

**The Relationship Between Absenteeism and Obesity and The  
Role of Workplace Health Promotion Programmes in Relation  
to Both.**

Aoife Keane

A dissertation presented in partial fulfilment of the requirements  
for MA in Human Resources Management

National College of Ireland

Submitted to the National College of Ireland, September ,2013

## **Abstract**

**Purpose:** The purpose of the study was to investigate the relationship between obesity and absenteeism. It also aimed to explore the role of workplace health promotion programmes in relation to both of these issues. It was an appropriate study in the current economic time, given organisational desire to save money and the Irish governments pledge to solve the obesity crisis in the country.

**Methodological Approach:** Quantitative methods were used in this research in the form of identical online and pen and paper surveys. The survey gathered demographic information including height and weight as well as information on frequency of absences, job performance and workplace health promotion programmes.

**Findings:** The hypotheses that there would be a higher frequency of absences and presenteesim for those who are obese compared to their non-obese counterparts were rejected. Likewise, the hypotheses that organisations that score highest on the employee reported workplace health friendliness scale, there will be lower levels of obesity and reduced frequency of absenteeism were also rejected. Other findings included a significant difference in body mass index (BMI) depending on occupation and a significant difference in health perception depending on BMI.

**Submission of Thesis and Dissertation**

**National College of Ireland**  
**Research Students Declaration Form**  
*(Thesis/Author Declaration Form)*

**Name:** \_\_\_\_\_

**Student Number:** \_\_\_\_\_

**Degree for which thesis is submitted:**  
\_\_\_\_\_

**Material submitted for award**

- (a) I declare that the work has been composed by myself.
  - (b) I declare that all verbatim extracts contained in the thesis have been distinguished by quotation marks and the sources of information specifically acknowledged.
  - (c) My thesis will be included in electronic format in the College Institutional Repository TRAP (thesis reports and projects)
  - (d) ***Either*** \*I declare that no material contained in the thesis has been used in any other submission for an academic award.
- Or*** \*I declare that the following material contained in the thesis formed part of a submission for the award of

\_\_\_\_\_  
*(State the award and the awarding body and list the material below)*

**Signature of research student:**  
\_\_\_\_\_

**Date:** \_\_\_\_\_

## **Acknowledgments**

I would like to thank the many people who helped me complete this thesis:

Rebecca McGuire, my supervisor, who always gave excellent support and feedback as well as being amazingly patient, especially when guiding me through the minefield that is SPSS. I also much appreciated the speedy replies to emails, even when on annual leave.

My manager, John O'Dwyer who was always willing to let me slip out a little early on occasion for an emergency SPSS session!

All the participants in my survey; without them, there would have been no study.

Anna Touzel, who, as a good friend, was always willing to help, give her best suggestions and listen to my moaning about how it was never going to be finished. Nearly there, Anna. It would have been a lonely year without her.

Finally, I would like to thank my family who have all supported me throughout the entire process, but I would like to say a special thank you to my husband Lorcan who was a bit of a hero in many ways during the year. Without him, it would have been a much more difficult year.

## Table of Contents

|  |                                     |
|--|-------------------------------------|
| Abstract.....                                    | - 1 -                               |
| Submission of Thesis and Dissertation .....      | - 2 -                               |
| Acknowledgments.....                             | - 3 -                               |
| List of Tables .....                             | - 6 -                               |
| List of Graphs .....                             | - 7 -                               |
| List of Appendices .....                         | <b>Error! Bookmark not defined.</b> |
| List of Abbreviations .....                      | - 9 -                               |
| Introduction.....                                | - 10 -                              |
| Literature Review.....                           | - 13 -                              |
| Defining Obesity .....                           | - 13 -                              |
| Obesity and Illness.....                         | - 15 -                              |
| Causes of Obesity .....                          | - 15 -                              |
| <i>Genetics and addiction</i> .....              | - 15 -                              |
| <i>Socioeconomic Factors</i> .....               | - 16 -                              |
| <i>Stress</i> .....                              | - 17 -                              |
| <i>Technology</i> .....                          | - 17 -                              |
| <i>Advertising</i> .....                         | - 18 -                              |
| Absenteeism.....                                 | - 19 -                              |
| Obesity and Absenteeism.....                     | - 21 -                              |
| Workplace Involvement.....                       | - 22 -                              |
| The Present Study .....                          | - 24 -                              |
| Hypotheses.....                                  | - 27 -                              |
| Methodology .....                                | - 28 -                              |
| Philosophy .....                                 | - 28 -                              |
| Participants.....                                | - 28 -                              |
| <i>Sampling</i> .....                            | - 28 -                              |
| <i>Demographic information</i> .....             | - 29 -                              |
| Research Design.....                             | - 29 -                              |
| Materials .....                                  | - 30 -                              |
| <i>Recent Physical Health Measure</i> .....      | - 32 -                              |
| <i>Workplace Health Friendliness Scale</i> ..... | - 32 -                              |
| <i>Measurement of BMI</i> .....                  | - 33 -                              |
| Procedure .....                                  | - 33 -                              |

|   |      |
|---|------|
| Ethical Considerations .....  | 35 - |
| Results.....  | 36 - |
| Demographic Information.....  | 36 - |
| Work Information .....  | 36 - |
| Health Information.....   | 37 - |
| Hypothesis 1.....   | 38 - |
| Hypothesis 2: .....   | 40 - |
| Hypothesis 3.....   | 41 - |
| Hypothesis 4.....   | 41 - |
| Results for Sub-hypotheses.....   | 42 - |
| <i>Sub-Hypothesis 1</i> .....   | 42 - |
| <i>Sub-Hypothesis 2</i> .....   | 42 - |
| Other Findings .....  | 43 - |
| Discussion .....  | 45 - |
| Absenteeism and BMI.....  | 45 - |
| Presenteeism, BMI and General Health.....                               | 46 - |
| Workplace Involvement, BMI and Absenteeism .....                        | 47 - |
| The Influence of Children, Flexi-Time and Education on Absenteeism..... | 48 - |
| Sedentary versus Active Occupations.....                                | 49 - |
| Limitations to present study.....                                       | 49 - |
| Conclusion .....  | 51 - |
| Key Findings.....   | 51 - |
| Recommendations for employers.....                                      | 51 - |
| Recommendations for the Government .....                                | 52 - |
| Recommendations for Future Research .....                               | 52 - |
| References.....   | 53 - |
| Appendix 1: Pilot Survey .....  | 60 - |
| Appendix 2: Final Survey .....  | 67 - |
| Appendix 3: Social Media Messages .....                                 | 75 - |
| Appendix 4: Email to HR Managers.....                                   | 76 - |

## **List of Tables**

Table 1: IV and DV for each hypotheses

Table 2: BMI Distribution

Table 3: Absolute Absenteeism in raw hours

Table 4: Performance score according to BMI

Table 5: Mean and Standard Deviation for general health between BMI groups

Table 6: Differences between BMI groups for perception of own general health

## **List of Graphs**

Figure 1: Occupation Distribution

Figure 2: Self Evaluated Health Rating

Figure 3: BMI under/normal weight and overweight/obese distribution



## **List of Appendices**

- |            |                           |
|------------|---------------------------|
| Appendix 1 | Pilot Survey              |
| Appendix 2 | Final Survey              |
| Appendix 3 | LinkedIn/Facebook Message |
| Appendix 4 | Email to organisations    |

## **List of Abbreviations**

|      |  |
|------|--|
| BMI  | Body Mass Index                                  |
| CIPD | Chartered Institute of Personnel and Development |
| DV   | Dependent Variable                               |
| HPQ  | Health Performance Questionnaire                 |
| HR   | Human Resource                                   |
| HSE  | Health Service Executive                         |
| IT   | Information Technology                           |
| IV   | Independent Variable                             |
| NRS  | Non Randomised Study                             |
| RCT  | Randomised Controlled Trials                     |
| WHO  | World Health Organisation                        |
| WHP  | Workplace Health Promotion                       |

## **Introduction**

The area of investigation is the issue of absenteeism. There are two main objectives. The first one is to explore the possible relationship between obesity and absenteeism and the second to investigate the possible relationship between absenteeism and the extent to which an organisation promotes health among its employees. Absenteeism is a worthwhile subject area due to its financial impact on organisations as well as the potential safety implications it poses (McFarlin & Fals-Stewart, 2002). These concerns are more relevant than ever in this economic climate. Cost to an organisation may include paying the person who is absent, paying their replacement, increased insurance premiums and loss of productivity. Furthermore, safety issues may be significant depending on the environment, particularly if a less experienced person is replacing the absent person.

Due to the cost and safety implications, absenteeism is an area that has been widely studied, particularly in relation to possible predictors for absence. Job satisfaction is the main attitudinal factor researched regarding absenteeism (Ones, Viswesvaran and Schmidt, 2003). Demographic aspects such as age, gender, marital status and education have also been studied in order to find a possible connection to absence (Cohen and Golan, 2007; Schlk and van Rijckevorsel, 2007).

Linked to absenteeism and more common in the present economic climate is the concept of presenteeism. Presenteeism is defined as being present in work when unwell. It is a big issue and can lead to the spreading of germs, costly mistakes and lower productivity. It is especially common when absence levels are scrutinised when deciding on redundancies. According to a recent CIPD report, nearly a third of employers report an increase in the number of people coming to work ill in the last 12 months. Predictably, organisations that are expecting redundancies in the coming six months are more likely to report presenteeism (CIPD, 2012).

Obesity has been selected as an individual factor associated with illness related absence that is worthy of investigation. Due to the significant negative health consequences obesity poses, such as increased risk for type 2 diabetes, sleep

apnoea, hypertension and coronary heart disease (Vellinga, O'Donovan and De La Harpe, 2007; World Health Organisation, 1990), it would seem likely that people who are obese are absent due to illness more often and for longer periods than their non-obese counterparts. There is considerable support for this hypothesis in spite of the relatively small amount of research available (Trogon, Finkelstein, Hylands, Dellea and Kamel-Bahl, 2008; Moreau, Valente, Mak, Pelfrene, de Smet, De Backer and Kornitzer, 2004; Parkes, 1987).

The justification for repeating this type of research is due to the lack of Irish research in this area despite obesity being a growing Irish problem and one which the government have pledged to tackle (Treacy, 2005). According to a study conducted by SLAN (2007), 22% of men and 23% of women can be categorised as obese according to the World Health Organisations (WHO) classification of obesity (Oireachtas, 2011). The WHO classifies obesity as a body mass index (BMI) of 30 or higher. This can be compared with 1990s figures of 10% of obesity in men and 13% in women (Oireachtas, 2011). Additionally, Ireland is experiencing a negative economic climate in recent times which has put organisations under increasing pressure to cut costs (McCormick, 2009). If obesity is associated with absenteeism, this is an issue worth exploring both in terms of the health and well-being of the employees but also from a cost saving perspective. Saving money would also be an incentive for organisations to tackle obesity. The ways in which employers may choose to challenge obesity are diverse. This may be done though focusing on healthy eating, incorporating exercise into the working day, implementing a wellness programme, incentivising improved health or financing sporting activities. Undertaking some form of the above suggestions, would go towards fulfilling the government's recommendation that the private sector take responsibility in dealing with Ireland's obesity problem (Treacy, 2005).

As health promotion programmes in one form or another may play a key role in tackling the obesity problem, the extent to which an organisation promotes health among the employees will be investigated. The relationship between the extent of health promotion and absenteeism will also be examined. A review of such programmes and their benefits to organisations by Kumar and Prevost (2011)

suggests that these programmes not only benefit the organisation financially but the employee also.

In summary, this study will examine absenteeism and obesity, consider the possible reasons for each, discuss the cost implications for both and explore their relationship with other key variables. This exploration will take the form of a survey which will look at the potential correlation between absenteeism and obesity. The survey will also explore the extent to which an organisation acts to promote health among its staff as well as examining demographic or work related factors that may have an impact on absenteeism or obesity. Previous research on their relationships with each other will be investigated as a basis for the current study. The growing Irish obesity issue will also be analysed as it is the catalyst for this research. Suggestions of how employers could work to improve the obesity crisis will also be discussed.

## **Literature Review**

This chapter will discuss the relevance of the current study as well as providing definitions of the key factors pertaining to this study, such as obesity, body mass index (BMI), absenteeism and health promotion programmes. It will discuss the causes of obesity, the health implications and the impact it may have on absenteeism and presenteeism. The ways in which workplace involvement may improve the obesity situation will also be explored.

Obesity was chosen as a relevant factor in relation to absenteeism due to a significant increase in incidence of obesity in recent years (Jitendra, Courtney, Kathryn, Mithilesh & Bharat, 2011; Branca, Nikogosian & Lobstein, 2007). For the first time in history, the number of overweight people is equal to the number of underweight, malnourished people (Rosin, 2008). Only 60 years ago, this research would have had little relevance due to the relatively small incidence of obesity then. In the 1950's, the incidence of obesity was only 5.8% of the general adult population in America, compared to 19.3% in the 1990's (Parikh, Pencina, Wang, Lanier, Fox, D'Agostino, and Vasan, 2007). A national survey carried out in the United States in 2010 reported that this figure has since increased dramatically to 35.7% (Ogden, Carroll, Kit and Flegal, 2012). This represents an increase in the incidence of obesity in America of almost 30% in less than 60 years. While on the surface, the figures in Ireland may not be quite as dramatic as the United States figures, there has been an increase in obesity from 12% in 1990 to 23% in 2007 which represents a rate of increase that is almost twice as fast as the American growth rate (Treacy, 2005).

### Defining Obesity

Definitions of obesity vary due to the various ways of measuring obesity. It can be expressed as a percentage of fat in the body which may be measured in a clinical setting using specific technology such as skinfold thickness measurements (with callipers), underwater weighing, bioelectrical impedance, dual-energy x-ray absorptiometry (DXA), and isotope dilution (Centre for Disease Control and Prevention, 2011). However, these methods are not always readily available, and they are either expensive or need highly trained personnel. In addition, many of these methods can be difficult to standardize across

observers or machines, which can affect the results (Centre for Disease Control and Prevention, 2011). Alternatively, obesity may be conveyed as a number corresponding to an estimated level of fat which may be measured using the Body Mass Index or BMI (Deurenberg and Yap, 1999). BMI is measured by taking a person's weight in kilogrammes and dividing it by the square of their height in metres (WHO, 2013). While there are issues with BMI as a measurement of body fat, it is one of the most widely used tools due to its simplicity and ease of use in large populations. The main criticisms of BMI as a tool for measuring obesity is its failure to take bone density, fat distribution or muscle mass into consideration (Rothman, 2008). This means it may give inaccurate readings in those who have a great deal of muscle due to the fact that muscle weighs more than fat. However, it still remains one of the main instruments used when classifying obesity and one that the World Health Organisation (WHO) advocates although they do warn that it may not correspond to the same degree of fatness for different people (WHO, 2013). Furthermore, in light of the expense attached to other methods of body fat measurements, BMI is usually viewed as an adequate measure of fat for the purpose of predicting health risks (National Institute of Health, 1998).

Regardless of measurements used, at its most basic level, obesity is an excess of body fat, which has accumulated to such level that health is negatively affected (Health Service Executive, 2008). Using the WHO's definition, a healthy BMI is one between 20 and 24.9, overweight is defined as between 25 and 29.9 and obesity is classed as a BMI of 30 or higher (WHO, 2013). According to a 2007 SLAN study, 38% of Irish adults can be classified as overweight with a further 23% obese (Health Service Executive, 2008). These figures have almost doubled compared to figures in 1990 (Health Service Executive, 2008) so it is likely that the 2007 figures have increased in the past six years. Due to the significant increase in obesity rates in recent years, it has been highlighted as a key area the Irish government have pledged to work on (Health Service Executive, 2008).

### Obesity and Illness

The reason obesity has been brought to the forefront is due to its strong link with serious medical conditions such as Type 2 diabetes, gallbladder disease, sleep apnoea, osteoarthritis, hypertension and coronary heart disease. Obesity is also correlated, albeit in a weaker way, with some cancers, polycystic ovary syndrome and low back pain (Health Service Executive, 2008). While those conditions are such that they are likely to cause long term absences, obesity affects the normal functioning of cardiovascular, respiratory and endocrine systems and, as such is likely to increase the incidence of less serious conditions also (Parkes, 1987). These medical conditions carry with them a number of indirect costs including costs relating to sick leave and loss of productivity (Treacy, 2005). However, it is not only obesity that causes these issues. Even being overweight that is, having a BMI of between 25 and 29.9 mildly increases the risk of these diseases (Obesity Ireland, 2013). Therefore, even if there are no obviously obese individuals in the workplace, employers should still be aware of the increased risks and potential increased costs for those you are merely overweight.

### Causes of Obesity

There are a number of possibilities for the cause of this increase. It is helpful to explore these, as understanding the causes may provide the answer as to how best the obesity issue may be resolved.

#### *Genetics and addiction*

As genetics can only change over a long period of time, this cannot account for the rapid rise in obesity levels in the last 60 years (Tomer, 2011). However, differences in an individual's predisposition to weight gain may explain individual differences in weight and prevalence of obesity. A study on twins who were raised apart and separately found that the genetic influence on Body Mass Index (BMI) was significant (Stunkard, Harris, Pedersen and McClearn, 1990). It would therefore seem that the global obesity issue is attributable to other factors, combined with genetic susceptibility (Rosin, 2008). For example, there is now more of a reliance on convenience food than before. These foods are designed to be extremely palatable and habit forming. The goal is to create food that is addictive so that particular food will be purchased repeatedly (Tomer, 2011). Sugar was originally only found naturally in honey and fruit. Therefore, there is a



deep rooted code in our brain which tells us that foods containing sugar are almost always nutritionally valuable. In recent times, with the availability of commercial sugar, foods with high sugar content often have little nutritional value. Unfortunately, the body's biochemical system has not changed so it still reacts to sweet foods as if they are rare and valuable (Rosin, 2008). Not everyone who eats these types of foods is obese which would suggest that genetic susceptibility when coupled with the addictive and convenient nature of these foods could be a factor in the cause of obesity (Tomer, 2011).

### *Socioeconomic Factors*

The significant increase in obesity levels when comparing the 1950's statistics to today's has been mentioned. The developed world has also changed significantly in the same period. The length of the working day has increased due to an increased competitiveness which means more people are eating outside of the home so their control over calories and fat consumed has decreased (Tomer, 2011). Eating outside of the home means less control over portion sizes. Items available in fast food restaurants are 2-5 times larger than 20 years ago (Ledikwe, Ello-Martin and Rolls, 2005). Part of the reason portion sizes have increased is due to demand for better value. As the food itself is only a small percentage of the cost of a meal, with the other components being labour costs, insurance and rent, as part of a marketing strategy, companies are able to increase the portion size without a proportionate increase in cost (Ledikwe, Ello-Martin and Rolls, 2005). In this way, the restaurant appears to be offering value for money which is extremely important to consumers, especially in the current economic climate. It has been found, that increased portion sizes also leads to higher intakes, which in turn leads to a higher BMI (McConahy, Smiciklas-Wright, Mitchell & Picciano, 2002). Furthermore, when meals are eaten in the home, due to a perceived lack of time or tiredness, there has been a move to foods which require little or no preparation time (Tomer, 2011) and these foods often contain higher than is healthy levels of salt, fat and sugar (Stender, Dyerberg & Astrup, 2007).

### *Stress*

Hyman (2006) suggests that stress may be a factor in the causation of the obesity epidemic. Divorce rates are higher, economic instability has increased and the working week is longer than ever. However, there is insufficient research in this area to conclusively prove that an increase in stress levels has significantly contributed to society's obesity problem (Tomer, 2011). Despite the lack of research however, it is known that long term moderate to high levels of stress can cause the release of the hormone cortisol into the bloodstream. This release sets off a number of physiological responses, one of which includes becoming less sensitive to the hormone that tells the brain when satiety is reached (Hyman, 2006). It is possible that this may then contribute to weight gain and obesity. Assuming there is a link between stress and obesity and/or longer working hours and obesity, it would be prudent for employers to consider these issues. If stress and an increase in working hours have a positive relationship with obesity, in order to reduce obesity related costs, employers could attempt to improve both of those factors. This may be done by offering a flexible working schedule, emphasising quality rather than quantity of work, changing a competitive culture to a more productive and healthy one and addressing stressors. These are difficult issues to overcome, particularly in times of economic recession, where the instinct is to work employees to their maximum capacity and to increase working hours rather than decrease them. However, in a bid to increase profits, in ignoring these issues, employers may be unintentionally eroding them.

### *Technology*

Technology may have contributed to increased weight gain on two counts. The first being that increased technology such as transport and machinery mean people tend to walk less and physical labour is not as necessary as it once was (Rosin, 2008). Overall physical activity has declined despite the increase in recreational exercise. This is evident in modern organisations. In an office situation, people are sitting for much of the day; food is delivered or is provided within the office building decreasing the need for movement. In a recent study, it was found that the more over-weight an individual is, the more likely they are to spend much of their day seated at a desk (Benden, Congleton and Fink, 2011). Due to access legislation, buildings of a certain size must have an elevator. This

further decreases the motivation for extra movement. The second way technological change may have resulted in weight gain is through an increase in processed food consumption. The increased efficiency of food production has lowered the cost and increased the availability of convenience food which is the most detrimental food to our health. Up until the 1960's, much of food preparation was done by families at home. With technological innovations for food processing and packaging along with inventions like the microwave, there has been a change to a mass preparation of food (Cutler, Glaeser and Shapiro, 2003). As mentioned previously, this processed food is more convenient and often cheaper than the equivalent freshly prepared food but is significantly less healthy, leading to an increase in weight gain. Due to the difference in cost, it is understandable why employers who provide or subsidise food for their employees or clients may buy inexpensive, mass produced food. The long-term consequences of this practice may only serve in costing them more money in terms of absence costs.

### *Advertising*

Advertisements are a major part of everyday life in the Western world and they have increased in their frequency and placement locations in the last 60 years. As technology has rapidly advanced, advertisements play an even bigger part in our lives. The internet displays constant advertising giving food companies more ways to influence our decision making. Sites such as Facebook examine user's posts, comments and interests in order to decide which advertisements may fit their profile (Facebook, 2013). Although, no research could be found on this point, this kind of profiling may be seen as more dangerous than conventional advertising as this type of profiling may result in self-fulfilling prophecy regarding weight gain. Regarding this argument, it should also be noted that this self-fulfilling prophecy may also be positive if the user's posts, comments and interests are healthy.

In addition, television viewing has increased, again increasing exposure to advertisements (Plunkett, 2010). Healthy, low sugar, low fat foods only account for 2% of advertisements. 11% goes towards fast food advertisements, with most of the remainder for sugary snacks and cereals, soft drinks and sweets (Brownell and Horgen, 2004). Food, often unhealthy food is also advertised implicitly

through product placement. For example, the inclusion of Reese's Pieces, a chocolate sweet, in the film ET resulted in a sharp increase of the sale of that particular product shortly after the film was released (Brody, 2010).

While, employers are unable to control advertisements other than limiting the internet during working hours, they can educate their employees regarding healthy eating. This could be part of a wellness programme or health initiative. Due to the potential influence an organisation could have on the health of its staff, this is an area that is under investigation in the current study. Education and knowledge have been shown to play a role in how likely a person is to be obese. Health knowledge decreases an individual's probability of being obese (Loureiro & Nayga, 2004). A lack of universally understood informational labelling on foods exacerbates the health knowledge issue. Furthermore, more food is consumed outside of the home and it is reported that consumers typically have less information about this type of food (Cawley, 2006). Even when food has standardised nutritional labelling as is now mandatory by law, this only negatively affects the probability of obesity in a certain population, namely label reader white women (Variyam and Cawley, 2006). It is possible, due to time restraints and education levels, that food labels are not widely read or understood by the general population and therefore do not have as much of an effect on obesity levels as was expected. This may lack of knowledge is something that employers could pledge to improve.

### Absenteeism

Absenteeism in the workplace can be simply described as not attending work when scheduled to do so. However, there are two types of absences – voluntary and involuntary (Thomson, 2005 in Davey, Cummings, Newburn-Cook and Lo, 2009). Voluntary absence refers to times when a deliberate decision has been made to not attend work even when able or well enough to do so. Involuntary absence occurs due to incidences outside of the persons control such as family death, weather or as is most commonly the case, illness (Davey, Cummings, Newburn-Cook and Lo, 2009). It can be measured by frequency or duration. Long term absence has the most detrimental effect on organisations in terms of financial consequences. (Haswell, 2003). The measurement of absenteeism in the current study focuses on both voluntary and involuntary absences but has the

ability to differentiate between them. This is important as the main focus of the study is absence due to illness. Due to the design of the current study, frequency of absence rather than duration is examined.

Absenteeism, whether voluntary or involuntary poses safety issues (McFarlin & Fals-Stewart, 2002). These may be significant depending on the environment if a less experienced person is replacing the absent person. In addition, there are substantial cost implications which may include paying the person who is absent, paying their replacement, increased insurance premiums and loss of productivity. The total bill for absenteeism in America is estimated at \$300 billion per year (Bilgin and Mine, 2012) and in the UK, it costs in excess of £11 billion (Bean, 2005). Closer to home, IBEC (2011) have estimated that the cost in Ireland is €1.5 billion per year. These are significant sums regardless of the economic climate. However, in a time when businesses are struggling these figures become even more noteworthy and highlight the consensus that absenteeism is a problem that must be tackled, if only for the financial health of businesses.

The cost is the same whether the absence is classified as voluntary or involuntary. In addition, it is likely that when calling to give notice of an absence, illness is cited (Davey, Cummings, Newburn-Cook and Lo, 2009). However, organisations often focus on attempting to reduce the number of voluntary absences by trying to reduce the incidences of employees falsely reporting absence due to illness. This may be done by giving responsibility for absence management to HR managers rather than line managers, introducing return to work interviews and introducing discipline procedures (Haswell, 2003). These recommendations are partially backed up by Ayling (2012), who also suggests that rather than merely giving responsibility to HR managers for absence management, line managers should be trained up on the best way to deal with this issue. Flexible working and rewarding those with fewer absences are also possibilities to consider (Ayling, 2012).

Organisations could also examine how to reduce absence due to genuine illness. These may include the introduction of sanitizing stations in the workplace, involving occupational health professionals and implementing employee assistance plans (Ayling, 2012; Haswell, 2003). However, since long term absence is most detrimental to organisations in terms of its cost (Haswell, 2003),

this type of absence should be explored also. Long term absence, usually defined as absence for more than eight days (Ayling, 2012) can be for a number of reasons. However, the most common causes of long term absence are due to acute medical conditions such as stroke, heart attack and cancer (CIPD, 2012). These illnesses are strongly associated with obesity (WHO, 1990) which may suggest a correlation between long term absences and obesity.

### Obesity and Absenteeism

Given the illnesses associated with obesity, it is likely that there is a correlation between obesity and illness. There is then the assumption that the illness would lead to absenteeism. Zarling, Hartz, Laren and Rimm (1977) found that being overweight was positively related to sickness absence (Parkes, 1987). It is worth noting that this was merely overweight which is not as serious in health terms as obese, yet a relationship with increased sickness absence was still found. Parkes (1987) had a similar finding. Parkes also controlled for smoking and found that excess weight is a more statistically significant predictor of illness than smoking. Interestingly, there was a positive relationship between excess weight and poor mental health. One explanation for this was that overweight or obese individuals may be perceived negatively by others due to societies negative association with excess weight (Smith, Nolen-Hoeksems, Fredrickson and Loftus, 2003) and therefore, when faced with less social support in work than their normal weight counterparts, may be more likely to deal with difficulties by absence (Parkes, 1987). This suggests that in addition to obesity being associated with poor physical health, it may also be associated with poor mental health.

Although the study by Parkes (1987) had limited generalizability, her findings have been supported by other research since. A similar investigation in Belgium, this time with wide variety of occupations and a large sample size of over 20,000, had similar results. In this case, body fat distribution as measured by BMI was linked to high frequency and increased length of sickness absence (Moreau, Valente, Mak, Pelfrene, de Smet, De Backer and Kornitzer, 2004). Likewise, a large-scale study in America (Finklestein, Fiebelkorn and Wang, 2005) reported that obesity significantly increases absenteeism. A review of the literature regarding the indirect costs of obesity (Trogon, Finkelstein, Hylands, Dellea and Kamel-Bahl, 2008) concluded that compared to their non-obese peers, obese

workers are absent from work more often and for longer periods due to illness, injury or disability. However, one piece of research reviewed by Trogdon et al (2008) found that although obese workers had a higher rate of absenteeism than non-obese workers, weight loss made no difference to this (Serxner, Gold and Bultman, 2001). This may be due to previously developed illnesses that still posed an issue despite the weight loss. Despite this finding, there appears to be little evidence to contradict the hypothesis that obesity has a positive relationship with increased absence. With this in mind and the Serxner et al (2001) study notwithstanding, it seems worthwhile to attempt to address this issue.

### Workplace Involvement

Since a strong correlation has been found between workplace absences and obesity levels in the small amount of previous research available, it follows that organisations should use this information to improve wellness thus cutting absence levels and costs. The workplace also offers an ideal setting to reach a large population and has the infrastructure needed to offer support, (Glanz and Seewald-Klein, 1986). Indeed it would seem that employees feel their employer could and should encourage them to be healthier (Duncan, 2011). In addition, while it may be unfair to say that organisations cause obesity as they contribute to long working hours and increased stress levels and their use of technology and inexpensive, convenience foods, they could also do more to improve these issues. Some organisations appear to have realised this and many large American Companies are offering wellness or workplace health promotion (WHP) programmes (Wieczner, 2013). Additionally, many employers who offer such programmes also offer incentives to participate. Nearly 90% of employers offer financial rewards or prizes to employees who work towards improving their health (Wieczner, 2013). However, it is warned that offering incentives are unlikely to work if the workplace culture remains the same (Tozzi, 2013). Unfortunately, culture is a very difficult thing to both define and change.

While these programmes would have a focus on obesity, they also emphasise the cessation of smoking along with the importance of increasing physical activity (Heinen and Darling, 2009). Heinen and Darling (2009) suggest there are a number of ways employers can make an impact on their employees' health. These include incentives for participating in physical activity or achieving a personal

health related goal; environmental support such as health focused food/vending machines, signage marking distance and/or encouraging the use of the stairs; growing a culture of health in the workplace with peer support systems and education with targeted communication to the employees' family to include them.

It would seem easier for larger organisations to invest in such programmes but small inexpensive steps exist also. For example, reducing the volume of food available at meetings may even save money (Heinen and Darling, 2009). In addition, employers could get creative with suppliers to ensure only healthier food choices are available onsite (Heinen and Darling, 2009). Consumption of food is not only governed by individual choice, it is also influenced by environmental factors (Cohen and Farely, 2007). Alternatively, promoting healthy behaviour could be as simple as encouraging employees to stand more as opposed to sitting or necessitating the need to walk by locating resources such as photocopiers, policy manuals and procurement catalogues in a common area (Perry, 2012). Incorporating exercise or movement into the workplace would help refute the claim that the reason for not exercising is lack of time (HSE, 2008). Other creative approaches are required if there is little money to invest in a large scale wellness programme. One example is the peer-support model which is based on the recognition that people respond more positively to a friend or colleague's encouragement than that of a health professional (Duncan, 2011). It can also be argued that although a small organisation may lack the money of a larger organisation, they have the advantage of a certain characteristics such as approachable management and more manageable communication (Hassard, Wang, Cox, Muylaert, Namysl, Kazenas and Flaspoler, 2012).

A review of such programmes and their benefits to organisations by Kumar and Prevost (2011) suggests that these programmes not only benefit the organisation financially but the employee also. This supports an earlier study by Bertera (1990). He conducted a study in a large multi-location company and evaluated the impact of a workplace health promotion programme on absences for almost 30,000 employees. It was found that over two years, sick days decreased by 14% and the programme paid for itself after the first year. Most recently, findings by Hassard et al. (2012) suggests evidence than WHP programmes can have a positive impact on presenteeism and are linked with decreased absences. Hassard



et al. (2012), also indicate that WHP programmes can attract employees and highlight the employer as being responsible which may, in turn attract customers and built loyalty. Conversely, van Dongen, Proper, van Wier, van der Beek, Bongers, van Mechelen and van Tulder (2011) had inconclusive findings. In their review they reported benefits to the organisation in terms of costs only in the case of non-randomised studies (NRS). Randomised controlled trials (RCT) produced no significant findings in this regard. This would support the notion that NRS may impart misleading results due to confounding variables (Deeks, Dinnes, D'Amico, Sowden, Sakarovitch, Song, Petticrew and Altman, 2003). However, there is also the argument that RCT do not replicate real life situations since they evaluate programmes in controlled circumstances (van Dongen, Proper, van Wier, van der Beek, Bongers, van Mechelen and van Tulder, 2011) and obesity and absenteeism is best assessed in naturalistic situations.

While such programmes may have had the initial goal to increase healthiness and therefore decrease illness and absenteeism, they also have an effect on presenteesim, that is, the level at which an employee functions when they are at work (Hassard, et. al., 2012). Presenteeism is potentially as detrimental to a business as absenteeism. Presenteesim occurs when an employee comes to work when they really should be absent and can cut individual productivity by as much as a third (Avello, 2010). Just because an employee has good attendance does not necessarily mean their performance is good. However, as a healthy employee is assumed to be more productive, such workplace involvement can improve productivity in this way too (Krisberg, 2007).

### The Present Study

The present study examines the relationship between obesity levels and absenteeism frequency in a variety of organisations throughout Dublin. Zarling, Hartz, Laren and Rimm (1977) found that being overweight was positively related to more episodes of sickness absence (Parkes, 1987). It takes the view that workplaces, regardless of size can contribute to the fight against obesity in Ireland. It also explores how health friendly organisations are perceived by their employees and investigates if health friendliness has an impact on obesity levels. It would appear that health promotion programmes are associated with improvement in dietary habits (Ni Mhurchu, Aston and Jebb, 2010) so it would

seem reasonable to hypothesise that obesity would then decrease. If this is found, it would support the argument for the implementation of these programmes despite their cost as the assumption would be that the cost of the programmes would be less than the cost of absenteeism. In addition, the degree that the health friendliness of an organisation impacted on absenteeism is also reviewed. There have been a number of studies in this area and while there are mixed results with van Dongen, Proper, van Wier, van der Beek, Bongers, van Mechelen and van Tulder (2011) reporting that in non-randomised studies financial savings are found whereas in randomised controlled trials no savings are reported, there appears to be enough evidence that there are some financial savings to be made due to decreased absenteeism (Kumar and Prevost, 2011; Carpenter, 2008 in Kumar, McCalla and Lybeck, 2009; Jitendra, Courtney, Kathryn, Mithilesh & Bharat, 2011; Branca, Nikogosian & Lobstein, 2007) to include it in the current study.

Presenteeism is effectively the opposite of absenteeism and it occurs when people are present in work when they should be absent. It is increasingly common in the present economic climate when absenteeism is examined as criteria when making redundancy decisions. Presenteeism is harmful to organisations as illnesses may be spread and staff who are working while sick are less productive, more likely to make costly mistakes and take longer to recover from their illness (CIPD, 2012). Due to its importance, presenteeism was measured in the present study and examined in relation to BMI.

In addition, it is thought that there will be fewer absences in those who have a higher than degree level education. Also, it is conjectured that the higher the number of children, the fewer absences. This is based on Bigin and Mine's (2012) study which concluded that as education level and number of children increases, absenteeism decreases. While Beemsterboer et al. (2007) did not explore absenteeism and numbers of children, their findings support Bigin and Mine's study (2012) that the higher the education level, the lower the frequency of absenteeism.

This study recognises that other factors, such as demographic variables, type of job and working hour's pattern affect absenteeism so it attempts to control for

these in order to give the most accurate results possible. Whether or not the incidence of obesity varies according to factors such as age, gender, nationality, education level, marital status, child status, smoking status, occupation or working hours will also be explored. These dynamics were of differing importance in studies such as those by Bilgin and Mine (2012), Beemsterboer, Stewart, Groothoff and Nijhuis (2009) and Schalk and van Rijckevorsel (2007) and as such, it would seem remiss to disregard these factors. According to the Health Service Executive's report Action on Obesity (2008), there is a difference in obesity rates in relation to some of these factors. This information would allow organisations customise a solution assuming there is a positive relationship between obesity and absence due to illness.

It seems appropriate to conduct such a study at a time where organisations are under pressure to reduce costs and increase productivity while simultaneously the government is attempting to curtail the rise of obesity in Ireland. Furthermore, the scale of obesity has reached a level that surpasses the ability for any health care system to manage it clinically. As such, a multiple strategy approach is required to be integrated into multiple settings including that of the workplace (HSE, 2008).

To summarise, the present study explores the potential link between absenteeism and body mass index. It also examines other factors such as demographic variables and job characteristics for any correlation with absenteeism. In addition, the current study looks at workplace health friendliness, that is, how friendly or cooperative workplaces are to promoting health among staff with the assumption that workplaces that promote health experience fewer absences and have staff with a high proportion of healthy BMIs.

## **Hypotheses**

### Hypothesis 1:

There will be higher frequency of absences for those who are obese compared to their non-obese counterparts.

### Hypothesis 2:

There will be a higher level of presenteesim for those who are obese compared to their non-obese counterparts.

### Hypothesis 3:

In organisations that score highest on the employee reported workplace health friendliness scale, there will be lower levels of obesity.

### Hypothesis 4:

Organisations that score highest on the employee reported workplace health friendliness scale will have a reduced frequency of absenteeism.

### Sub-hypotheses:

[a]: There would be a difference in absenteeism depending on education level.

[b]: There would be a difference in absenteeism depending on the number of children a person has.

### Additional variables to be examined:

Following studies by Bilgin and Mine (2012), Beemsterboer et.al. (2009) and Schalk and van Rijkevorse, (2007), the impact of demographic factors such as age, gender, nationality, education level, marital status, child status, smoking status, occupation, or working hours on the frequency of absenteeism and level of obesity will be investigated. As well as being important control variables when testing the main hypotheses, given their mention in previous studies, they will also be examined in relation to absenteeism and obesity in their own right.

## **Methodology**

This section will outline the philosophical outlook of the current research as well as providing information about the research design and materials used. It will describe sampling techniques used, give demographic information about the participants and define the variables used within the materials. Finally, the procedure will be reviewed and ethical issues considered.

### Philosophy

The philosophical background for the current study was that of positivism as this approach is said to be the methodological underpinning of survey research and experimental approaches. Traditionally positivism views itself as being very scientific, factual, causative and value-free. It also attests that science should only deal with observable phenomena (Robson, 2011). However, there are some criticisms of this view which were addressed in the post-positivism approach. Post-positivism appears to be more realistic about the flaws of empirical research and therefore is the best fit to describe the current study. Post-positivism admits that evidence is always fallible and that researchers are not completely impartial and they have the capacity to influence results (Robson, 2011). As suggested by post-positivist theory, the current study attempts to reduce bias by utilising particular methodology and acknowledges any bias in the conclusion. Consistent with post-positivist beliefs, the current study accepts that one study cannot find the truth about something but as previous studies report similar results, the current study may be more confident about the findings.

### Participants

#### *Sampling*

Convenience sampling and snowball sampling was used to recruit participants from a wide variety of backgrounds, ages and occupations. 78% of participants completed the survey online meaning that 22% completed a paper and pen version of the survey. A link for the online survey was posted on various LinkedIn groups, asking people who were employed in Ireland to complete the survey. These participants were encouraged to pass the link onto their colleagues, thus snowballing the survey. Likewise, the link was emailed via Facebook to more potential participants and these participants were also encouraged to pass it

on in order to generate a larger sample size. Convenience sampling was also the sampling method used when recruiting participants who completed the paper version of the survey. These participants were contacted via the researcher's place of work and via extended family members. While random sampling is usually preferable in quantitative research (Jupp, 2011), it was not appropriate in the present research as a complete sampling frame was not available.

### *Demographic information*

The sampling technique yielded a total of 129 participants, 30% of whom were male, 70% female. The ages of the participants ranged from 21 to 60, with the mean age being 36.6 years old. The mean age of the participants who completed the survey online was 33 years old while the mean age of those who completed the paper and pen survey was slightly older, at 40.7 years old. This demonstrates the appropriateness of using both a computerised version of the survey and a paper and pen version as it produced a wider range of ages which added strength to the results. 85% of participants were Irish, 3% British, 8.5% European, with people from Australia and America making up the remaining numbers. Most people surveyed, 63% were married or cohabiting, with 17% in a relationship, 18% not in a relationship and 2% separated. The majority possessed some kind of 3<sup>rd</sup> level qualification, with 39% achieving postgraduate or Masters level and only 7% having just a Leaving Certificate or equivalent. At 59%, the majority of participants had no children, while 12% have 1 child, 19% have 2 children, 7% have 3 children and 3% have 4 children. The main occupations represented were Social Care, Management, Medical, H.R. and I.T. Between these 5 sectors, they made up 74.5% of the participants.

### Research Design

The present research used a mixed design. It was quasi-experimental in nature as obese and non-obese are two naturally occurring groups. Obesity was the key independent variable (IV) and absenteeism was the key dependent variable (DV) although the independent and dependant variables varied according to the hypothesis being tested. The other variables in question such as demographics, occupation and working hours are also naturally occurring. Furthermore, it was also a correlation design as the relationships between different factors were explored. A number of predictions were made about the relationship between the

two obesity groups in relation to absenteeism. There was also a prediction regarding the relationship between organisational input into health issues and absenteeism. Due to the type of design employed it was not possible to conclusively state the cause of absences (Jackson, 2012). There was the underlying assumption that obesity is the cause of the absence but this may not be the case. To attempt to overcome this flaw in the design, a number of characteristics other than obesity such as age, gender, nationality, education level, marital status, child status, smoking status, occupation or working hours were reported in order to control for these. However, as well as being control variables, due to the findings in studies by Bilgin and Mine (2012), Beemsterboer et al. (2009) and Schalk and van Rijckevorsel, (2007) they were deemed worthy of investigation in relation to absenteeism and obesity in their own right.

The Independent and Dependent variable differed depending on the hypothesis being tested (See table 1). For the main hypotheses, the IV was the level of obesity for the first and second hypothesis while the level of workplace health friendliness was the IV in the third and fourth main hypotheses. The IV for the sub-hypotheses were education level and number of children. The DV for the first and fourth main hypotheses was the frequency of absenteeism. The DV for the second main hypothesis was presenteesim and the third main hypothesis was level of obesity. The DV for both sub-hypotheses was frequency of absenteeism.

*Table 1: IV and DV for each hypotheses*

|                      | Hypothesis 1 | Hypothesis 2 | Hypothesis 3           | Hypothesis 4           | Sub-Hypothesis 1 | Sub-Hypothesis 2   |
|----------------------|--------------|--------------|------------------------|------------------------|------------------|--------------------|
| Independent Variable | Obesity      | Obesity      | Workplace Friendliness | Workplace Friendliness | Education Level  | Number of Children |
| Dependent Variable   | Absenteeism  | Presenteeism | Obesity                | Absenteeism            | Absenteeism      | Absenteeism        |

### Materials

The methodology was quantitative which will replicate the methodology used in past similar studies (Parkes, 1987; Moreau, Valente, Mak, Pelfrene, de Smet, De Backer and Kornitzer, 2004; Finklestein, Fiebelkorn and Wang, 2005). A

quantitative design was preferable in this case, as survey data could be used to address the research hypothesis. A combination of online survey and paper survey was used. The content of both surveys were identical with the distribution method being the only distinguishing difference between them.

In order to gain the information required, three different previously validated surveys were used. Surveys are widely used in the field of social research as means of collecting data from and about people (Robson, 2011) and were deemed the best way of collecting the data required for this study. The pilot study was conducted in order to check for any vague terms or instructions and any reported were clarified where possible. The main reason a self-administered survey was chosen as the collection method was due to its simplicity and the ability to reach a large range of people. Also, due to some of the questions being of a somewhat sensitive nature, self-administration was considered to be the best method to extract the most accurate information. The surveys used were the short version of the World Health Organisation's (WHO) Health and Work Performance Questionnaire (HPQ), (Kessler, Barber, Beck, Berglund, Cleary, McKenas, Pronk, Simon, Stang, Ustun and Wang, 2003), The Recent Physical Health Measure (Ruthig, Chipperfield, Newall, Perry and Hall, 2007) and the Workplace Health Friendliness Scale (WHF) (Drach-Zahavy, 2008). Some basic demographic questions were also asked at the start of the survey. These were taken from the demographics section of the long version of the HPQ and were augmented to fit the Irish population by changing the text in the education question so it was appropriate to the population. Three other questions were also added. These related to smoking status, nationality and occupation.

*The World Health Organisation Health and Work Performance Questionnaire (Short Version)*

The short version of the WHO HPQ was used as it specifically devised to measure absenteeism and presenteeism in employees. In order to test its validity and reliability, Prasad, Wahlqvist, Shikiar and Shih (2004) conducted the WHO HPQ on 2000 participants and then compared the results to employer's archival records on absences and job performance. They found a good concordance between the HPQ and the archival data across most of the participants. There



were some discrepancies between the two sets of data in some white collar workers. Despite this criticism, the HPQ was considered the best fit in the present research as its advantages such as its brevity and ease of administration outweighed its disadvantages. It consisted of absenteeism and presenteeism questions such as the number of hours worked in the previous seven days, number of days missed in the previous twenty-eight days and questions pertaining to job performance. They were a mixture of fill-in-the-box and Likert scale questions. Absolute Absenteeism was measured in raw hours and was calculated by multiplying the hours expected to work in a week by 4 in order to get hours expected to work in a four week period, then that was subtracted from the hours actually worked in the last four weeks. This resulted in minus figures in some cases when people worked more than expected. It also meant that vacation days were counted as absences. As this conflicted with the original definition of absenteeism, questions regarding whole and part days missed due to own physical or mental health were used. Presenteeism was measured in terms of a percentage rating of one's own performance in the last four weeks.

#### *Recent Physical Health Measure*

The Recent Physical Health Measure was used primarily for its brevity and simplicity. It was considered that other health measures were too long to use in an online or postal survey. This measure gives a broad overview of a person's general physical health. For the purpose of this study, no further detail was required. It consisted of four questions, the first generally rating one's own health with the other three assessing recent physical health on a five point Likert scale. The highest score possible over the four questions was 20. Using SPSS, Cronbachs Alpha was found to be .797 which indicates good internal reliability.

#### *Workplace Health Friendliness Scale*

There are very few comprehensive scales that measure an organisations attitude to employee's health and wellbeing. The Workplace Health Friendliness Scale (WHF) seems to measure this construct in a meaningful way (Drach-Zahavy, 2008a) as well as being short and simple enough for use in a self-administered survey. It consisted of five items rated on a five-point Likert-type scale. These items are common practices that may be utilised by an organisation to help employees maintain and improve their health. These five factors were used to

measure how interested an organisation is in the health of its employees. These factors included health education programmes, promoting a healthier environment, free medical procedures, workers' empowerment programmes and policy change. The following definitions were used within the questions:

- Health Education Programmes are programmes provided by the organization to train workers how to maintain their physical and mental health.
- Promoting a healthier environment in the workplace pertains to organizational arrangements that help workers promote their health.
- Free medical procedures are free check-ups, follow-ups, and immunizations that help employees control their health.
- Workers' empowerment programmes pertain to workplace initiatives that encourage workers to take more responsibility for their own as well as their colleagues' health, and to serve as health-promotion agents in their units.
- Policy change is defined as initiatives involving developing formal rules, guidelines, and human resource policies for promoting workers' health.

These five factors were examined for any relationship between them and absenteeism. The relationship between any or all of those factors and obesity was also explored. The highest score possible for each of the questions was 5, making the highest overall score a possible 25. Cronbachs Alpha was found to be .821 which suggests good internal reliability.

#### *Measurement of BMI*

Using the World Health Organisations (2013) definition, obesity was defined as a body mass index (BMI) of 30 or above. The participants were required to give their height and weight and their BMI was calculated accordingly. It was decided not to ask the participants to calculate their own BMI due to possible inaccuracies and also due to ethical reasons. It was deemed unethical to require participants to acknowledge their BMI since it is recognised that obesity may be a very sensitive subject for some people (Smith et.al. 2003).

#### Procedure

A pilot study was first carried out with a small convenience sample of five people (See Appendix 1). The aim was to address any ambiguity with questions or

instructions. The only change made was to the WHF part of the survey due to ambiguity. In the original, the question regarding the extent to which they believed their workplace promoted an activity was stated only once. This was followed by five statements. In the final survey, the question was at the beginning with instructions about that section of the survey. However, it also followed each of the statements.

When the final draft of the survey was complete, potential participants were invited to take part (See Appendix 2). The present study used a combination of postal and internet self-administered distribution methods in order to achieve as large a sample as possible. Using the internet only as a distribution method would have excluded a large section of the population who do not use a computer in their work. Internet distribution via an online survey website was chosen as the main distribution method due to the ease of access, the ease of distribution to a large population and increased confidentiality. Surveys were also distributed via post in order to account for people who had no access to a computer in their occupation. The majority of potential participants were contacted via social media websites, namely Facebook and LinkedIn and asked to participate in the study online (See Appendix 3). In order to partake, participants were required to click on a link to the survey. This link was posted in various LinkedIn discussion groups, including Employment law, HR and Health and Safety in Ireland, Irish HR, Irish Health and Fitness, Training and Development Ireland and The Public Relations Institute of Ireland as well as being distributed via private message on Facebook. The link to the survey and an explanation of the purpose of the survey was also sent to the Head of HR in various organisations including large department stores, television stations, voluntary organisations, hospitals and multinational technology companies. The head of HR was asked to forward this link on to employees who were then asked to complete the survey online (See Appendix 4). When requested, a paper version was made available to use. This was the case when employees did not have access to individual computers. More participants were targeted via convenience sampling and were asked to participate by completing a paper version of the survey. All participants were given information about the purpose of the study and how the results would be used. They were also assured of confidentiality and anonymity and given contact

details of the researcher and supervisor in case of difficulties either during or after the completion of the survey. All participants were required to confirm they gave informed consent. For the online version, participants were asked to complete all the questions and the online format prohibited continuation to the next page if a question was missed, thus ensuring the completion of the entire survey. In the paper version, participants were verbally reminded of the importance of completing every question. It was also in the written instructions.

#### Ethical Considerations

It is recognised that obesity may be a very sensitive subject for some people (Smith et.al. 2003). This study was designed to be as unobtrusive as possible by allowing self-reporting. In addition, there was no requirement on the part of the participants to calculate BMI, rather allowing them to record their height and weight only. The participants were informed of the purpose of the study and understood that participation was completely voluntary. In addition, no names of individuals or organisations were collected and individual information was kept confidential.

## **Results**

The data was analysed first through descriptive statistics in order to achieve a broad overview of the data. The main descriptive statistics are represented by charts and tables. Inferential statistics were then utilised to allow for a more in-depth investigation of the data. Each of the aforementioned hypotheses were analysed using the appropriate inferential test in SPSS. The results gathered through the use of these statistical tests will be discussed in the next section.

### Demographic Information

As mentioned previously, of the 129 participants, 26.4% (34) were male and 73.6% (95) were female with a mean age of 36.6 years old. The majority of participants, 85% were from Ireland, with 9% from central Europe, 3% from Britain, 1% from Australia and 2% from America. Most people surveyed, 63% were married or cohabiting, with 17% in a relationship, 18% not in a relationship and 2% separated. The majority possessed some kind of 3<sup>rd</sup> level qualification, with 39% achieving postgraduate or Masters level and only 7% having just a Leaving Certificate or equivalent. At 59%, the majority of participants had no children, while 12% have 1 child, 19% have 2 children, 7% have 3 children and 3% have 4 children.

### Work Information

The occupation of the participants varied greatly, although Social Care/Disability was the most common job with over one fifth of participants being in that line of work. This reflects the sampling technique used. This occupation was followed by management at 16%, health/medical occupations at 14% and H.R./Recruitment 13% (See Figure 1). 77% of participants had a regular work schedule with 8% working a rotating shift work type of schedule and 15% working irregular hours which depended on work-load. While a large proportion of participants - 42% - stated they had the option to work flexi-time, the majority, 58% did not have that option.

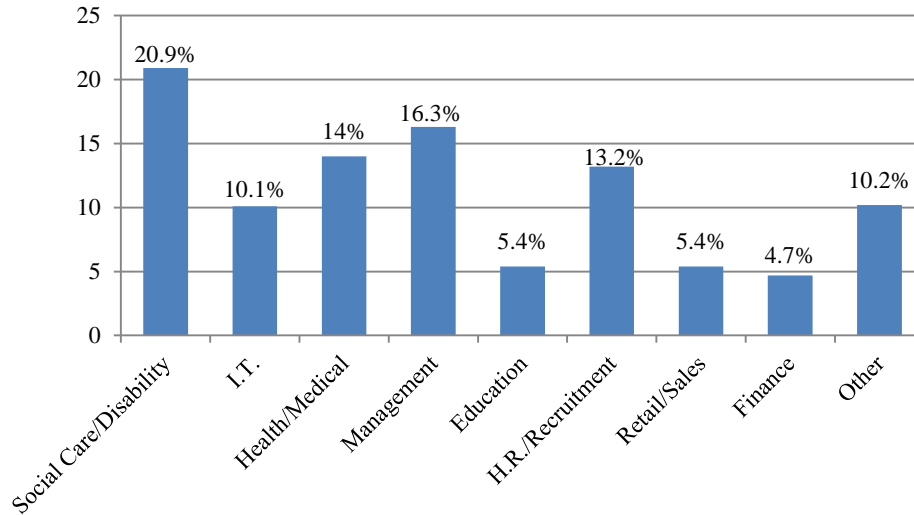


Figure 1: Occupation Distribution

### Health Information

At 63%, the majority of participants have never smoked and 82% do not smoke now. The vast majority of participants felt their health was good or excellent with only 13% in total perceiving their health to be fair or poor (See Figure 2). No participant rated their health as bad which was the lowest possible rating. 54% of participants had a normal BMI, which is a BMI of between 18.5 and 24.9 (See figure 3). The next biggest group, at 31% was that of people who were overweight but not obese, that is, those who had a BMI of 25 or over. 11% of people were obese to some extent and 4% of participants were categorised as being underweight. The obesity figure of 11% is much lower than the published national average obesity rate of 22%-23% (Oireachtas, 2011).

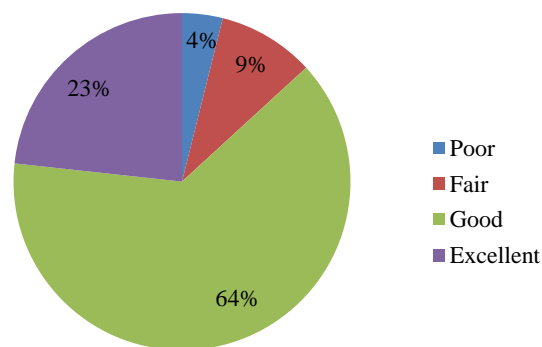


Figure 2: Self Evaluated Health Rating

Table 2: BMI Distribution

| BMI Category  | Frequency | Percent |
|---------------|-----------|---------|
| Underweight   | 5         | 3.9     |
| Normal weight | 70        | 54.3    |
| Overweight    | 40        | 31      |
| Obese Type1   | 9         | 7       |
| Obese Type2   | 5         | 3.9     |
| Total         | 129       | 100     |

Hypothesis 1: That there will be significant differences in absenteeism between different BMI groups.

In order to test the first hypothesis, a One-Way ANOVA was conducted using SPSS 21 to see if there was any significant difference in frequency of absenteeism when comparing those who were obese and those who were not. Absenteeism was calculated according to instructions in the WHO Health and Work Performance Questionnaire. This was done by first calculating hours expected to work in 4 weeks and then subtracting this from actual hours worked in the last 4 weeks. This gave an Absolute Absenteeism value in raw hours. A minus figure indicated that a person worked more than was expected or contracted (See Table 3).

Table 3: Absolute Absenteeism in raw hours

|                      | N   | Minimum | Maximum | Mean   | Std. Deviation |
|----------------------|-----|---------|---------|--------|----------------|
| Absolute Absenteeism | 129 | -120.00 | 116.00  | -.9147 | 29.08770       |

The One-Way ANOVA found no significant difference between the different levels of BMI in relation to frequency of absenteeism,  $F(4,124) = .764$ ;  $p = .551$ . Although obesity has a greater impact on health than just being overweight, as obesity is growing, it would appear that those who are overweight are likely to become obese. As no significance was found, in order to further test the hypothesis, the five original groups (see Table 2) were broken into two groups (see Figure 3) – those with a BMI of under 25 (normal and underweight) and those with a BMI of 25 and over (overweight, Obese type 1 and Obese type 2). When this was done, the groups became more similar in terms of numbers. 58%

of people were either of normal weight or underweight and therefore had a BMI of under 25, while 42% of participants had a BMI of over 24.9 which is classified by the World Health Organisation as an unhealthy BMI.

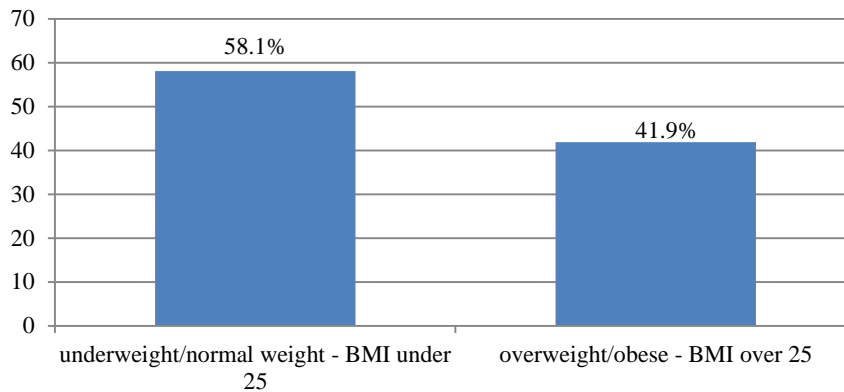


Figure 3: BMI under/normal weight and overweight/obese distribution

An Independent Samples T Test was then carried out to see if there were any differences between these 2 groups with regard to the frequency of absenteeism. The Independent Samples T Test found no significant difference in the frequency of absenteeism between those with a BMI of under 25 (underweight and normal weight) and those with a BMI of 25 or over (overweight, Obese type 1 and Obese type 2),  $t = 1.221(127)$ ;  $p = .224$ .

This information was broken down even further by grouping together those who have an unhealthy BMI, that is, a BMI either under 18.5 or over 24.9. When this was done, the gap between healthy and unhealthy narrowed even more, with 46% of people falling outside the recommended 18.5-24.9 parameters. A second Independent Samples T Test found no significant difference in the frequency of absenteeism when comparing all participants who were of normal BMI (between 18.5 and 24.9) with everyone else,  $t = -1.304 (127)$ ;  $p = .195$ .

As the calculation for absolute absenteeism took vacation days into account, rather than solely counting absence due to sick leave, it was deemed appropriate to investigate individual questions, specifically the number of days and part days in the last month participants were absent due to their own mental or physical health. A One-Way ANOVA found no significant difference across the original 5 BMI groups for whole days missed due to own health,  $F(4, 124) = .991$ ;  $p = .415$ ,



or for part days missed due to own health,  $F(4, 124) = .805$ ;  $p = .524$ . An Independent Samples T Test found no significant difference when BMI was grouped into underweight/normal weight and overweight/obese for either whole days missed due to own health,  $t = -.373(127)$ ;  $p = .710$ , or for part days missed due to own health,  $t = 1.442(127)$ ;  $p = .152$ . Another Independent Samples T Test was run with those with normal BMI as one group and everyone else in the other group. In that case, no significant difference was found for whole days missed due to own health,  $t = 1.001(127)$ ;  $p = .319$ , or for part days missed due to own health,  $t = -1.686(127)$ ;  $p = .094$ . Therefore, even allowing for possible drawbacks with the calculation of absenteeism, the hypothesis that there would be higher frequency of absences for those who are obese compared to their non-obese counterparts is rejected.

Hypothesis 2: That there will be significant differences in presenteeism between different BMI groups.

Presenteeism was measured in terms of rating in percentage of one's own job performance over the previous four weeks. A lower percentage suggested higher levels of presenteeism that is, being present but underperforming. A One-Way ANOVA found no significant difference in presenteeism between the five BMI groups,  $F(4, 124) = 1.715$ ;  $p = .151$ , thus the original hypothesis was rejected. When the BMI groups were changed to healthy and unhealthy BMI, that is, comparing those with a BMI of 18.5-24.9 with everyone else, an Independent Samples T Test found a significant difference between groups,  $t(127) = 2.047$ ;  $p = .043$ . Therefore the abridged hypothesis that there will be a significant difference between the healthy BMI group and all other BMI groups in terms of their presenteeism was accepted. However, as is evident in Table 4, the results are not as might have been expected given the link between obesity and illness (Health Service Executive, 2008), with those who were obese Type 1 assigning themselves a similar high performance score to those who were underweight. This will be examined further in the discussion.

Table 4: Performance score according to BMI

| BMI Grouping  | Performance Score % |
|---------------|---------------------|
| Underweight   | 92.6                |
| Normal Weight | 84.3                |
| Overweight    | 88.5                |
| Obese Type 1  | 91.4                |
| Obese Type 2  | 82.7                |

Hypothesis 3: That there will be significantly lower levels of obesity in staff who work in organisations that scored highly on the Workplace Health Friendliness Scale.

Workplace health friendliness was calculated by summing the scores of each of the questions, giving a minimum score of 5 and a maximum score of 25 overall. One-Way ANOVAs were performed to see there was a difference between the score given to the workplace health friendliness of an organisation and the BMI or obesity levels of the employee who works in that organisation. As before, three separate tests were ran, each grouping the BMI in different ways. A One-Way ANOVA found no significant difference in the workplace health friendliness score across the original 5 BMI groups,  $F(17, 111) = .684$ ;  $p = .812$ . A One-Way ANOVA found no significant difference in workplace health friendliness scores when BMI was grouped into underweight/normal weight and overweight/obese,  $F(17, 111) = .427$ ;  $p = .976$ . A third One-Way ANOVA also found no significant difference in workplace health friendliness scores when those with normal BMI were in one group and everyone else in the other group,  $F(17, 111) = .290$ ;  $p = .997$ . The hypothesis that there will be significantly lower levels of obesity in staff who work in organisations that scored highly on the Workplace Health Friendliness Scale was rejected.

Hypothesis 4: That there would be lower frequency in absenteeism in organisations that scored highest on the Workplace Health Friendliness Scale.

Absolute absenteeism and the total Workplace Health Friendliness score were used. In order to test for this, a correlation was performed and no significant results were found,  $r = -.067$ ,  $p = .453$ . As absolute absenteeism took vacation as

a reason for being absent, a further correlation was carried out, this time looking for a relationship between number of whole or part days absent due to own health and total workplace health friendliness score. Again, no significant results were found for whole days missed due to own health,  $r = -.005$ ,  $p = .95$ , or for part days missed due to own health,  $r = -.007$ ,  $p = .940$ . Even taking into account the different methods of calculating absenteeism, the hypothesis that there would be lower frequency in absenteeism in organisations that scored highest on the Workplace Health Friendliness Scale was rejected.

#### Results for Sub-hypotheses

For each of the sub-hypotheses, the DV was frequency of absenteeism. As the measurement from absenteeism counts vacation days, a One-Way ANOVA was run twice for each sub-hypothesis, first using the raw hours or Absolute Absenteeism and then using the data from the questions number of whole and part days missed due to own health.

*Sub-Hypothesis 1: That there would be a difference in absenteeism depending on education level.*

A One-Way ANOVA found no significant difference when Absolute Absenteeism was used,  $F(3, 125) = 1.488$ ;  $p = .221$ . Likewise, no significant difference was found for whole days missed due to own health,  $F(3, 125) = 2.203$ ;  $p = .091$  or for part days missed due to own health,  $F(3, 125) = 1.089$ ;  $p = .356$ . The hypothesis that there would be a difference in absenteeism depending on education level was rejected.

*Sub-Hypothesis 2: That there would be a difference in absenteeism depending on the number of children a person has.*

A One-Way ANOVA found no significant difference when using Absolute Absenteeism,  $F(4, 124) = .930$ ;  $p = .449$ . No significant difference was found for whole days missed due to own health,  $F(4, 124) = 1.207$ ;  $p = .311$  or for part days missed due to own health  $F(4, 124) = .627$ ;  $p = .644$ . The hypothesis that there would be a difference in absenteeism depending on the number of children a person has was rejected.

### Other Findings

While these were not part of the original hypothesis, the findings from other studies, for example, Bilgin and Mine, (2012), Beemsterboer et al. (2009) and Schalk and van Rijckevorsel, (2007) suggested that the following factors were worthy of further investigation in relation to absenteeism and BMI.

An Independent Samples T Test found no significant difference between absenteeism levels for people who had the option to work flexi-time and those who did not,  $t = .382 (127)$ ,  $p = .703$ . A second Independent Samples T-Test found no significant difference in the number of whole days missed due to own health,  $t = -.615(127)$ ,  $p = .540$ , or in the number of part days missed due to own health,  $t = .315(127)$ ,  $p = .754$  across those who had to option to work flexi-time and those who did not.

Sedentary type jobs and more active jobs were also compared for differences in BMI levels. Social Care was classed as an active job due to the amount of standing, walking and lifting it involves (Shatkin, 2011). IT, finance and administration were classed as sedentary as defined by the US Social Security Administration due to the amount of sitting involved (US Legal, 2013). The latter three were grouped together to create a relatively equal group size to that of the social care sample. An Independent Samples T Test found a significant difference in BMI levels between sedentary jobs and active jobs,  $t = -.2.625(49)$ ,  $p = .012$ .

The first question in the Recent Physical Health Measure, assessing one's own general overall health was examined in relation to BMI. A One-Way ANOVA found a significant difference between groups,  $F (4, 124) = 10.300$ ,  $p = .000$  (See table 5 for mean and standard deviation). Specifically, Tukey post hoc analysis found there was a significant difference in perceived general health of those who were underweight compared to those who were Obese Type1 or Obese Type 2,  $p = .020$  and  $p = .000$ ; there was a significant difference in perceived general health of those who were normal weight compared to those who were Obese Type1 or Obese Type 2,  $p = .040$  and  $p = .000$  and there was a significant difference in perceived general health of those who were overweight compared to those who were Obese Type 2,  $p = .000$ . There was also a significant difference in perceived general health of those who were Obese Type 1 and Obese Type 2,  $p = .045$ .

There was a significant difference in perceived physical health in the Obese Type 2 group compared to all other groups,  $p = .000$  for underweight, normal weight and overweight and  $p = .045$  for Obese Type 1 (See Table 6). As there was a large size difference between the five original BMI groups, an Independent Samples T Test was performed using the grouping underweight/normal weight and overweight/obese. The Independent Samples T Test found significant differences between groups,  $t = 2.731 (127)$ ,  $p = .007$ .

*Table 5: Mean and Standard Deviation for general health between BMI groups*

| <b>BMI Group</b> | <b>Mean</b> | <b>Std. Deviation</b> |
|------------------|-------------|-----------------------|
| Underweight      | 4.60        | .548                  |
| Normal weight    | 4.17        | .564                  |
| Overweight       | 4.10        | .672                  |
| Obese Type1      | 3.56        | .726                  |
| Obese Type2      | 2.60        | .548                  |

*Table 6: Differences between BMI groups for perception of own general health*

| <b>(I) Q11 BMI</b> | <b>(J) Q11 BMI</b> | <b>Sig.</b> |
|--------------------|--------------------|-------------|
| Underweight        | Normal weight      | .553        |
|                    | Overweight         | .421        |
|                    | Obese Type1        | .022        |
|                    | Obese Type2        | .000        |
| Normal weight      | Underweight        | .553        |
|                    | Overweight         | .976        |
|                    | Obese Type1        | .040        |
|                    | Obese Type2        | .000        |
| Overweight         | Underweight        | .421        |
|                    | Normal weight      | .976        |
|                    | Obese Type1        | .117        |
|                    | Obese Type2        | .000        |
| Obese Type1        | Underweight        | .022        |
|                    | Normal weight      | .040        |
|                    | Overweight         | .117        |
|                    | Obese Type2        | .045        |
| Obese Type2        | Underweight        | .000        |
|                    | Normal weight      | .000        |
|                    | Overweight         | .000        |
|                    | Obese Type1        | .045        |

## **Discussion**

When the hypotheses were examined using the appropriate statistical tests, the three main hypotheses and the two sub-hypotheses were rejected. There are a number of possible explanations for this which will be discussed below. Other statistically significant results were found, such as a significant difference in BMI levels between active and sedentary jobs and a significant difference in perceived general health across the different BMI groups. The implications of these will also be discussed.

### Absenteeism and BMI

The hypothesis that there will be higher frequency of absences for those who are obese compared to their non-obese counterparts was not supported in the current study. Neither was there statistical evidence that there was a difference in the frequency of absenteeism in those who had a BMI over under 25 and those with a BMI of 25 or above. Similarly, no significant difference in absenteeism was found between those who had a healthy BMI – between 18.5 and 24.9 – and everyone else. These results go against the findings of the studies that were referred to in the literature review, specifically those of Zarling, Hartz, Laren and Rimm (1977) who found that overweight was positively related to sickness absence. Parkes (1987) had a similar finding as did Moreau et al, (2004). Likewise, a large-scale study in America (Finklestein, et al, 2005) reported that obesity significantly increases absenteeism.

One factor which may have influenced the findings could be the calculation method for absenteeism. In accordance to instructions from the WHO Work and Health Performance Questionnaire, absenteeism was measured in raw hours and included both health related and non-health related reasons such as vacation. This is further exacerbated by the fact that the survey was carried out during peak holiday season – May and June. With that in mind, it was deemed appropriate to investigate individual questions, specifically the number of days and part days in the last month participants were absent due to their own mental or physical health. The number of whole and part days missed due to own health was then investigated in relation to the different BMI groupings. No significant difference was found. Therefore, even allowing for possible drawbacks with the calculation

of absenteeism, the hypothesis that there would be higher frequency of absences for those who are obese compared to their non-obese counterparts was rejected. Another factor to influence this result may have been the low incidence of obesity in the current sample. The occurrence of obesity in the present study was 11% which is half the national average (Oireachtas, 2011). Therefore, it would seem the sample was not representative of the average Irish population in terms of weight which may help explain the rejection of the first hypothesis.

#### Presenteeism, BMI and General Health

As presenteeism (being present but not as productive as usual) is seen as being as important as absenteeism in terms of loss of productivity and costs associated with it, it was compared with the different BMI groups to see if weight affects self-perceived performance rating. No significant difference between the groups was found. However, as the normal weight group had one of the lowest performance scores and Obese Type 1 and the underweight group, had the highest, the healthy BMI (normal weight) group was compared with everyone else (See table 5). When this was done, a significant difference was found, with the normal weight scoring lower than the other group. Examining the raw data was worthwhile as it uncovered that the two groups that rated their performance highest were the people with the lowest weight and those with some of the highest weights. It was to be expected that those who were underweight rated their performance very highly as characteristics of people who are underweight include being high achievers and the desire to be the best (Davison and Neale, 2001). The fact that those who fell into the Obese Type 1 category almost matched the score for the underweight grouping may be explained by the need of people who are obese to constantly prove that they are capable of doing the job. This is because fat has negative connotations such as being unsuccessful, having no self-control and being less intelligent (Davison and Neale, 2001). While this might suggest that high BMI levels do not have a negative bearing on productivity level, it should be noted that the lowest performance score belonged to those who were classed as Obese Type 2. This suggests that being very obese does impact on productivity.

This theory is supported by the finding that people who were obese rated their health as significantly poorer than the rating given by those who were normal or

underweight. It confirmed the reports by the Health Service Executive (2008) that obesity is strongly linked to ill health. This finding in itself should show employers that general health is affected by BMI and although it may not be having an impact on the absentee levels at the moment, it should not be ignored. It may have an effect in the future, if health deteriorates further or if the economy improves and there is less fear of redundancy.

#### Workplace Involvement, BMI and Absenteeism

The present study did not support the hypothesis that there would be significantly lower levels of obesity in staff who worked in organisations that scored highly on the Workplace Health Friendliness Scale. Furthermore, there was a low average rating of workplace health friendliness, with no one giving any organisation the top score of 25. The highest score achieved was 22 and that was a single occurrence. The mean score was 12 out of a possible 25. The low level of reported obesity coupled with the low average rating of workplace health friendliness helps explain the rejection of the hypothesis in this instance. However, workplace health friendliness relating to issues such as the provision of nutritious food scored the highest mean rating of all the questions pertaining to this issue at 2.88 out of a possible 5. This may suggest that workplaces are attempting to provide healthier food and this may be contributing to a lower overall BMI. However, without knowing how long a health promotion programme has been in place and without having previous BMI information available, it is not possible to speculate on this. Furthermore, the average occurrence for obesity in the present study was 11% which is half of the national average (Oireachtas, 2011). This alone, may contribute to the non-statistically significant finding in this instance.

Likewise, there was no evidence in the current research that there were lower levels of absenteeism in organisations that scored highest on the WHF scale. As noted above, there was a low average rating of workplace health friendliness, which may have affected the results for this hypothesis. In addition, the literature was inconclusive regarding evidence to support this theory. Hassard et al. (2012), Kumar and Prevost (2011) and Berter, (1990) suggests that these programmes not only benefit the organisation financially but the employee also by improving their health. Conversely, van Dongen, Proper, van Wier, van der Beek, Bongers, van



Mechelen and van Tulder (2011) had inconclusive findings. In their review they reported benefits to the organisation in terms of costs only in the case of non-randomised studies (NRS). Randomised controlled trials (RCT) produced no significant findings in this regard. In addition, the present study was not longitudinal in design, unlike many of the aforementioned studies so this may be another contributing factor to this result. Given the evidence that WHP programmes need not have an exorbitant price tag attached, (Perry, 2012; Hassard et al, 2012) and taking into account the large body of evidence which suggests they do have benefits and may potentially save money, it is hoped that more organisations improve their health friendliness. The current study notwithstanding, if health friendliness increases, much of the literature suggests workplace health friendliness programmes could improve absentee levels as well as improve performance.

#### The Influence of Children, Flexi-Time and Education on Absenteeism

The first sub-hypothesis predicted that there would be fewer absences in those who have a higher than degree level education. This was based on the findings by Bigin and Mine, (2012) and Beemsterboer et al. (2007). The current study found no evidence to support this. This is discouraging as positive findings in this area may have persuaded employers to invest in the education of its staff with a double accomplishment – to increase knowledge and to decrease the cost associated with absenteeism. Bigin and Mine, (2012) also found that number of children negatively affected absenteeism. The present study found no link in this regard. It is assumed that the negative correlation with children and absenteeism that Bigin and Mine, (2012) found is related to individuals finance. It is possible that no significant findings were made in the present study in this regard as financial matters are an issue for most people in this economic climate, not just for those who have children.

It was thought that having the option to work flexi-time would have an impact on absenteeism. This was not found to be the case. Perhaps although the option is there, it isn't utilised (Ledikwe, Ello-Martin and Rolls, 2005). Added to that is the lengthening of the working day due to competitiveness and the economy. It is possible that although flexible working is offered, it is not of any advantage due to longer working hours.

### Sedentary versus Active Occupations

In order to see which occupations would benefit most from organisational involvement, an occupation that was seen as being active was compared to traditionally sedentary occupations in relation to their BMI levels. Social care was seen as an active occupation as there is generally little time to sit down and time not spent moving is spent standing. IT, administration and finance were classed as sedentary jobs, with much of the time spent at work being spent sitting at a desk. Those in sedentary jobs had significantly higher BMI than those in the more active social care jobs, making it more important to incorporate exercise or movement into the workplace such as encouragement to use the stairs, group walks at lunch time or necessitating the need to walk by locating resources such as photocopiers, policy manuals and procurement catalogues in a common area (Perry, 2012). Taking the results of the present study into account, that people with a higher BMI are more likely to feel unwell, it is prudent for the organisation involved to improve this matter. The move may save the organisation money in the long term in absence and presenteeism costs.

### Limitations to present study.

The present economic climate motivated the current study. However, a fear of redundancy could mean that absenteeism is not as much of an issue as it previously was (CIPD, 2012). This may explain some of the non-significant findings with regard to absenteeism. Another possible reason why the findings of the current study did not concur with previous research is sample size. The sample size of 129 may have been too small to find significant differences. The sample sizes in the previously referenced studies were very large; in some cases as many as 20,000 participants took part. Additionally, a more randomised sampling technique may have improved this. Furthermore, while a longitudinal design was not practical in the current study, the research on which this study is based primarily used a longitudinal design. A longitudinal design is better suited to the research question and would have produced more generalizable, realistic results. This type of design would have also allowed the investigation of long term absence which, according to Haswell, (2003) is the most detrimental type of absence.

There are both advantages and disadvantage to the survey method. For example, this method has been criticised due to a possibility of social desirability bias or interviewer bias (Robson, 2011). The present research aimed to overcome these issues by the use of self-administered surveys, thus eliminating the possibility of interviewer bias and due to the level on confidentiality and anonymity, attempted to decrease the possibility of social desirability bias. Other issues such as ambiguities or misunderstandings were addressed by the use of a pilot study. However, as the current study relied on self-reporting for all the information in order to overcome some of the issues highlighted above, it is possible that under reporting occurred for weight and other pertinent factors such as number of days absent and over reporting occurred for performance and hours worked. Rothman, (2008) notes that self reported data is often inaccurate.

Finally, the tool of BMI as a measurement for health is a controversial one. This has been mentioned in the literature review and while it remains a standard tool for the measurement of obesity in a large population due to its ease of use and lack of materials or cost (WHO, 2013; Centre for Disease Control and Prevention, 2011), it's limitations in accurately measuring obesity should be emphasised.

## **Conclusion**

This section will reiterate the main findings in the current study highlight their relevance in real situations and put forward recommendations for employers, the government and for further research.

### Key Findings

While the literature suggested that absentee levels would be affected by a person's BMI, this was not substantiated in the current research. There were a number of reasons this was not found. These reasons include sample size, self-reporting and the sampling technique. In addition, workplace friendliness was shown to have little difference on either BMI or absentee levels of employees. It is likely that this was because organisations in general were not rated very highly on the extent to which they are health friendly.

However, it was found that people with a higher BMI are more likely to rate their health as poor compared to their normal weight counterparts. This is an important finding as, despite the sampling issues highlighted, it agrees with the literature that high BMI leads to ill health. As was discussed, it is possible that it is merely a sign of the economy that absentee levels are not similarly impacted.

Finally, it was found that people in more sedentary type jobs are more likely to be overweight or obese. This seems obvious but is worth highlighting as it emphasises the need for certain organisations in particular to examine their role in reducing the weight of the population. Given that people with a high BMI are more likely to feel unwell, it is in the interest of the organisation that they help employees reduce weight with the intention of reducing illness in the future.

### Recommendations for employers

If, as the results in the current and previous studies suggest, that obesity is linked to a perception of poor physical health, employers should take notice. It would be prudent to tackle this issue at the workplace level now while employees are less likely to be absent for fear of redundancy (CIPD, 2012). The economic situation will improve, so ensuring employees are healthy now will not only help improve the absence level in a more economically stable future but it will instil a culture of health and employer caring (Hassard et al. 2012). Since the advance of

technology, employees may sit at their desks for up to eight hours a day, with no need to leave their desk (Perry, 2012). Employers of sedentary occupations need to take note of these issues to a greater extent than employers of active occupations and would benefit by incorporating physical activity into the regular working day (Perry, 2012).

#### Recommendations for the Government

The Irish Government has pledged to tackle the obesity problem and gives some responsibility to organisations in this regard (Treacy, 2005). If the government is serious about solving this dangerous health epidemic, they should work with large organisations to encourage workforces to physically move. There are many government initiatives that have been successful in other countries that may be adapted in Ireland. For example, in Belgium, the government created the Institute for Health Promotion. It includes workplace health promotion and is active in various settings including many workplaces (Hassard et al. 2012). Closer to home, a healthy workplace initiative called Work Well was launched in Northern Ireland in 2004. This initiative developed healthy workplace programmes with 20 small businesses and worked with them to develop and implement a health plan. The outcome for this was reported to be very positive (Hassard et al 2012). Enterprises such as those mentioned above could be adopted in Ireland to strengthen the government's resolve to deal with the obesity crisis.

#### Recommendations for Future Research

Due to the limitations of the present study, further similar research is needed in Ireland. Obesity is a significant problem in this country and, due to the amount of time our lives are spent working; it is a subject that warrants more research in relation to the role organisations can play. It would be useful to implement health programmes in sedentary workforces and, over a period of a number of years, see if such programmes have any impact on the general BMI or health of the staff. While there is mixed evidence of these programmes having a significant impact on the health of the participants, it is worthwhile trying, if not for the health of the employees, then for the financial health of the company (Hassard et al. 2012).

## References

- Avello, S. (2010) What is Presenteeism and How is it Effecting our Workplace? [Online] Available from [http://www.hr.com/en/app/blog/2010/10/what-is-presenteeism-and-how-is-it-affecting-our-w\\_gf3yjhg.html](http://www.hr.com/en/app/blog/2010/10/what-is-presenteeism-and-how-is-it-affecting-our-w_gf3yjhg.html) [Accessed on 19/8/2013]
- Ayling, L. (2012). Absence Measurement and Management. *CIPD Factsheet*. [Online] Available from [http://www.cipd.co.uk/hr-resources/factsheets/absence-measurement-management.aspx#link\\_5](http://www.cipd.co.uk/hr-resources/factsheets/absence-measurement-management.aspx#link_5) [Accessed on 15/3/2013].
- Bean, S. (2005) Absence Management Needs Long-Term Remedy. *Occupational Health*. 57.
- Beemsterboer, W., Stewart, R., Groothoff, J. & Nijhuis, F. (2009) A Literature Review on Sick Leave Determinants (1985-2004). *International Journal of Occupational Medicine and Environmental Health*, 22 (2): 169-179.
- Benden, M., Congleton, J.J., & Fink, R. (2011) An In-Situ Study of the Habits of Users that Impact Office Chair Design and Testing. *Journal of the Human Factors and Ergonomics Society*, 1(53): 38-49.
- Bertera, R.L. (1990) The Effects of Workplace Health Promotion on Absenteeism and Employment Costs in a Large Industrial Population. *American Journal of Public Health*, 80 (9): 1101-1105.
- Bilgin & Mine (2012) The Cost of Absenteeism and the Effect of Demographic Characteristics and Tenure on Absenteeism. *Interdisciplinary Journal of Contemporary Research in Business*, 4 (5): 1142-1151.
- Branca, F., Nikogosian, H. & Lobstein, T. [Editors] (2007) The Challenge of Obesity. World Health Organisation. [online]. Available from [http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0008/98243/E89858.pdf](http://www.euro.who.int/__data/assets/pdf_file/0008/98243/E89858.pdf) [Accessed on 15/3/2013].
- Brody, J.E. (2010) Risks for Youths Who Eat What They Watch. *New York Times*, April 20. [online] Available from [http://www.nytimes.com/2010/04/20/health/20brod.html?\\_r=0](http://www.nytimes.com/2010/04/20/health/20brod.html?_r=0) [Accessed on 10/06/2013].
- Brownell, K.D. & Horgen, K.B. (2004) *Food Fight: The Inside Story of the Food Industry, America's Obesity Crisis and What We Can Do About It*. New York: Contemporary Books.
- Cawley, J. (2006) Markets and childhood obesity policy. *The Future of Children*. 16(1): 69-88.
- Centre for Disease Control and Prevention (2011) About BMI for Adults [Online] Available from [http://www.cdc.gov/healthyweight/assessing/bmi/adult\\_bmi/index.html#Other%20Ways](http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html#Other%20Ways) [Accessed on 2/09/2013].

- CIPD (2012) Absence Management 2012 [Online] Available from <http://www.cipd.co.uk/binaries/5982%20AbMan%20SR%20%28WEB%29.pdf> [Accessed on 16/3/2013].
- Cohen, D.A. & Farley, T.A. Eating as an Automatic Behaviour. *Preventing Chronic Diseases*. 5(1) [Online] Available from [http://www.cdc.gov/pcd/issues/2008/jan/07\\_0046.htm](http://www.cdc.gov/pcd/issues/2008/jan/07_0046.htm) [Accessed on 18/3/2013].
- Cohen, A. & Golan, R. (2007) Predicting absenteeism and turnover intentions by past absenteeism and work attitudes: An empirical examination of female employees in long term nursing care facilities. *Career Development International*, 12 (5): pp.416-432.
- Cutler, D.M., Glaeser, E.L. & Shapiro, J.M. (2003) Why have Americans become more obese? *Journal of Economic Perspectives* 17(3): 93-118.
- Davison, G.C. & Neale, J.M. (2001) *Abnormal Psychology*, 8<sup>th</sup> Edition. USA: John Wiley and Sons.
- Davey, M.M., Cummings, G., Newburn-Cook, C.V. & Lo, E.A. (2009) Predictors of Nurse Absenteeism in Hospitals: A Systematic Review. *Journal of Nursing Management*. 17: 312-330.
- Deeks, J.J., Dinnes, J., D'Amico, R., Sowden, A.J., Sakarovitch, C., Song, F., Petticrew, M. and Altman, D.G. (2003) Evaluating Non-Randomised Intervention Studies. *Health Technology Assessment*. 7(27): 1-173.
- Deurenberg, P. & Yap, M. (1999) The Assessment of Obesity: Methods for Measuring Body Fat and Global Prevalence of Obesity. *Best Practice and Research in Clinical Endocrinology and Metabolism*. 13(1): 1-11.
- Duncan, S. (2011) Peer-Support Process. *Occupational Health*. 63(5): 19-20.
- Drach-Zahavy, A. (2008) *Workplace Health Friendliness Scale*.
- Drach-Zahavy, A (2008a) Workplace Health Friendliness. A Cross Level Model for Predicting Workers Health. *Journal of Occupational Health Psychology*. 13(3): 197-213.
- Facebook (2013) How Advertising and Sponsored Stories Work. [Online] Available from <https://www.facebook.com/about/privacy/advertising> [Accessed on 2/09/2013].
- Finkelstein, E., Fiebelkorn, I.C. & Wang, G. (2005) The Costs of Obesity Among Full-time Employees. *American Journal of Health Promotion*. 20(1): 45-51.
- Garaulet, M., Ordovas, J.M., & Madrid, J.A. (2010) The Chronobiology, Etiology and Pathophysiology of Obesity. *International Journal of Obesity*. 34: 1667-1683.
- Gearhardt, A.N., Corbin, W.R & Brownell, K.D. (2009) Preliminary validation of the Yale Food Addiction Scale. *Appetite*. 52: 430-436.

Glanz, K. & Seewald-Klein, T. (1986) Nutrition at the worksite: an overview. *Nutrition Edition*, 18: 1-12.

Hassard, J., Wang, D., Cox, T., Muylaert, K., Namsyl, A., Kazenas, A. & Flaspoler, E. (2012) Motivation for Employers to Carry out Workplace Health Promotion. [Online] Available from [https://osha.europa.eu/en/publications/literature\\_reviews/motivation-for-employers-to-carry-out-workplace-health-promotion](https://osha.europa.eu/en/publications/literature_reviews/motivation-for-employers-to-carry-out-workplace-health-promotion) [Accessed on 2/09/2013].

Haswell, M. (2003) Dealing with Employee Absenteeism. *Management Services*. 47(12): 16-17.

Health Service Executive (2008) HSE Framework for Action on Obesity 2008-2012. [online]. Available from <http://www.getirelandactive.ie/content/wp-content/uploads/2011/12/HSE-Framework-for-Action-on-Obesity.pdf> [accessed on 12/3/2013].

Heinen, L. & Darling, H. (2009) Addressing Obesity in the Workplace: The Role of Employers. *The Milbank Quarterly*. 87(1): 101-122.

Hyman, M. (2006) *UltraMetabolism: The Simple Plan for Automatic Weight Loss*. New York: Atria Books.

IBEC (2011) Employee Absenteeism – A Guide to Managing Absence. [Online] Available from <http://www.ibec.ie/IBEC/Press/PressPublicationsdoclib3.nsf/vPages/Newsroom~ibec-launches-new-report-on-absence-levels-at-work-25-08-2011?OpenDocument?OpenDocument> [Accessed on 16/3/2013].

Irish Times Top 1000 Guide to Business (2013) [Online] Available from <http://www.top1000.ie/> [Accessed on 21/3/2013]

Jackson, S.L. (2012) *Research Methods and Statistics – A Critical Thinking Approach*. USA: Wadsworth.

Jitendra, M., Courtney, B., Kathryn, M., Mithilesh, M. & Bharat, M. (2011) Obesity in the Workplace – An International Outlook. *Advances in Management*. 4 (3): 7-17.

Jupp, V. [Editor] (2001) *The SAGE Dictionary of Social Research Methods*. London: Sage.

Kessler, R.C., Barber, C., Beck, A., Berglund, P., Cleary, P.D., McKenas, D., Pronk, N., Simon, G., Stang, P., Ustun, T.B. & Wang, P. (2003) *World Health and Work Performance Questionnaire*.

Knutson, K.L, Spiegel, K., Peney, P. & Van Cauter, E. (2007) The Metabolic Consequences of Sleep Deprivation. *Sleep Medicine Reviews*. 11(3): 163-178. [Online] Available from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1991337/> [Accessed on 15/06/2013].

Krisberg, K. (2007) Employers making room for health promotion in workplace. *Nation's Health*, 32(7): 1-13.



Kumar, S., McCalla, M. & Lybeck, E. (2009) Operational Impact of Employee Wellness Programs: A Business Case Study. *International Journal of Productivity and Performance Management*, 58 (6): 581-597.

Kumar, S. & Prevost, J.K. (2011) An Ounce of Prevention: Revenue and Cost Economics of Partnering with Health and Wellness Services. *Journal of Revenue and Pricing Management*, 10: 401-423.

Lapan, S.D. & Quartaroli, M.T. [Editors] (2009) *Research Essentials: An Introduction to Designs and Practices*. USA: John Wiley and Sons.

Ledikwe, J.H., Ello-Martin, J.A. and Rolls, B.J. (2005) Portion Sizes and the Obesity Epidemic. *The Journal of Nutrition*.

Loureiro, M.L. and Nayga, R. (2004) Analysing world health differences on obesity rates: some policy implications. Presented at a AAEA meeting. 1-4 August, Colorado.

McCormick, T. (2009) Strategic Cost Reduction: Now is the time for skillful budgeting. *Accountancy Ireland*. 41 (1).

McFarlin, S. K. & Fals-Stewart, W. (2002) Workplace Absenteeism and Alcohol Use: A Sequential Analysis. *Psychology of Addictive Behaviours*, 16 (1): 17-21.

McConahy, K.L., Smiciklas-Wright, H., Mitchell, D.C. & Picciano, M.F. (2002) Portion size of common foods predicts energy intake among preschool children. *Journal of the American Dietetic Association*. 104: 340-347.

Moreau, M., Valente, F., Mak, R., Pelfrene, E., de Smet, P., De Backer, G. & Kornitzer, M. (2004) Obesity, Body Fat Distribution and Incidence of Sick Leave in the Belgian Workforce: The Belstress Study. *International Journal of Obesity*. 28: 574-582.

National Institute of Health (1998) Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults. [Online] Available from [http://www.nhlbi.nih.gov/guidelines/obesity/ob\\_gdlns.pdf](http://www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.pdf) [Accessed on 17/3/2013].

Ni Mhurchu, C., Aston, L.M. & Jebb, S.A. (2010) Effects of Worksite Health Promotion Interventions on Employee Diets: A Systematic Review. *BMC Public Health*, 10 (62).

Obesity Ireland (2013) About BMI and Obesity. [Online] Available from <http://www.obesityireland.ie/aboutobesity1.html> [Accessed on 04/08/2013].

Ogden, C.L., Carroll, M.D., Kit, B.K. and Flegal, K.M. (2012) *Prevalence of Obesity in the United States, 2009-2010*. NCHS data brief, no 82. Hyattsville, MD: National Center for Health Statistics.

Oireachtas. (2011) Obesity – A Growing Problem? [Online] Available from [http://www.oireachtas.ie/parliament/media/housesoftheoireachtas/libraryresearch/spotlights/spotObesity071111\\_150658.pdf](http://www.oireachtas.ie/parliament/media/housesoftheoireachtas/libraryresearch/spotlights/spotObesity071111_150658.pdf) [Accessed on 12/3/2013].

- Ones, D.S., Viswesvaran, C. & Schmidt, F.L. (2003) Personality and Absenteeism: A Meta-Analysis of Integrity Tests. *European Journal of Personality*. 17: 19-38.
- Parkes, K.R. (1987) Relative Weight, Smoking and Mental Health as Predictors of Sickness and Absence from Work. *Journal of Applied Psychology*. 72 (2): 275-286.
- Parikh, N.I., Pencina, M.J., Wang, T.J., Lanier, K.J., Fox, C.S., D'Agostino, R.B. & Vasan, R.S. (2007) Increasing trends in incidence of overweight and obesity over 5 decades. *The American Journal of Medicine*. 120(3): 242-250.
- Plunkett, J. (2010) Television viewing increases despite rise of internet and social media. *The Guardian*. August 19. [online] Available from <http://www.guardian.co.uk/uk/2010/aug/19/television-viewing-increases-internet> [Accessed on 21/06/2013].
- Prasad, M., Wahlqvist, P., Shikar, R. & Shih, Y-C.T. (2004) A Review of Self-Reported Instruments Measuring Health-Related Work Productivity: A Patient-Reported Outcomes Prepective. *PharmacoEconomics*. 22(4): 226-243.
- Robson, C. (2011) *Real World Research 3<sup>rd</sup> Edition*. UK: John Wiley and Sons.
- Rosin, O. (2008) The Economic Causes of Obesity: A Survey. *Journal of Economic Surveys*. 22(4): 617-647.
- Rothman, K.J. (2008) BMI-Related Errors in the Measurement of Obesity. *International Journal of Obesity*. 32 556-559.
- Ruthig, J.C., Chipperfield, J.G., Newall, N.E., Perry, R.P. & Hall, N.C. (2007) Recent Physical Health Measure,
- Schalk R. & van Rijckevorsel, A. (2007) Factors Influencing Absenteeism and Intention to Leave in a Call Centre. *New Technology, Work and Employment*. 22 (3): 260-274.
- Serxner, S.A., Gold, D.B. & Bultman, K.K. (2001) The Impact of Behavioural Health Risks on Worker Absenteeism. *The Journal of Occupational and Environmental Medicine*. 43(4): 327-354.
- Shatkin, L. (2011) Hate being chained to your desk all day? 20 jobs to get you moving. [Online] Available from <http://jobs.aol.com/articles/2011/08/19/hate-being-chained-to-your-desk-all-day-20-jobs-that-keep-you-m/> [Accessed on 2/09/2013].
- Smith, E.E., Nolen-Hoeksema, S., Fredrickson, B. & Loftus, G.R. (2003) *Introduction to Psychology 14<sup>th</sup> Edition*. USA: Thomson Learning.
- Stender, S., Dyerberg, J. and Astrup, A. (2007) Fast food: unfriendly and unhealthy. *International Journal of Obesity*. 31, 887-890.
- Stunkard, A.J., Harris, J.R., Pedersen, N.L. and McClearn, G.E. (1990) The body-mass index of twins who have been reared apart. *New England Journal of Medicine*. 322(21): 1483-1487.

- Tomer, J. (2011) What Causes Obesity and Why Has it Grown so Much. *Challenge*. 54(4): 22-49.
- Tozzi, J. (2013) Employers Love Wellness Programmes. But Do They Work? *Bloomberg Businessweek*. [Online] Available from <http://www.businessweek.com/articles/2013-05-06/employers-love-wellness-programs-dot-but-do-they-work> [Accessed on 22/06/2013].
- Treacy, J. [Editor] (2005) Obesity: The Policy Challenges. The Report of the National Taskforce on Obesity. [Online]. Available from [http://www.dohc.ie/publications/pdf/report\\_taskforce\\_on\\_obesity.pdf?direct=1](http://www.dohc.ie/publications/pdf/report_taskforce_on_obesity.pdf?direct=1) [Accessed on 12/3/2013].
- Trogdon, J.G., Finkelstein, E.A., Hylands, T., Dellea, P.S. & Kamel-Bahl, S.J. (2008) Indirect Costs of Obesity: A Review of the Current Literature. *International Association for the Study of Obesity*. 9: 489-500.
- US Legal Definitions. (2013) Sedentary Work Law and Legal Definition. [Online] Available from <http://definitions.uslegal.com/s/sedentary-work/> [Accessed on 2/09/2013].
- van Dongen, J.M., Proper, K.I., van Wier, M.F., van der Beek, A.J., Bongers, P.M., van Mechelen, W. & van Tulder, M.W. (2011) Systemic Review on the Financial Return of Worksite Health Promotion Programmes Aimed at Improving Nutrition and/or Increasing Physical Activity. *International Association for the Study of Obesity*. 12: 1031-1049.
- Variyam, J.N. and Cawley, J. (2006) Nutrition Labels and Obesity. NBER Working Paper 11956. [online] Available from <http://www.nber.org/papers/w11956> [Accessed on 21/6/2013].
- Vellinga, A., O'Donovan, D. & De La Harpe, D. (2007) Length of Stay and Associated Costs of Obesity Related Hospital Admissions in Ireland. [Online] Available from <http://www.biomedcentral.com/1472-6963/8/88/> [Accessed on 9/3/2013].
- Weiczner, J. (2013) Your Company Wants to Make You Healthy. *Wall Street Journal*. [Online] Available from <http://online.wsj.com/article/SB10001424127887323393304578360252284151378.html> [Accessed on 22/6/2013].
- Wisker (2001) *The Postgraduate Research Handbook*. New York: Palgrave.
- World Health Organisation (WHO) (2013) Obesity and Overweight. [Online] Available from <http://www.who.int/mediacentre/factsheets/fs311/en/> [Accessed on 17/3/2013].
- World Health Organisation (WHO) (1990) Diet, Nutrition and the Prevention of Chronic Diseases. [Online] Available from [http://whqlibdoc.who.int/trs/WHO\\_TRS\\_797\\_%28part1%29.pdf](http://whqlibdoc.who.int/trs/WHO_TRS_797_%28part1%29.pdf) [Accessed on 12/3/2013].

## Appendix 1: Pilot Survey

My name is Aoife Keane and I am studying for a Masters in Human Resource Management. As part of this course, I am carrying out research on issues relating to health and workplace practices. In order for me to conduct this research, I would really appreciate if you could fill in this short questionnaire. It will ask questions about your demographics, including your relationship status, age, gender, weight, height, education and occupation. There are also questions about your own health and your work environment. The completion of this questionnaire will significantly contribute to our knowledge about the work environment.

It should take no more than 5 minutes to complete and you have the right to withdraw at any time. All participation is voluntary. No person's name or organisation's name will be collected. All data gathered will remain anonymous and confidential and will only be used for the purpose of this study. If you wish, I can send you a copy of the results by request.

I would greatly appreciate it if you could complete this survey by the 15th of June 2013. Every question should be answered. Thank you for your time. If you have any questions, please feel free to email me on [aoife.keane@student.ncirl.ie](mailto:aoife.keane@student.ncirl.ie)

|  |  |
|--|--|
| 1) Please state your consent to take part in this survey.                      |  |
| I agree to take part in this survey and understand I can withdraw at any time. |  |

First, I'd like to ask some questions about you.

|                      |  |
|----------------------|--|
| 2) What age are you? |  |
|                      |  |

|                            |  |
|----------------------------|--|
| 3) Are you male or female? |  |
| Male                       |  |
| Female                     |  |

|                              |  |
|------------------------------|--|
| 4) What is your nationality? |  |
|                              |  |

|  |  |
|--|--|
| 5) Which of these best describes your current relationship status? |  |
| Married or cohabiting  |  |
| Separated  |  |
| Divorced   |  |
| Widowed  |  |
| In a relationship  |  |
| Not in a relationship  |  |

|   |  |
|---|--|
| 6) If you have children, please write their ages here. If you don't have children, please write "none". |  |
|   |  |

|   |  |
|---|--|
| 7) What is the highest level of education you have completed? |  |
| Up to and including Junior Cert (or equivalent)               |  |
| Leaving Cert (or equivalent)                                  |  |
| 3rd level non degree, e.g. diploma, certificate               |  |

|                                 |  |
|---------------------------------|--|
| 3rd level degree                |  |
| Postgraduate Diploma or Masters |  |
| Doctorate or above              |  |

|                                 |  |
|---------------------------------|--|
| 8) What is your smoking status? |  |
| Smoker                          |  |
| Non-smoker                      |  |
| Ex smoker                       |  |

|  |           |      |      |      |     |
|--|-----------|------|------|------|-----|
| 9) Using the scale below, for your age, would you say your health is |           |      |      |      |     |
|  | Excellent | Good | Fair | Poor | Bad |
|  |           |      |      |      |     |

|  |                   |  |  |  |                    |
|--|-------------------|--|--|--|--------------------|
| 10)<br>Using the scale below, where 1 is "almost never true" and 5 is "almost always true", thinking about your own recent health, in the last 4 weeks, have you |                   |  |  |  |                    |
|  | Almost never true |  |  |  | Almost always true |
| Felt physically unwell   |                   |  |  |  |                    |
| Had physical symptoms such as stomach upset, headache or dizziness   |                   |  |  |  |                    |
| Wished you felt physically better  |                   |  |  |  |                    |

|                          |
|--------------------------|
| 11) What is your height? |
|                          |

|                          |
|--------------------------|
| 12) What is your weight? |
|                          |

Now, I'd like to ask you some questions about your job and working conditions.

|   |  |
|---|--|
| 13) What is your occupation? Please be as specific as possible without naming the organisation. |  |
|   |  |

|  |  |
|--|--|
| 14) How would you describe your work schedule?                                     |  |
| Regular schedule - roughly the same hours every day                                |  |
| Rotating schedule - e.g. working a day shift some days and a night shift others    |  |
| Irregular schedule - e.g. unpredictable hours controlled by situations or workload |  |

|  |  |
|--|--|
| 15) Is there an option to work flexi-time? |  |
| Yes  |  |
| No   |  |

|   |  |
|---|--|
| 16) About how many hours altogether did you work in the last 7 days? (If more than 97, please enter 97) |  |
|   |  |

|  |  |
|--|--|
| 17) How many hours does your employer expect you to work in a typical 7 day week? (If it varies, estimate the average. If more than 97, enter 97.) |  |
|  |  |

|  |  |
|--|--|
| 18) Now please think of your work experiences over the past 4 weeks (28 days). In the spaces provided below, write the number of days you spend in each of the following work situations.<br>In the past 4 weeks (28 days), how many days did you... |  |
| ...miss an entire work day because of problems with your physical or mental health? (Please include only days missed for your own health, not someone else's health.)  |  |

|   |  |
|---|--|
| ...miss an entire work day for any other reason (including vacation)?   |  |
| ...miss part of a work day because of problems with your physical or mental health? (Please include only days missed for your own health, not someone else's health.) |  |
| ... miss part of a work day for any other reason (including vacation)? (Please do not include entire work days missed.)   |  |
| Come in early, go home late or work on your day off?  |  |

19) About how many hours altogether did you work in the past 4 weeks (28 days)? (See examples below.)

*Examples for calculating hours worked in the past 4 weeks*

*40 hours per week for 4 weeks = 160 hours*

*35 hours per week for 4 weeks = 140 hours*

*40 hours per week for 4 weeks with 2 8-hour days missed = 144 hours*

*40 hours per week for 4 weeks with 3 4-hour partial days missed = 148 hours*

*35 hours per week for 4 weeks with 2 8-hour days missed = 112 hours*

20) On a scale from 0 to 10 where 0 is the worst job performance anyone could have at your job and 10 is the performance of a top worker, how would you rate the usual performance of most workers in a job similar to yours?

|                     |   |   |   |   |   |   |   |   |   |                     |
|---------------------|---|---|---|---|---|---|---|---|---|---------------------|
| 0 Worst Performance | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 Best Performance |
|                     |   |   |   |   |   |   |   |   |   |                     |

21) Using the same 0-10 scale, how would you rate your usual job performance over the past year or two?

|                     |   |   |   |   |   |   |   |   |   |                     |
|---------------------|---|---|---|---|---|---|---|---|---|---------------------|
| 0 Worst Performance | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 Best Performance |
|                     |   |   |   |   |   |   |   |   |   |                     |



22) Using the same 0-10 scale, how would you rate your overall job performance on the days you worked during the past 4 weeks (28 days)?

| 0 Worst Performance | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 Best Performance |
|---------------------|---|---|---|---|---|---|---|---|---|---------------------|
|                     |   |   |   |   |   |   |   |   |   |                     |

Finally, below, common practices sometimes applied by organizations to help their employees maintain their health are listed.

Please indicate for each item the extent you believe your workplace has acted to promote this activity (1 = not at all to 5 = very much)

|   |              |   |   |   |             |
|---|--------------|---|---|---|-------------|
| 23) <b>Health education programmes</b> are programmes provided by the organization to train workers how to maintain their physical and mental health such as stress management, relaxation training, and improved posture training. |              |   |   |   |             |
|   | 1 Not at all | 2 | 3 | 4 | 5 Very much |
|   |              |   |   |   |             |

|  |              |   |   |   |             |
|--|--------------|---|---|---|-------------|
| 24)<br><b>Promoting a healthier environment</b> in the workplace pertains to organizational arrangements that help workers promote their health, such as promoting “no smoking” units or accessibility to nutritious food. |              |   |   |   |             |
|  | 1 Not at all | 2 | 3 | 4 | 5 Very much |
|  |              |   |   |   |             |

|  |              |   |   |   |             |
|--|--------------|---|---|---|-------------|
| 25) <b>Free medical procedures</b> are free check-ups, follow-ups, and immunizations that help employees control their health. |              |   |   |   |             |
|  | 1 Not at all | 2 | 3 | 4 | 5 Very much |
|  |              |   |   |   |             |

|   |              |   |   |   |             |
|---|--------------|---|---|---|-------------|
| <p>26) <b>Workers' empowerment programmes</b> pertain to workplace initiatives that encourage workers to take more responsibility for their own as well as their colleagues' health, and to serve as health-promotion agents in their units such as women's empowerment, "staff educates staff" programs, and fitness trustees.</p> |              |   |   |   |             |
|   | 1 Not at all | 2 | 3 | 4 | 5 Very much |
|   |              |   |   |   |             |

|  |              |   |   |   |             |
|--|--------------|---|---|---|-------------|
| <p>27) <b>Policy change</b> are initiatives involving developing formal rules, guidelines, and human resource policies for promoting workers' health such as rules for smoke-free departments and their enforcement, and transport arrangements for night-shift workers.</p> |              |   |   |   |             |
|  | 1 Not at all | 2 | 3 | 4 | 5 Very much |
|  |              |   |   |   |             |

## Appendix 2: Final Survey

My name is Aoife Keane and I am studying for a Masters in Human Resource Management. As part of this course, I am carrying out research on issues relating to health and workplace practices. In order for me to conduct this research, I would really appreciate if you could fill in this short questionnaire. It will ask questions about your demographics, including your relationship status, age, gender, weight, height, education and occupation. There are also questions about your own health and your work environment. The completion of this questionnaire will significantly contribute to our knowledge about the work environment.

It should take no more than 5 minutes to complete and you have the right to withdraw at any time. All participation is voluntary. No person's name or organisation's name will be collected. All data gathered will remain anonymous and confidential and will only be used for the purpose of this study. If you wish, I can send you a copy of the results by request.

I would greatly appreciate it if you could complete this survey by the 15th of June 2013. Every question should be answered. Thank you for your time. If you have any questions, please feel free to email me on [aoife.keane@student.ncirl.ie](mailto:aoife.keane@student.ncirl.ie)

|  |  |
|--|--|
| 1) Please state your consent to take part in this survey.                      |  |
| I agree to take part in this survey and understand I can withdraw at any time. |  |

First, I'd like to ask some questions about you.

|                      |  |
|----------------------|--|
| 2) What age are you? |  |
|                      |  |

|                            |  |
|----------------------------|--|
| 3) Are you male or female? |  |
| Male                       |  |
| Female                     |  |

|                              |  |
|------------------------------|--|
| 4) What is your nationality? |  |
|                              |  |

|  |  |
|--|--|
| 5) Which of these best describes your current relationship status? |  |
| Married or cohabiting  |  |
| Separated  |  |
| Divorced   |  |
| Widowed  |  |
| In a relationship  |  |
| Not in a relationship  |  |

|   |  |
|---|--|
| 6) If you have children, please write their ages here. If you don't have children, please write "none". |  |
|   |  |

|   |  |
|---|--|
| 7) What is the highest level of education you have completed? |  |
| Up to and including Junior Cert (or equivalent)               |  |
| Leaving Cert (or equivalent)                                  |  |
| 3rd level non degree, e.g. diploma, certificate               |  |
| 3rd level degree  |  |

|                                 |  |
|---------------------------------|--|
| Postgraduate Diploma or Masters |  |
| Doctorate or above              |  |

|                                 |  |
|---------------------------------|--|
| 8) What is your smoking status? |  |
| Smoker                          |  |
| Non-smoker                      |  |
| Ex smoker                       |  |

|  |           |      |      |      |     |
|--|-----------|------|------|------|-----|
| 9) Using the scale below, for your age, would you say your health is |           |      |      |      |     |
|  | Excellent | Good | Fair | Poor | Bad |
|  |           |      |      |      |     |

|  |                   |  |  |  |                    |
|--|-------------------|--|--|--|--------------------|
| 10)<br>Using the scale below, where 1 is "almost never true" and 5 is "almost always true", thinking about your own recent health, in the last 4 weeks, have you |                   |  |  |  |                    |
|  | Almost never true |  |  |  | Almost always true |
| Felt physically unwell   |                   |  |  |  |                    |
| Had physical symptoms such as stomach upset, headache or dizziness   |                   |  |  |  |                    |
| Wished you felt physically better  |                   |  |  |  |                    |

|                          |
|--------------------------|
| 11) What is your height? |
|                          |

|                          |
|--------------------------|
| 12) What is your weight? |
|                          |

Now, I'd like to ask you some questions about your job and working conditions.

|   |  |
|---|--|
| 13) What is your occupation? Please be as specific as possible without naming the organisation. |  |
|   |  |

|  |  |
|--|--|
| 14) How would you describe your work schedule?                                     |  |
| Regular schedule - roughly the same hours every day                                |  |
| Rotating schedule - e.g. working a day shift some days and a night shift others    |  |
| Irregular schedule - e.g. unpredictable hours controlled by situations or workload |  |

|  |  |
|--|--|
| 15) Is there an option to work flexi-time? |  |
| Yes  |  |
| No   |  |

|   |  |
|---|--|
| 16) About how many hours altogether did you work in the last 7 days? (If more than 97, please enter 97) |  |
|   |  |

|  |  |
|--|--|
| 17) How many hours does your employer expect you to work in a typical 7 day week? (If it varies, estimate the average. If more than 97, enter 97.) |  |
|  |  |

|  |  |
|--|--|
| 18) Now please think of your work experiences over the past 4 weeks (28 days). In the spaces provided below, write the number of days you spend in each of the following work situations.<br>In the past 4 weeks (28 days), how many days did you... |  |
| ...miss an entire work day because of problems with your physical or mental health? (Please include only days missed for your own health, not someone else's health.)  |  |

|   |  |
|---|--|
| ...miss an entire work day for any other reason (including vacation)?   |  |
| ...miss part of a work day because of problems with your physical or mental health? (Please include only days missed for your own health, not someone else's health.) |  |
| ... miss part of a work day for any other reason (including vacation)? (Please do not include entire work days missed.)   |  |
| Come in early, go home late or work on your day off?  |  |

19) About how many hours altogether did you work in the past 4 weeks (28 days)? (See examples below.)

*Examples for calculating hours worked in the past 4 weeks*

*40 hours per week for 4 weeks = 160 hours*

*35 hours per week for 4 weeks = 140 hours*

*40 hours per week for 4 weeks with 2 8-hour days missed = 144 hours*

*40 hours per week for 4 weeks with 3 4-hour partial days missed = 148 hours*

*35 hours per week for 4 weeks with 2 8-hour days missed = 112 hours*

20) On a scale from 0 to 10 where 0 is the worst job performance anyone could have at your job and 10 is the performance of a top worker, how would you rate the usual performance of most workers in a job similar to yours?

|                     |   |   |   |   |   |   |   |   |   |                     |
|---------------------|---|---|---|---|---|---|---|---|---|---------------------|
| 0 Worst Performance | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 Best Performance |
|                     |   |   |   |   |   |   |   |   |   |                     |

21) Using the same 0-10 scale, how would you rate your usual job performance over the past year or two?

|                     |   |   |   |   |   |   |   |   |   |                     |
|---------------------|---|---|---|---|---|---|---|---|---|---------------------|
| 0 Worst Performance | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 Best Performance |
|                     |   |   |   |   |   |   |   |   |   |                     |



22) Using the same 0-10 scale, how would you rate your overall job performance on the days you worked during the past 4 weeks (28 days)?

| 0 Worst Performance | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 Best Performance |
|---------------------|---|---|---|---|---|---|---|---|---|---------------------|
|                     |   |   |   |   |   |   |   |   |   |                     |

Finally, below, common practices sometimes applied by organizations to help their employees maintain their health are listed.

Please indicate for each item the extent you believe your workplace has acted to promote this activity (1 = not at all to 5 = very much)

23) **Health education programmes** are programmes provided by the organization to train workers how to maintain their physical and mental health such as stress management, relaxation training, and improved posture training.

On a scale of 1-5, to what extent do you believe your workplace has acted to promote this activity?

|  | 1 Not at all | 2 | 3 | 4 | 5 Very much |
|--|--------------|---|---|---|-------------|
|  |              |   |   |   |             |

24)

**Promoting a healthier environment** in the workplace pertains to organizational arrangements that help workers promote their health, such as promoting “no smoking” units or accessibility to nutritious food.

On a scale of 1-5, to what extent do you believe your workplace has acted to promote this activity?

|  | 1 Not at all | 2 | 3 | 4 | 5 Very much |
|--|--------------|---|---|---|-------------|
|  |              |   |   |   |             |

25) **Free medical procedures** are free check-ups, follow-ups, and immunizations that help employees control their health.

On a scale of 1-5, to what extent do you believe your workplace has acted to promote this activity?

|  | 1 Not at all | 2 | 3 | 4 | 5 Very much |
|--|--------------|---|---|---|-------------|
|  |              |   |   |   |             |

26) **Workers' empowerment programmes** pertain to workplace initiatives that encourage workers to take more responsibility for their own as well as their colleagues' health, and to serve as health-promotion agents in their units such as women's empowerment, "staff educates staff" programs, and fitness trustees.

To what extent do you believe your workplace has acted to promote this activity?

|  | 1 Not at all | 2 | 3 | 4 | 5 Very much |
|--|--------------|---|---|---|-------------|
|  |              |   |   |   |             |

27) **Policy change** are initiatives involving developing formal rules, guidelines, and human resource policies for promoting workers' health such as rules for smoke-free departments and their enforcement, and transport arrangements for night-shift workers.

To what extent do you believe your workplace has acted to promote this activity?

|  | 1 Not at all | 2 | 3 | 4 | 5 Very much |
|--|--------------|---|---|---|-------------|
|  |              |   |   |   |             |

## **Appendix 3: Social Media Messages**

### **LinkedIn Message:**

Please help me with my MA thesis in HR by filling out this survey - <http://kwiksurveys.com/s.asp?sid=od1puh06s0r5b72151289> More details below. Only criteria is you are employed in Ireland. Thank you!

### **Facebook Message:**

Hi!

A quest for 5 minutes of your time to help me with my research!

As some of you know, I am studying for a Masters in Human Resource Management. As part of this course, I am carrying out research on issues relating to employment conditions and workplace practices. In order for me to conduct this research, I would really appreciate if you could fill in this short questionnaire if you are in paid employment.

<http://kwiksurveys.com/s.asp?sid=od1puh06s0r5b72151289>

It will ask questions about your demographics, including your relationship status, age, gender, weight, height, education and occupation. There are also questions about your own health and your work environment. The completion of this questionnaire will significantly contribute to our knowledge about the work environment.

It should take no more than 5 minutes to complete and you have the right to withdraw at any time. All participation is voluntary. No person's name or organisation's name will be collected. All data gathered will remain anonymous and confidential and will only be used for the purpose of this study. If you wish, I can send you a copy of the results by request.

I would greatly appreciate it if you could complete this survey by the 8th of June 2013. Thank you for your time. If you have any questions, please feel free to email me on [aoife.keane@student.ncirl.ie](mailto:aoife.keane@student.ncirl.ie)

Aoife.

## **Appendix 4: Email to HR Managers**

Aoife Keane

Postgraduate student

National College of Ireland

Email: aoife.keane@student.ncirl.ie

Phone: 0876529572

Hello,

My name is Aoife Keane and I am currently studying for a Masters in Human Resource Management in the National College of Ireland. As part of this Masters, I am conducting research examining employee absenteeism, with a specific focus on the influence of health and workplace practices.

I would be very grateful if you could assist me in obtaining participants for this study by circulating the following link to employees in your organisation. <http://kwiksurveys.com/s.asp?sid=od1puh06s0r5b72151289> This questionnaire should take no more than 5 minutes to complete. To ensure confidentiality and anonymity, no identifying details regarding the organisation's name or the employee's names will be gathered. If distributing it via email is not an option, I would be happy to supply hard copies of the questionnaire. Please let me know if this is the case. I have also attached a copy of the questionnaire in Word format for your inspection.

It is hoped that the results of this research will contribute to the growing knowledge regarding how best to limit absenteeism in the workplace. If you agree to take part, I will ensure that your organisation receive a copy of these results.

Should you have any further queries, please do not hesitate to contact me.

Thank you for your time and I look forward to hearing from you.

Kind regards,

Aoife