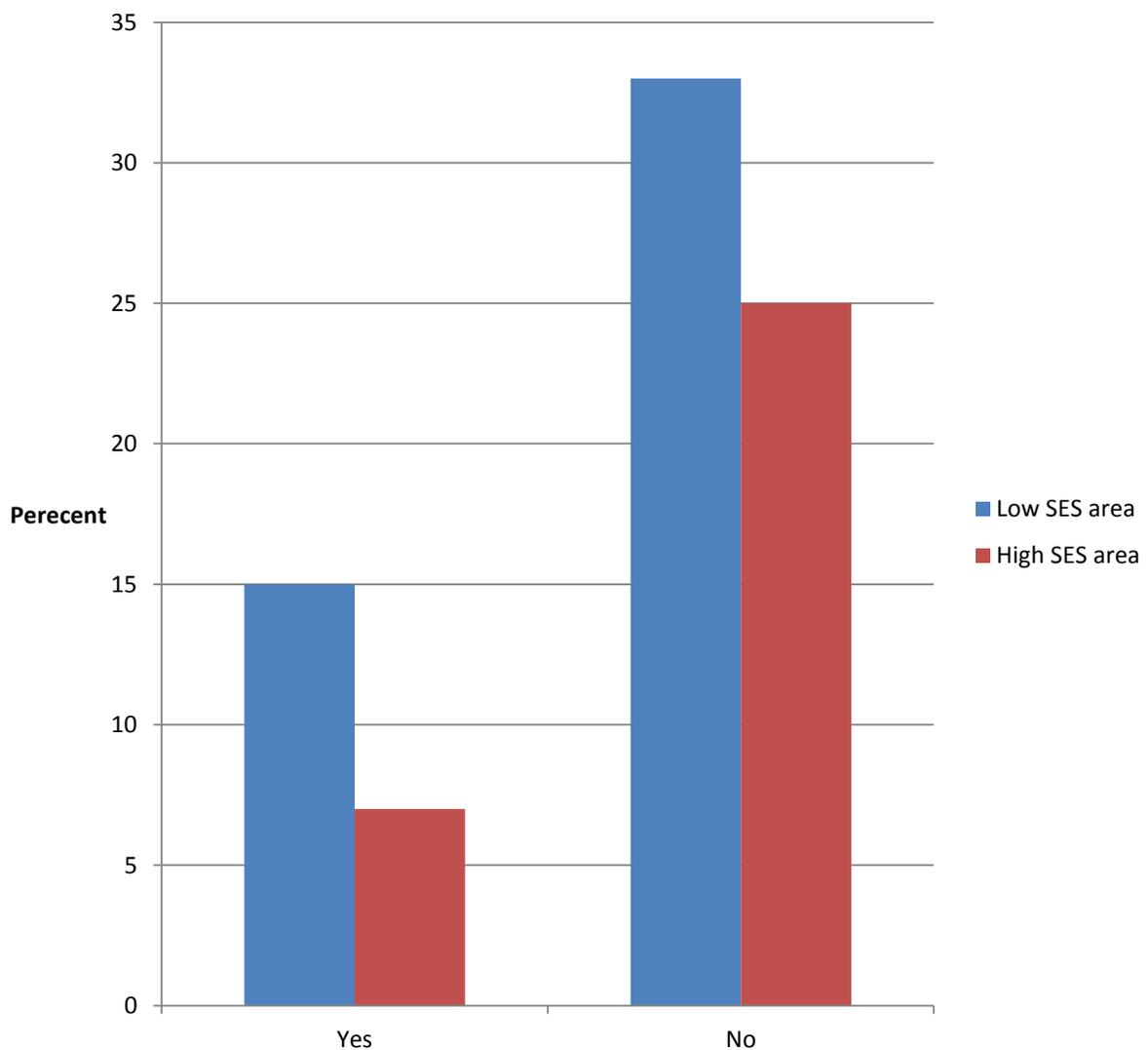


Figure 4 uptake of smoking cessation programs

4.4 Research Question 3

Are voluntary smoking bans (i.e. at home) more prevalent in higher SES areas?

Figure 5 is voluntary smoking bans (i.e. at home) more prevalent in higher SES areas? The majority of participants in the low (65%) and high SES areas (68%) would never allow people smoke in their homes. A smaller proportion (17% and 20%) respectively allowed people to smoke on occasions in their home, while 18% of participants in the low compared to 12% in the high SES area regularly allowed smoking in the home. Differences between the two areas were not statistically significant. More smokers (n=32, 63%) compared to non-smokers (n=19, 37%) allowed smoking in their home ($p < .05$).

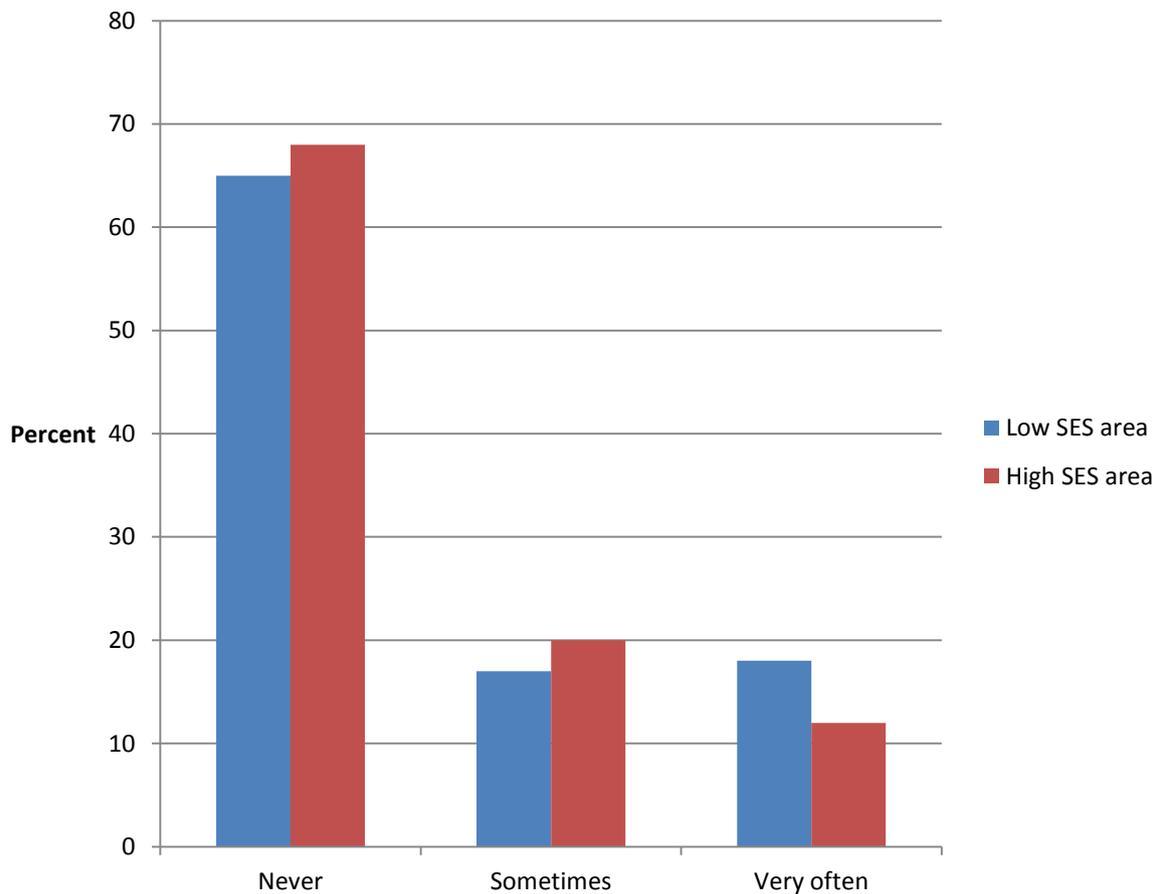


Figure 5 percentage of voluntary smoking bans in different SES areas

4.5 Research Question 4

Is there a difference in people's attitudes to smoking in low versus high SES area?

Table 3 reports the attitudes of participants to smoking. Overall, the majority of participants from the low (91%) and high SES areas (96%) agreed with the existence of the smoking ban, and also agreed that society disapproves of smoking (93% and 85%). There is no significant difference between people's attitudes to smoking in low v's high SES area, ($p > .05$) in all cases. However there was a significant difference in attitudes between smokers and non-smokers. More than a fifth of smokers (22%; $n=11$) disagreed with the ban, which was significant to non-smokers (Chi-square test, $p < .05$). Moreover, smokers and non-smokers held significantly different opinions as to whether the ban helped in creating a healthy environment. With regards to the ban reducing smoking behaviour, smokers and non-smokers presented significant differences in opinions ($p < .05$).

Table 3 *People's attitude to smoking in low v's high SES area*

	Low SES area n=100 %	High SES area n=100 %	Smokers n=51 % (n=)	Non-smokers n=149 % (n=)
I am happy with the smoking smoking ban?				
Agree	91	96	78 (40)	99 (147)
Disagree			22 (11)*	1 (2)
The smoking ban has helped create a healthy environment?				
Agree	89	96	75 (38)	99 (147)
Disagree			25 (13)*	1 (2)
The smoking ban has helped smokers reduce smoking?				
Agree	82	71	61 (31)	82 (122)
Disagree			39 (20)*	18 (27)
The smoking ban has helped smokers in quitting smoking?				
Agree	78	67	61 (31)	76 (114)
Disagree			39 (20)	24 (35)
Society disapproves of smoking?				
Agree	93	85	82 (42)	91 (136)
Disagree			18 (9)	9 (13)

*indicates $p < 0.05$

4.6 Research Question 5

Is there a difference in the factors that influence smoking status in low versus high SES areas?

Table 4 shows that ‘All my family/ friends smoke’ were the only significant factor to have influenced smoking status between the two areas of different SES.

Table 4 Factors that influence smoking status in low versus high SES areas

	Low SES area (n=52)		High SES area (n=12)	
	Agree	Disagree	Agree	Disagree
I do not want to stop	17	23	3	9
All my friends/family smoke	27*	13	4	8
I would need help/ support to stop	23	17	5	7
I could not deal with the craving	25	14	8	4
I have not the motivation to stop	24	16	9	3
To control weight	7	33	0	12
Stress stops me from smoking	23	17	7	5
I smoke because I get bored	29	11	9	3

*indicates $p < 0.05$

4.7 Research Question 6

Are cigarettes more readily available in low versus high SES areas in Waterford?

Figure 6 indicates tobacco outlets in the low SES area (n=8) are double the number of tobacco outlets in high SES area (n=4). Further examination shows the majority of sell points in the low SES area (n=5) were from grocery/newsagent shops compared to the high SES area (n=1). Both location were found to have the same number of sell points through vending machines (n=3).

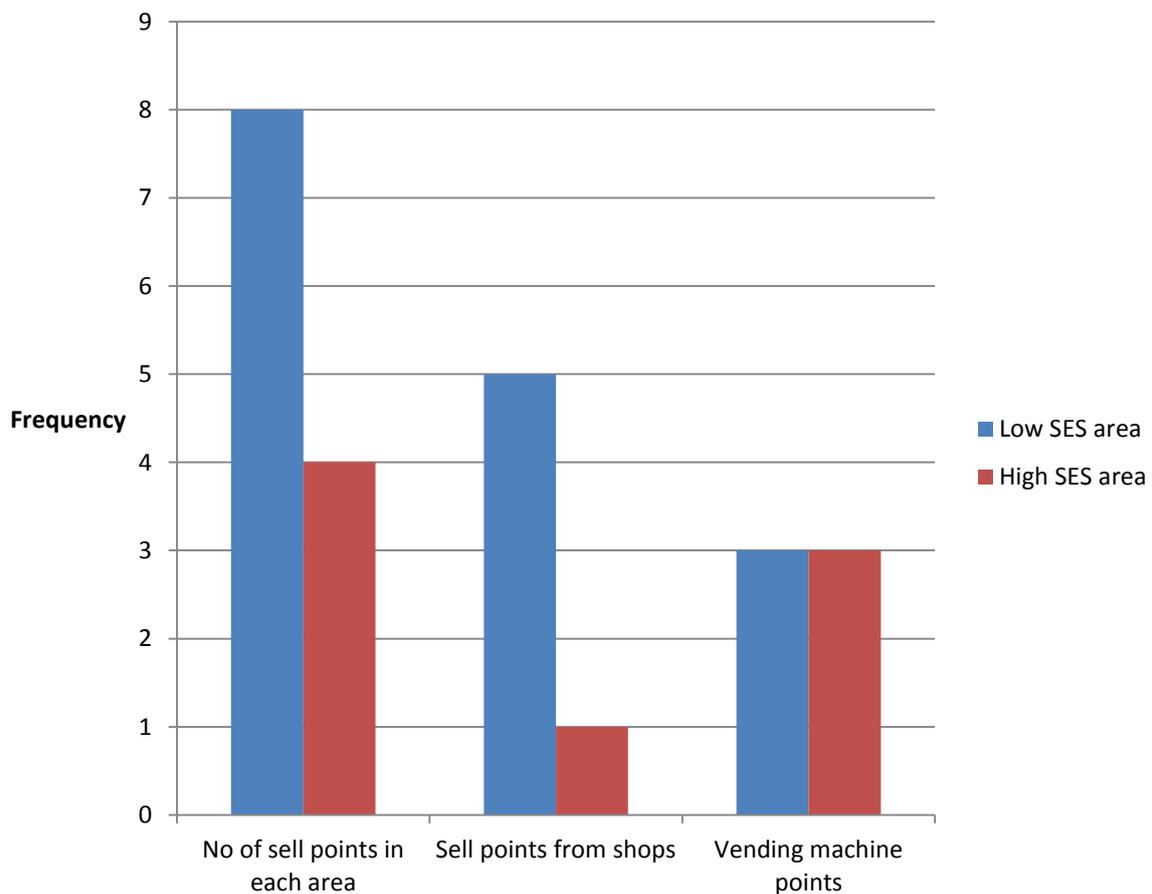


Figure 6 number of tobacco outlets in areas of different SES

Table 5 shows that the cigarette machine in pub A is out of view from staff members, while staff members in pub B have sight of the cigarette machine. Both pubs (C + D) in the high SES area had cigarette machines in view from staff members. All the cigarette machines required a token from a staff member in order to access tobacco. Also, there was a higher number of E-cigarette sell points in low (n=5) versus the high SES area (n=1).

Table 5 *Characteristics of cigarette machines in pubs in areas of different SES.*

Are vending machines in view of staff?	Number of pubs in the Low SES area (n=2)		Number of pubs in the High SES area (n=2)	
	Pub A	Pub B	Pub C	Pub D
Yes		✓	✓	✓
No	✓			
Token required machine				
Yes	✓	✓	✓	✓
No				

4.8 Research Question 7

Are public spaces and public houses in the low SES area more smoking enabling than those in high SES areas?

Table 6 shows a greater number of people in the low SES area smoking directly outside Lisduggan Shopping centre (n=5) as compared to Ardkeen Stores (n=0) area of high SES, which are both non designated areas for smoking. Pub A in the low SES area had no designated smoking area at the back and had three people smoking at the doorway. Apart from the signage in the doorway of Pub D, the overall signage in both areas was poor. The quality of smoking areas in Pubs within the high SES area was far better than those in the low SES area.

Table 6 Characteristics of locations where people smoke in the low and high SES areas

Low SES area						
	Bus shelter	Outside SC	Pub A		Pub B	
			Smoking area	At/in doorway	Smoking area	At/in doorway
No. of smokers	2	5	N/A	3	1	1
Designated area Yes No	✓	✓	N/A	✓	✓	✓
Quality of signage v. poor(1)- v. good (5)		1	1	1	2	1
Smoking area in pub? Yes No			✓		✓	
Quality of smoking area in pub? v. poor(1)- v. good (5)			N/A		2	
High SES area						
	Bus shelter	Outside SC	Pub C		Pub D	
			Smoking area	At/in doorway	Smoking area	At/in doorway
No. of smokers	1	0	3	0	1	0
Designated area Yes No	✓	✓	✓	✓	✓	✓
Quality of signage v. poor(1)- v. good (5)		2	1	1	1	3
Smoking area in pub? Yes No			✓		✓	
Quality of smoking area in pub? v. poor(1)- v. good (5)			5		4	

Chapter 5

Discussion

5.0 Discussion

5.1 Introduction

This chapter reviews the results from the previous chapter, while discussing and putting them into context with other research drawn from both the literature review and other research articles. To date, little research in Ireland and no research in Waterford reports on how different environmental setting influences smoking patterns. The purpose of this research was to examine how different environmental settings influenced smoking prevalence, behaviours and attitudes.

5.2 Overview

Overall the findings from this study indicate that the lower SES area had a higher smoking prevalence rate, lower levels of education and higher levels unemployment as compared to the higher SES area. While a higher number of participants from the low SES area attended a smoking cessation programme, this may not be surprising given fewer people smoked in the high SES area. There was no significant difference in relation to participants attitudes post implementation of the smoking ban or whether they implemented a voluntary smoking ban at home across the groups. However, significance was found across smoking status. The role of peers had a significant influence on lower SES smokers only. The lower SES area was identified in having a denser number of tobacco sales outlets, had poorer signage indicating to where smoking was and was not prohibited. As a result this may have contributed to the higher number of people found smoking in non-designated areas.

The findings from this study indicate that lower levels of education and higher levels of unemployment (16%) are characteristics of lower SES areas. This unemployment rate is lower than figures for Waterford County (CSO, 2011b) and nationally (CSO, 2011) where the unemployment rate was 19.1% and 19% respectively. Also, a higher number of people in the lower SES area who took part in this study were educated to third level standard in comparison to Waterford City and County (27.2%). Irrespective of measuring health within this study, placing these findings in the context with the literature, it would suggest that these people may have poorer health than those in higher SES areas (Bobak, 2000; Mokdad, 2004). While these components can also reflect an individual's socioeconomic position in society,

they may also represent different explanations linking SES and health behaviours (Siegrist & Marmot, 2004).

Employment status has been found to be closely linked with one's educational level. In health behaviour research, educational level may be an enabling factor in providing knowledge and skills for positive health behavioural decisions (Schittker, 2004). Education and occupation also determine people's accessibility to material resources such as personal and household income (Lynch & Kaplan, 2000). As previously discussed, the studies by Barbeau, Kreiger and Soobader (2006) and Jha, Peto, and Zatonski (2006) reinforce this argument, in that areas with high income and educational levels have fewer deaths but also have a lower prevalence of smoking. Furthermore, low SES areas usually coincide with poverty. However, poverty is more complex than income alone (Marmot, 2001). Income alone cannot influence poor health, but can determine the level of social participation in society. Poor social involvement can lead to isolation, which has been identified as an indicator of poorer health (Marmot, 2004).

5.4 Smoking prevalence and differences in different SES areas

Contrasting figures for smoking prevalence in Ireland have previously been found (OECD, 2013; OTC, 2013). The overall prevalence of smoking in this study was 25.5%, which is comparable with that reported by the OECD (29%) and OTC (22%). Sex differences in smoking prevalence here indicate that a higher number of females (27%) compared with males (24%) smoked. These figures contradict those reported in both the 2007 SLAN survey (Brugha et al., 2009) and from the OTC (2013), where the prevalence of smoking in males was (31% and 24%) and females (27% and 21%) respectively. A possible explanation for this is that women (n=121) outnumbered men (n=79) in this study. Moreover, lower SES areas continue to have higher smoking rates (38%) than higher SES areas (13%) and these findings are consistent with those identified in the literature (Brugha, 2009; OTC, 2013; WHC, 2011). This coincides with education and employment as previously discussed, in that both components can influence positive health behaviours (Schittker, 2004).

Despite decades of public health campaigns encouraging smoking cessation, the findings of this study suggest that a large portion of the population continue to smoke and more so, those in lower SES areas. Layte and Whelan (2009) argue that different social groups do not process smoking campaigns equally. Unhealthy behaviours are often linked to societal patterns which can negatively influence disadvantaged social groups from successfully

implementing a healthy lifestyle (Chinn, 1999; Macintyre, 2000). This is apparent in the MRBI/THS (2002) study (as cited in Layte & Whelan, 2009) where those who continue to smoke perceive the benefits of smoking to outweigh the costs and risks of quitting. A more comprehensive understanding into this is that lower SES individuals have less expected positive health outcomes, are more exposed to the pressure of unhealthy behaviours and perceive health as the ability to work (Chamberlain & O'Neill, 1998). However, the level to which health behaviours influence social inequalities remains uncertain (Lynch, 2006), as socio-economic differences require more than unhealthy behaviours. Several studies suggest that removing disparities in health behaviours within SES groups would have limited outcomes because disparities would develop elsewhere (Lantz et al., 1998; Link & Phelan, 1995). Social determinants impact environmental settings, thus lower SES areas are at greater risk to harmful environmental conditions (WHO, 2007).

5.5 Smoking Cessation and factors influencing smoking status

The results from this study show a higher number of low SES smokers attended a smoking cessation programme. However, this is not surprising given that fewer people smoke in the high SES area. There was no significant difference in the factors that affect smoking status between the two SES areas. This is comparable with that reported by (Lomas, Al-Khairalla, & Winter, 2008; West, 2004), where motivation and psychological problems strongly influenced smoking status. However, the variable 'All my friends/ family smoke' was the only significant factor that influenced smoking in the lower SES area only. This suggests that in addition to policy change efforts in lower SES areas there should be a greater focus on group and particularly community wide interventions. Evidence suggests that multi-component community wide interventions have a better outcome compared to single strategies in reducing smoking among young people (Sowden & Stead, 2008). Although this study did not include quit rates as a result of attending a smoking cessation program, it has been found that SES differences in smoking cessation rates exist in many smoking interventions (Fernandez et al., 2006; Hiscock, Judge, & Bauld, 2010).

In the past, reports have suggested that differences in quit rates between low and high SES groups are due to the level of 'addiction and cravings' for tobacco. However, in this study neither of these were major drivers nor were motivation, stress, boredom and needing support to quit. In previous studies, individuals of lower SES areas were found to have less motivation (Reid, Hammond, & Boudreau, 2010), experience greater levels of stress and

boredom (Lomas, Al-Khairalla, & Winter, 2008). A possible explanation for the variances in results from this study as compared to the literature is that smokers felt a stigma associated with smoking and this may have impacted in their decision making as the questionnaires were researcher administrated.

5.6 Attitudes of people to smoking in low versus high SES areas post implementation of the smoking ban.

In 2004 Ireland cemented its place in history by becoming the first country in the world to endorse a nationwide smoking ban. Five years later in 2009 it became the first European country to ban the advertising of tobacco in retail units. While part of the Tobacco Control Framework MPOWER Strategy (2010) has been addressed to reduce second hand smoke, it has been argued that adherence to the smoking ban may not be obeyed to the same degree across SES groups (David, Esson, Perucic, & Fitzpatrick, 2010). The overall results of people's attitudes towards smoking in low versus high SES areas in this study (no significant difference found, see table 3), indicates that irrespective of SES, people reported that they support smoking control legislation. This is an interesting finding as the literature suggests that health promotion campaigns are not always adhered to the same across social groups Layte & Whelan, 2009). High levels of education and knowledge can positively influence intellectual thinking, which are characteristics of higher SES areas (Backlund, 1999; Mirowsky, 1998). However, this does not seem to have an impact on the lower SES group in this study. This may be an indication to a deviance from social norms.

However, when attitudes were examined across smoking status a significant number had negative attitudes to the ban. In particular, 40% of smokers do not believe that the ban has helped people to quit. While an explanation for this was not measured in the study, it may be due to smokers being resistant to increased tobacco taxation. According to Bader, Boisclair and Ferrence (2011) tax increases on tobacco mostly affect smokers in lower SES areas, where prevalence is greater. These smokers have less disposable income and have lower smoking cessation rates and as a result are further deprived due to price increases.

Chaaya (2013) implemented a non-smoking policy in a Beirut University. The majority of the student's attitudes to the smoking ban were positive; but differences across smoking status emerged. Non-smokers believed the ban was necessary and it would have an effect on smoking behaviour. This was a predictable result given that non-smokers most often acknowledge the negative health effects of second hand smoke. In addition, other studies

have shown that non-smokers were significantly more supportive of the implementation of smoke-free policies in their universities (Loukas, Garcia, & Gottlieb, 2006; Rigotti, 2003).

Since smoking prevalence is higher in lower SES areas this may suggest that those in such areas are more at risk to the exposure of second hand smoke. It is evident that the implementation of the smoking ban has decreased the exposure to smoke and improved air quality in public venues (Mc Nabola, 2006; Mulcahy, 2005). However, although certain aspects of the wider environment are imposed upon us, we have a greater control of the environment in our own homes. It has been speculated that as a result of the smoking ban, smoking which takes place in private venues i.e. in homes has increased. In contrast to this, a significantly lower number of people permitted smoking in their homes post implementation of the smoking ban, a decrease from 85% to 80% (Fong, Hyland, & Borland, 2006). In comparison to the study carried out by Fong, Hyland, & Borland (2006), this study found that a lower percentage of participants from both the lower (64%) and higher (67%) SES areas allowed smoking in their homes.

The findings from this study found no significant difference in the implementation of a voluntary smoking ban in homes between SES areas. Piscinger et al. (2012) would argue the findings of this paper. Their study reported that children in lower SES areas were 11 times more likely to be exposed to second hand smoke, suggesting a greater number of homes in lower SES areas permit smoking. Given these figures a large number continue to allow smoking in their homes. This study did not measure whether participants lived with a non-smoker or if they had children in their home. However it has been found in previous research that homes where non-smokers, children or infants reside act as a stimulus for voluntary implementation of smoking bans due to a concern for their health (Borland, Young, Hyland, Anderson & Fong, 2006). These results may suggest that the smoking ban has assisted in the introduction of voluntary smoking bans in homes and that the participants' attitudes to the smoking ban were related to voluntary implementation of smoke-free homes.

While it may be difficult to legislate and police smoking at home, Piscinger et al. (2012) argues for legislation to protect children from second hand smoke inside their homes which may coincide with parental support for smoking cessation and education. Children are more likely to be exposed and less able to avoid exposure to second hand smoke than adults. Furthermore, the damaging health effects for children are greater in that children inhale a greater amount of toxins per pound of body weight than adults (Obergh, 2010). Exposure to

second hand smoke can result in sudden infant death syndrome in babies. Children who are in regular contact with second hand smoke are at a greater risk of asthma, respiratory tract and ear infections (Royal College of Physicians, 2010; US Department of Health and Human Services, 2006). As a result of this the Irish government are close to implementing legislation to protect children from the exposure to second hand smoke in cars (Reilly, 2014).

5.7 The Environment and Smoking

5.7.1 Areas dense in the sales of tobacco

Consistent with previous studies (Henriksen, 2008; Novak et al., 2006) this study found that areas of lower SES were more exposed to the availability of tobacco products due to a higher concentration of tobacco outlets. This highlights how policy and legislation changes are essential. Education alone (i.e. smoking cessation programmes) cannot fully be effective when the access and availability of tobacco is not being addressed. While the MPOWER policy for smoking (Tobacco Control Framework, 2010) suggests that good monitoring systems need to track smoking prevalence, the impact of interventions and the marketing, promotion and lobbying of tobacco. There seems to be a gap in the monitoring of the availability of tobacco outlets in disadvantaged areas.

The lower SES area in this study is adjacent to a secondary and primary school, suggesting that these school goers are exposed to a high-risk environmental setting during a time in their lives where the risk of tobacco initiation is greatest (Novak et al., 2006; Rigotti, 1999). Consistent with self-service vending machine polices (HSE, 2013), both SES areas in this study complied with the regulations. That is the machines required a disc to purchase tobacco and are in view of staff members (except Pub A where the machine was slightly out of view). Policies limiting the availability of tobacco products and particularly among those at risk to exposure may influence community norms in opposing the use of tobacco and against making tobacco available to young people.

Equally important, this study revealed a higher number of outlets in the lower SES area had e-cigarettes visibly on sale. The visibility of such products could be argued to be a form of promotion. One of the objectives of the MPOWER campaign is to enforce bans on tobacco advertising, promotion and sponsorship. Under the Public Health Acts 2002 to 2009, the advertising of tobacco products is not permitted (Tobacco Control Framework, 2010). While e-cigarettes do not contain tobacco; it is in the researcher's opinion that e-cigarettes should

come under this act. Professor Luke Clancy (as cited in Vize, 2014) argues that the smoking ban has prevented 3,700 deaths and has enabled individuals to quit. However, with limited legislation restricting the availability of e-cigarettes, this may play a part in the undoing of the achievements of the smoking ban by renormalizing the status of smoking in society. Young people may perceive these as a glamorous alternative to smoking and may have an influence on their behaviours. A study conducted in France found that seven percent of non-smoking children have tried e- cigarettes. A suggestion made is that non-smoking young people may become addicted to the nicotine vapour from the e- cigarette and possibly progress onto tobacco products (Vize, 2014).

In contrast to this, a report in the Irish Medical Times completed by Hanley (2014) suggests that Ireland should show leadership by way of the e-cigarettes. According to Hanley (2014) health promotion and public health smoking cessation campaigns have peaked in helping save lives. Regardless of the intervention utilised- individuals will continue to smoke. The supports that are available will address smoking for those more likely to quit. However, many individuals remain hard core nicotine addicts and will continue to smoke until it is too late. Hanley (2014) states that every smoker should be encouraged to change to e-cigarettes, while not 100 % safe; this alternative to smoking would result in far less deaths.

5.7.2 Place-based smoking patterns

As previously discussed, participants' attitudes post implementation of the smoking ban was positive regardless of SES. However, a difference in smoking behaviours exists in relation to where people smoke. For example, more people in the lower SES area smoked in bus shelters and directly outside of the shopping centre entrance. While cigarette ashtrays were available directly outside of the shopping centre, the quality of signage was very poor. According to the Public Health Act (2004) smoking is prohibited within a 3 meter radius of public venue entrances and that all premises to which is accessible by the public should have signs indicating whether or not smoking is permitted. Taking this into account, it could be suggested that some smokers and employers are breaking the law. This is a complex scenario, in that the shopping centre personnel makes ashtrays available for smoking directly outside the entrance, yet it is not a designated area for smoking and is within the three meter radius where smoking is prohibited.

Equally important, Pub A in the lower SES area had no designated smoking area and as a result led to people smoking directly outside the pub and in the doorway. This smoking

behaviour may be as a result of the placing of a fixed ashtray at the doorway of the pub, suggesting to smokers that it is ok to smoke. Smoking outside of public places may be seen as an advertisement to smoking but more importantly may contribute to passive smoking as the exhaled smoke may gather in the entrances. According to Irelands Public Health Tobacco Act (2004), employers are required to provide smoking areas for both staff and members. The act describes a legal smoking area as;

(c) a place or premises, or a part of a place or premises, that is wholly uncovered by any roof, whether fixed or movable; (d) an outdoor part of a place or premises covered by a fixed or movable roof, as long as not more than 50% of the perimeter of that part is surrounded by one or more walls or similar structures inclusive of windows, doors, gates or other means of access to or egress from that part. (p. 15-16).

While Pub B in the lower SES area had a smoking area, it is questionable in the researcher's opinion to whether the smoking area meets the criteria as mention above. In comparison, both pubs in the higher SES area had impressive smoking areas. This again highlights that lower SES areas are more at risk to factors that influence health, regardless of the type of legislation that is in place.

5.8 Limitations

Due to the cross-sectional nature of this study it may be difficult to make casual implications. For example, it may be difficult to determine the casual relationship between the smoking ban and smoking behaviour. The study only represented a snapshot of a particular time frame and if conducted in another period may have had different results. The study included a relatively small sample size (n=200), which would not have had the accuracy of that of a larger sample size. The questionnaires were researcher administrated and this may have limited participants in disclosing some information. The questionnaires were administrated on a Thursday and Friday morning in shopping centres and as result participants from higher SES areas may have been shopping in the area, or visa/ versa. Also, due to the dates of administrating the surveys, the study did not capture a true representation of the population as many people that work would be working from 8am-5pm.

5.9 Conclusion

Smoking prevalence continues to be a contributing factor to health inequalities. Employment and education are important factors that can enable positive healthy decisions and ultimately influence health. While these factors may play a role in unhealthy behaviours, it must also take into account the wider determinants of health. Policy and legislation change seems to be acceptable to people living in areas of lower SES. Interventions targeting individuals may be best delivered as a more comprehensive community wide programme involving social support. Lastly, there appear to be many environmental barriers to smoking cessation in the lower SES area which can only be addressed by the strict enforcement of policies.

5.9.1 Recommendations

Taxation on tobacco needs to be more extreme in order to discourage people from smoking. A 10% increase in taxation may not have the desired effect, therefore more substantial increases in taxation is required. While this may affect the poorest the most, more resources are needed to reduce smoking among this cohort i.e. more comprehensive community wide programmes involving social support and more health promoting advocates for change to harness the support.

Understanding the effects of smoking policy is complex especially when many are simultaneous in place. It is important to understand their main effects so interventions can be designed to improve the effectiveness of tobacco control interventions. Which control policy works best each-other and in what context? In order to answer these questions, further research is required.

Similar to the new proposal by the government to limit the availability of fast food outlets near schools, it is in the opinion of the researcher that policies should address areas dense in tobacco outlets, whether such outlets are near schools or in low SES areas. Education alone (i.e. smoking cessation programmes) cannot be effective when access and availability is not being addressed.

A complete ban on smoking in cars should be implemented in order to protect children. Children are probably the most vulnerable when it comes to the exposure of second hand smoke.

It is in the opinion of the researcher that adequate signage should be made visible to smokers, even more so in areas of low SES, due to this group having a lower educational level which may lessen their ability in reading and understanding policies.

In accordance with legislation, it is the opinion of the researcher that the government and particularly the enforcing authorities (HSE & OTC) should review the current situation in the lower SES area included in this study.

More research needs to be complete into the effects of e-cigarettes on health. Due to the product's rise in popularity, comes the unknown potential impact on health. It is still unclear if the products will benefit smoking cessation or delay the good work of eliminating nicotine for good.

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Appendices:



Waterford Institute of Technology
 INSTITIÚID TEICNEOLAÍOCHTA PHORT LÁIRGE

Information from this questionnaire is completely confidential. Please answer honestly and accurately.

Section A:

1. What location are you in?

Lisduggan Shopping Centre

Ardkeen Stores

2. Are you?

Male Female

3. What is your age? Circle the appropriate

Less than 20, 21-30, 31-40, 41-50, 51-60, 61-70, 70+

4. I went to?

	Please tick
Primary School	<input type="checkbox"/>
Secondary School	<input type="checkbox"/>
Third Level	<input type="checkbox"/>

Section B:

5. Would you allow people to smoke inside your home?

Never Sometimes Very often

6. Do you smoke?

Yes No

Past smoker

7. Have you ever gone to a quit smoking program?

Yes No

Why/Why not?.....

8. What has or would stop you from smoking?

	Agree	Disagree
I do not want to stop		
All my friends/family smoke		
I would need help/support to stop		
I could not deal with the craving		
I have not the motivation to stop		
To control weight		
Stress stops me from quitting		
I smoke because I get bored		

Section C:

9. Please tick appropriate box

	<i>Strongly Agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly Disagree</i>
I am happy with the smoking ban				
The smoking ban has helped in creating a healthy environment				
The smoking ban has helped smokers reduce smoking				
The smoking ban has helped smokers in quitting smoking				
Society disapproves of smoking				

10. I am?

	Please tick
Retired	
Student	
Work at home	
Unemployed	
General Worker	
Factory worker	
Farmer	
Skilled worker	
Manager/Professional	

Finished – Thank you for your time

