

**The Stress- Eating Relationship: How food can be used as a coping mechanism for stress
and emotions.**

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ABSTRACT

A change in eating behaviour can occur as a result of stress or emotions a person may experience. This stress or emotion can be brought about by certain stressors a person can encounter. The purpose of this study was to assess the relationship between eating behaviour as a result of stress or emotions and a person's belief in their ability to cope with the stress or emotions endured. It also aimed to investigate these variables differed in any way between men and woman, and between four different age groups tested. The Eating and Appraisal due to Emotions and Stress questionnaire (Ozier, 2007) and the Global Motivation Scale (Guay, Mageau & Vallerand, 2003) were used to collect data. The findings of this study suggest that there is a significant positive relationship between emotion and stress related eating and the perception an individual has in their belief of being able to coping, and between emotion and stress related eating and the appraisal of outside stressors when analysed using a Pearson correlation. It was also found that motivation, in particular the intrinsic motivations of to know and towards accomplishment and the extrinsic motivation of identified are positively correlated to the appraisal of one's ability and resources to cope.

INTRODUCTION

Overview

Stress is a natural feeling that is designed to help individuals cope in challenging situations. Many people cope with stress in a productive way, but others learn to cope using maladaptive methods such as using food as an avoidant strategy. Emotional eating can be used to comfort an individual when under stress, and can be identified through an increase in the consumption of fatty, sugary or calorie dense food. This stress eating relationship has been the topic of many a study, with the majority focusing on college students due to their change in living, financial and academic situations. This study aims to focus on how eating is used as a coping mechanism for stress in the general public and if there is a significant difference between gender and the motivation levels of individuals.

Stress

Lazarus and Folkman (1984) described stress as a mental or physical spectacle that is formed through a person's own cognitive judgement of a stimulus, and is as a result of a person's interaction with the environment. It can appear physically evident in a person and is a frequent occurrence in everyday life. A stressor is the external force that is imposed on the individual resulting in a stressful situation (McGrath, 1982). Stressors that have been reported most commonly include family arguments, work deadlines and financial issues (Almeida, 2005). Stress can also be triggered by over whelming traumatic experiences. Raphael and Dobson (2000) found that on the after math of events such as earthquakes or hijackings, there was a noted increase in the psychological problems experienced by individuals.

Minor stressors can have equal psychological impact on an individual. Klumb and Baltes (2004) found that routine hassles, such as waiting in traffic for example, have a major effect on a person's well-being. Kanner *et al* (1981) found that daily life hassles are more strongly related to psychological issues than major life events due their cumulative nature.

The perception one may have of controlling an outside stressor influences that individual's appraisal of coping. Problem- focused coping strategies are widely adopted in situations that are deemed controllable (Folkman & Lazarus, 1980; Aldwin, 1991). Controlling these situations or stressors allow individuals to believe that it will not be unsuccessful (Pearlin & Schooler, 1978). Low controllability of stressors increases emotional distress and so emotion focused strategies can be fostered.

Stress Response Theory

Hans Selye's theory of stress surrounds the physiological responses an individual has to stressors found in their environment. (Selye, 1950). His theory assumes that any demand that is seen as positive or negative can result in stress, and that adjustable resources are determine genetically. He developed what is known as General Adaption Syndrome, a conventional physical response pattern a person has to stress which takes place in three stages. Seyle suggests every individual is gifted with a genetically prearranged quality and amount of adaptive energy that can either be conserved to enable an individual to have a longer life or a short but vibrant presence.

On recognising a stressor, cells in an individual's hypothalamus are alerted to an emergency state and there is an overall stimulation to the autonomic nervous system during this shock. This known as the alarm stage. It can last from a number of minutes to a number of hours, depending on the strength of the stressor. A counter shock phase can follow if the person experiencing the

stressor is weak and vulnerable and is characteristic of the 'fight or flight' response. Heart rate increases and an individual can experience joint pain and muscle tension (McFarlane, 2007). During the resistance stage it is the organism's priority to survive during this stressful situation by using the body's syntoxic and catatoxic defence pathways. This enables both the stressor and the individual to be both present together in the environment (Seyle, 1967). In doing this, the individual can create an obstruction between them and the stressor. If a stressor experienced by an individual is too overpowering, return to a state of resistance may not be possible and exhaustion can be experienced as a result. Endocrine activity is heightened as well as levels of cortisol, which in the long run, can have a negative effect on a person's immune, digestive and circulatory systems.

Stimulus- based model.

The Stimulus- based model, proposed by Holmes & Rahe (1967), proposes that stress is a function of external influence. It aims to outline the conditions of stressful situations, such as time constraints, hot or cold conditions, and a demanding workload. Unlike the response based model, stress is an independent variable. The model treats life changes or events as the stressor to which the person responds to.

The model is based on the assumption that life changes are normal and each life changing event results in a similar modification of demands for all individuals. It assumes that change is stressful regardless if it is positive or negative to the individual and that there is a common level of readjustment demands for all individuals. Holmes and Rahe (1967) developed the Social Readjustment Rating Scale and Schedule of Recent Experiences (SRE) which were suggested to measure stress, under the definition of "adjustment or adaptation required by selected major life

changes or events.” It was hypothesized that those who experience a number of life changing events in a short period of time will experience psychological illness.

Stress and gender differences

It has been found that women report higher levels of prolonged and daily stress than men (Hogan *et al*, 2002). McDonough and Walters (2001) found that women’s scores in relation to distress were 23% higher than that of men’s. A difference in stress and stressors stem from different situations men and women can find themselves in. Matud (2004) noted that men are most likely rate finance issues a work related stress as sources of stress and that women are most likely to express family and health issues as their main sources of stress. Workplace stress has risen, especially for women. Studies have shown that in relation to the workplace, men who worked more than sixty hours a week find themselves to be more in control, but women, working the same amount of hours, express a decrease in perceived control and a higher level of stress (Tytherleigh *et al*,2007).

Differences between men and women in their response to a stressor can be biologically related. Taylor *et al* (2000) proposed that instead of using the ‘fight or flight’ process of physiologically responding to stress, women can adopt the ‘tend- and- befriend’ response. Tending involves the fostering of activities that intend to protect their offspring, and promote safety and the reduction of stress. Befriending involves the creation of social networks that can help the tending process. The bio-behavioural mechanism of attachment- caregiver is said to be the cause of this process and neuroendocrine studies suggest that oxytocin accompanied by the female hormones is at the foundation of the process (Carter, 1998).

Coping

Lazarus and Folkman (1984) described coping as constantly adapting cognitive and behavioural efforts to manage specific external and internal demands. They are known to have an effect of an individual's experience of stress. Coping is process oriented. It focuses on what the person thinks and does during a stressful encounter. Coping can be described as a contextual, and is influenced by an individual's appraisal of the demands in an encounter and the resources in the management of them. (Folkman *et al*, 1986). The majority of individuals achieve and try and handle stress in a positive way, yet others do not know how to deal with their issues, employing unhealthy ways to try and cope.

Cognitive Appraisal Theory

Cognitive appraisal is described as the process where an individual evaluates if a certain encounter with the environment is relevant to his or her well-being (Lazarus, 1993). The cognitive appraisal theory explains the mental process that has an influence on stressors, and it defines stress as a dual process, that involves the creation of a stressor from the surrounding environment and the response that an individual has when subjected to that stressor. (Lazarus & Folkman, 1984). The individual's evaluation of those particular encounters are regarded as primary and secondary appraisals.

During primary appraisal, the individual "evaluates whether he or she has anything at stake in this encounter" such as harm to self-esteem. (Lazarus *et al*, 1986). The basic components of primary appraisal include situation and personal factors. Personal factors consist of the elements of beliefs, including beliefs if he or she can control the outcome of a situation, and commitments (Folkman, 1984). Situational factors include how clear the outcome is, familiarity and the nature

of hurt or threat. If the person believes that the encounter is relevant to his or her well-being, the situation is deemed as stressful and makes additional mental evaluations called secondary appraisals.

Secondary appraisal involves a person analysing if anything can be done to prevent harm or hurt, or to improve the potential benefits of the outcome. A person can make three forms of stressful appraisals, including, harm or loss, threat and challenge. When the damage has already taken place, harm and loss is perceived by an individual. When there is the potential for harm and loss to occur, threat is perceived and challenge can trigger positive emotions such as excitement. Both cognitive appraisals are dynamic processes and so are independent of one another. If a person was to feel threatened and they have the resources to overcome the difficulties, the threat appraisal diminishes, but when the resources are deemed to be insufficient, and the demands of the environment can overwhelm the coping resources of the individual (Folkman & Lazarus, 1985).

Coping Strategies

Cognitive appraisals in the cognitive theory can be used to govern the coping strategies used in a stressful situation. Coping strategies are described as having the functions of managing the problem causing stress and controlling the emotions relating to the stressors involved (Folkman and Lazarus, 1980). Kopp (1989) suggested five different types of behaviour in relation to coping- visual or physical avoidance, distraction, self- soothing, problem orientated and care eliciting.

Higgins and Endler (1995) categorised coping strategies into task- oriented, emotional oriented and avoidance oriented classes. Task oriented coping strategies are problem focused, which

involves taking immediate action to alter a situation reducing the stress it is causing. The stressor can be eliminated, enabling the individual to deal with the root cause of the stressor, providing a long term benefit. Nes and Sergerstrom (2006) found that even though it is an effective strategy, it does not work for all individuals. Not all people have the ability to take control of a situation or can view a situation as being controllable. It is not always possible to use this coping strategy, as dealing with feelings of loss or hurt must be dealt with by using emotional- oriented strategies.

Emotion- oriented strategies is related to our emotions and changing our response to the stressors involved. With this completed successfully, the issue can be changed so it is no longer a negative emotional response and so, reducing stress. Penley *et al* (2002) found that using emotional focused strategies may not be as effective as using problem focused strategies. Emotional strategies can often ignore the root cause of the stress being experienced. Both of these methods are proactive ways to change stress and are, in the long run, more effective.

Avoidance- oriented strategies involve denying the issue by either denying the presence of it or losing hope. It can reflect the motivational construct in an individual. It involves both cognitive strategies such as denial and distraction, and behavioural strategies such as behavioural disengagement and the adoption of harmful behaviours (Freidman & Silver, 2007).

Coping and gender differences

Studies with regards to gender differences and coping have been conflicting in their findings. Numerous studies have reported that men are most likely to deal with stress using problem- focused coping strategies, while women tend to use strategies that change their emotional response (Billings & Moos, 1981). Ben- Zur and Zeidner (1996) found that women were more active and problem focused than men in their coping methods during the Gulf War, and men

were reported to use more emotional response coping methods than women. Matud (2004) proposed two hypotheses to test gender differences in relation to coping- the socialisation hypothesis and the role- constraint hypothesis. The socialisation hypothesis stands by the idea that the impact of gender on the stress process can be regulated by suggested traditional socialisation patterns. Such patterns include the traditional female role of being dependent, having a lack of assertiveness and being able to express emotions. The patterns also include the traditional male roles of being autonomous, self- confident and being goal directed. In relation to these socialisation patterns, it would appear difficult for men to admit feelings of weakness and dependence, while women would find it difficult in proactive problem solving situations. The role constraints hypothesis suggests that gender differences in coping mechanisms can be explained through the probability of men and women inhabiting certain social positions, and role related opportunities (Rosario *et al*, 1988).

Matud (2004) concluded, on the testing of both hypotheses that women are most likely to use emotional and avoidance coping styles, whereas men will most often use detachment and rational styles of coping. The findings are consistent with similar studies, where the coping styles of men and women differ in a similar way (Endler & Parker, 1990). Women are most likely use behaviours that enable them to seek help and use social support to cope with stress (Tamres *et al*, 2002) and men can often cope with stress using maladaptive strategies (Lindquist *et al*, 1997). Differences between appraisal, coping and gender can also be as a result of various stressors being perceived differently with regards to intensity and the perception of being able to control them (Hoar *et al*, 2006). Tameres *et al* (2002) found that in 65% of studies focusing on appraisal, females reported a higher level of stress intensity concluding that this was related to females using more coping strategies.

Motivation

Motivation is an important factor that can have an influence on an individual's experiences in life. An individual can be either intrinsically or extrinsically motivated. An individual that is intrinsically motivated is said to be "doing an activity for its inherent satisfactions rather than for some separable consequences" (Ryan & Deci, 2000). If an individual is motivated on their own, it can lead to an increase in achievement and creativity. It involves a mastering of goals by adopting a perception of challenge positively while generating excitement (Elliot & Hareckiewicz, 1996). Intrinsic motivation can be divided into the sub categories of to know, towards accomplishment and to experience stimulation. The intrinsic motivation of to know describes the engaging in an activity to experience pleasure and trying to understand something new. The intrinsic motivation of towards accomplishment involves engaging in an activity where pleasure is experienced when succeeding in mastering the task. The intrinsic motivation of to experience stimulation describes the engagement in an activity for the feelings of sensory pleasure (Carbonneau *et al*, 2012). Extrinsic motivation is when a person is motivated because of the instrumental value of the activity being performed. This is also subdivided. The extrinsic motivation of integrated regulation is fostered when an activity is thought to be worthwhile as it can have a means to an end. The extrinsic motivation of identified involves individuals that perceive an activity as being worthwhile for a particular reason. The extrinsic motivation of introjected regulation is controlled by rewards and limitation a person can inflict upon themselves and the extrinsic motivation of regulation describes when these rewards are governed by others (Deci & Ryan, 2002). When an individual has a total lack of motivation and self-determination they are said to be amotivated.

Self- Determination Theory

Since McClelland *et al* (1953) proposed their model of motivation, a number of theories have been developed to help explain how motivation can guide and influence a person's behaviour. One such theory is the Self- Determination Theory (SDT), that is used to investigate the degree of which human behaviour is autonomous or self-determined (Deci & Ryan, 1985). It possesses an organic assumption that people are organisms that are actively seeking challenges in the environment around them to accomplish personal growth and development. It can also be viewed from a dialytic perspective by suggesting that social related factors can destabilise a person's attempt at personal development. It is similar to that of Lazarus' Cognitive Appraisal Theory (Folkman & Lazarus, 1985) in relation to coping in that it proposes a dynamic individual-environment relationship that impacts on subsequent, behaviour, cognition and emotion.

Motivation, stress and coping

According to SDT, psychological needs satisfactions and the resulting self-determination are quite often related to adaptive health related and behavioural outcomes (Vallerand, 1997).

Martin- Albo (2012), using a model based on the SDT, found that those who were intrinsically motivated had a better sense of well-being and overall life satisfaction. When low or no self-determination is considered, negative consequences such as ill well-being can result, leading to negative states such as being stressed, which could ultimately cause maladaptive behaviours in an individual with the way they cope.

It is thought that from birth, people are intrinsically motivated to produce desired actions and prevent undesired ones, playing a significant role in influencing a person's response to situations for goal attainment. Needs theorists, such as Maslow (1970), proposed that behaviours are

motivationally influenced by certain needs an individual may have. Kruglanski (1989) proposed a the construct of need for closure describing it as a motivational force that influences individual difference in coping flexibility as it is similar to goal attainment (Pervin, 1989). Being in a stressful situation brings about feelings of uncertainty. A person's level of need for closure reflects that person's perception of their ability to be able to tolerate this uncertainty when dealing with the knowledge of the stressful situation. Cheng (2003) found that those who have a high need for closure tend to become fixated on using a familiar coping strategy in every stressful situation even though it might not be appropriate. Those who displayed a reduced need for closure were more flexible in their coping strategies and are more motivated to think about what coping strategy they will use in a specific situation.

Emotional eating

Eating in response to a negative affect has been described as emotional eating (Thayer, 2001). It has been found that the variance in emotional eating is strongly related to the perceived stress of an individual. Feelings of increased tension and having low energy levels can be the key reason of emotional eating, both feelings underlie negative moods such as stress. This stress- eating relationship is said to be valid in individuals as young as a few months old. Smith *et al* (1990) found that when babies were given a sugary solution when stressed and crying, they were instantly calmed, suggesting that sugary foods can in fact comfort due to biological processes. A number of theories have been proposed to help explain this stress- eating relationship among individuals. The General Effects Model, which was mostly animal studies, holds that stress will increase the food consumption in all organisms. The Individual Differences Model, which consists of human studies, claims that eating in response to stress will depend on particular

factors of that person. Green & Wing (1994) showed support for both models, suggesting that stress is indeed a precursor to unhealthy eating habits (Nguyen- Rodriguez, 2009). The emotionality theory of eating behaviour has been explained through the Psychosomatic theory (Bruch, 1974), which proposes that some people can perceive feelings of emotions such as emptiness and sadness similarly to that of hunger, and so food can be used as an emotional comfort. Most recently, the Affect Regulations model suggest that emotional eaters over eat as a result of a negative affect because this is a learned response that can alleviate them from the negative mood being experienced (Telch, 1997).

Eating and coping

Emotional eating is perceived to be a coping mechanism for stress (Kandiah *et al*, 2006). It is associated with the maladaptive form of the emotion- focused coping mechanism, which has been reported to lead to Night Eating Syndrome in students (Koff & Sangani, 1997) and can also result from a negative opinion of one's body image. Ball and Lee (2002) have found that emotion focused strategies are positively related to binge eating, diet and having a disordered attitude to eating. Spoor *et al* (2007) found that over eating occurs as a result of insufficient affect regulation or escape from a negative emotion being experienced, and that task oriented coping is not associated with it. For some individuals, eating is regards as avoidant behaviour or as a method of self-medication as proposed by the Psychosomatic theory (Bruch, 1974). Baumeister's (1991) Escape theory explains that overeating in response to a negative emotion is a result of attempting to escape or shift the attention away from the ego- threatening stimulus, supporting that eating as a result of stress is also an avoidant strategy of coping.

Eating, age and gender differences

Even though studies have conflicted with their findings, the majority have suggested that females will eat more if they are under stress, as there is a higher occurrence of restrained and emotional eaters among women. This higher occurrence could be due to the higher level of cortisol found in women (Adams & Rini, 2007). In academic stress situations, it was found that when these stressors were found to be high in females, food consumption was increased. Men have been reported to eat less when stressed when compared to control groups in a laboratory environment (Grunberg & Straub, 1992). In contrast to these findings, it has been found that on comparing men and women with regards to perceived stress and eating, men had a significant relationship between the two variables whereas women did not. Similar findings from Oliver *et al* (2000), found that men ate more calorie dense food when under stress, but that this could be explained through their higher body mass and need for a higher daily calorie intake.

The conflicting studies have led to the suggestion that instead of the testing differences in relation to amount of food intake when exposed to stressful situations, it is differences in emotional eating that should be the focus. Although men scored higher in the amount of food intake (Oliver *et al*, 2000), women scored higher in emotional eating, with emotional eaters consuming more fatty and sugary foods suggesting that there may be an individual difference in emotional eating.

The majority of age directed study has been carried out on young children and adolescents. It was found by Wardle *et al* (1992) that there was a difference in emotional eating between young adolescences (12-13 years of age) and older adolescence (16- 18 years of age). Wansink *et al* (2003) found that when three different age groups were compared (18- 34 years, 35- 54 years and 55+) comfort eating varied with age. Older participants used meal based foods whereas

younger participants used snack based food as methods of comfort eating. They also found that younger participants preferred more favour intense options like ice- cream and crisps when compared to older participants.

The current investigation

This study aims to investigate the stress- eating relationship among individuals, how it is used as a coping mechanism for stress, and does a person's motivation style influence if one is able to cope through eating. The majority of research has focused on academic stress in relation to eating, more precisely inconsistent eating habits, and how a student's academic performance can be affected by that stress (Kumar & Bhukar, 2013; Schafer, 1996; Fisher, 1994). Other studies have focused on emotional eating and the link to eating disorders as a result (Pinaquy *et al*, 2003), while others that tested stress related eating were in a laboratory setting (Oliver *et al*, 2000; Grunberg & Straub, 1992). This study aims to investigate the above questions through self- reflection methods of questionnaires to determine the relationships between perceived stress, eating, coping and motivation.

The following hypotheses are proposed:

1. There will be a difference in emotion and stress related eating between males and females
2. There will be a difference in the perception in the ability to cope between males and females

3. There will be a relationship between motivation style and emotion and stress related eating
4. There will be a relationship between emotional and stress related eating and the appraisal in ability to cope
5. There will be a difference in emotion and stress related eating between age groups
6. There is a relationship between the perception of external stressors and emotion and stress related eating
7. There will be a relationship between emotion and stress related eating and motivation style.

2. METHODOLOGY

Participants

A convenience sampling method was employed to gather questionnaires from a total of 88 candidates with 62 (70.5%) of those candidates being female and 26 (29.5%) being male. This convenience sample was achieved by gaining access to undergraduate and postgraduate psychology lectures at Dublin Business School with permission of the associated lecturers. . Friends, family and work colleagues were also invited to participate in the study in which they were fully debriefed and introduced to the questionnaire and the details of the study. There was no reward or incentive given for participating in the questionnaire and it was completely voluntary. Participants' anonymity was also respected.

Design

A questionnaire- based study was performed adopting quantitative measures for an exploratory correlation and between subject analyses. Correlation analysis will be carried out to investigate relationships between the independent variable of emotion and stress induced eating and the dependent variables of perception in the ability to cope, external stressors and motivation styles. Gender and age were among the demographic details collected for comparison. Gender differences between two independent gender groups (male and female) will be tested for differences in stress and emotion induced eating and perception in the ability to cope. A comparison of dependent variable of stress induced eating between four age groups will also be carried out.

Materials

All questionnaires in this study were administered during class time with the permission of various lecturers at Dublin Business School. The EADES (Eating and Appraisal due to Emotions and Stress) questionnaire (Ozier *et al*, 2007) and the Global Motivation Scale (Mageau and Vallerand, 2003) were used to account for the appropriate measures.

EADES.

The EADES questionnaire was used to measure how one uses food to cope with stress and situations. The first 49 items of the questionnaire comprised of statements in relation to eating, stress and coping, that were to be answered according to a rating scale. This rating scale measured from 1-5 (1 indicated a strong disagreement with the statement and 5 indicated a strong agreement with the statement). The questions 3, 6, 8, 10, 11, 12, 13, 16, 19, 24, 27, 31, 32, 37, 39, 40, 41, 45, 47 and are reverse scored for data analysis. The 49 items are divided into the three subscales of: Emotion and Stress Related Eating, Appraisal and Resources to cope, and Appraisal of outside Influences and Stressors. Twenty- four questions measured Emotion and stress related eating (Factor 1). This was concerned with ones use of food to cope with emotions or stressors, including questions related to eating behaviour and self- efficacy. The possible scoring range for factor 1 is 24-120, with the lower scores representing a higher Emotion and Stress Related Eating. Twenty questions measure Appraisal and Ability and Resources to Cope (Factor 2). This measures ones view with regards to their personal well- being and skills to cope with stress and emotions. The scoring ranged from 20-100, with the lower scores representing negotiated appraisal skills and resources to cope. Five questions measured Appraisal of outside Influences and Stressors (Factor 3), which describes ones view of how one copes with external stressors. The possible scoring range for this factor is 5-25, with lower scores indicating a

weaker ability of how one would perceive stressors. The remaining items of 50-55 measured demographics including age, sex and household income. The reliability of this scale was estimated using Cronbach's alpha = .949. A new version was created involving the three subscales, with Cronbach's alpha being .949, .869 and .625 showing strong support for the subscales.

Global Motivation Scale.

The Global Motivation Scale assesses one's global motivation toward behaving in general in their life as a whole. There are 28 items in the questionnaire which possesses 7 subscales of intrinsic motivation toward knowledge, accomplishment, stimulation, external motivation, introjected and identified regulations and motivation. Each subscale contains four items. The scale is rated from 1-7 (1 being 'does not correspond accordingly' and 7 being 'corresponds completely'). Participants are instructed to rate each item according to the statement 'In general I do things' associated with why they would do things the way they do. According to Vallerand *et al* (1992), the reliability of the scale was tested using Cronbach's alpha, and the values varied between .86 and .83. These findings were thought to be similar to those of the original scale, where the values varied from .76 to .86, providing strong support for the internal consistencies of the subscales used.

Procedure

Questionnaires were provided to friends and family and permission was received from individual Psychology lecturers by email to gain access to classes to perform data collection of Dublin Business School students. The study was introduced to participants prior to the questionnaires being handed out. Participants were told that participation was voluntary and that they had the right to withdraw from taking part at any stage. No personal details were collected and there was no way of identifying individual participants.

Each participant received both surveys with an information sheet attached to the front. This information sheet included a brief introduction to the study, instructions on how to complete both questionnaires correctly and an explanation on what the questionnaires were being used to measure. Personal details such as an email address was also provided on this sheet, should anyone feel the need to contact them. Participants were given fifteen minutes to complete both questionnaires and it was completed in, on average ten minutes.

On completing the questionnaires, information was provided to participants, including phone numbers and websites of organisations that would be able to help if any negative cognition during the time they were completing the questionnaires was experienced.

The study was given approval by the Dublin Business School Psychology Research Ethics Committee and all ethical principles in the Code of Professional Ethics were obeyed.

3. RESULTS

Analysis of the data collected was performed using IBM SPSS Statistics Data Editor.

Descriptive Statistics

A total of 88 participants took part in this study, 26 (29.5%) male and 62 (70.5%) female all whom completed the questionnaires (Table 1).

Table 1: *Frequency Table of gender of participants.*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	26	29.5	29.5	29.5
	Female	62	70.5	70.5	100.0
	Total	88	100.0	100.0	

Participants' ages ranged from 19-85 years old with the mean age found to be 34.16 years of age with standard deviation of 12.214. The majority of participants who participated in the study were in their late twenties and early thirties (Figure 1).

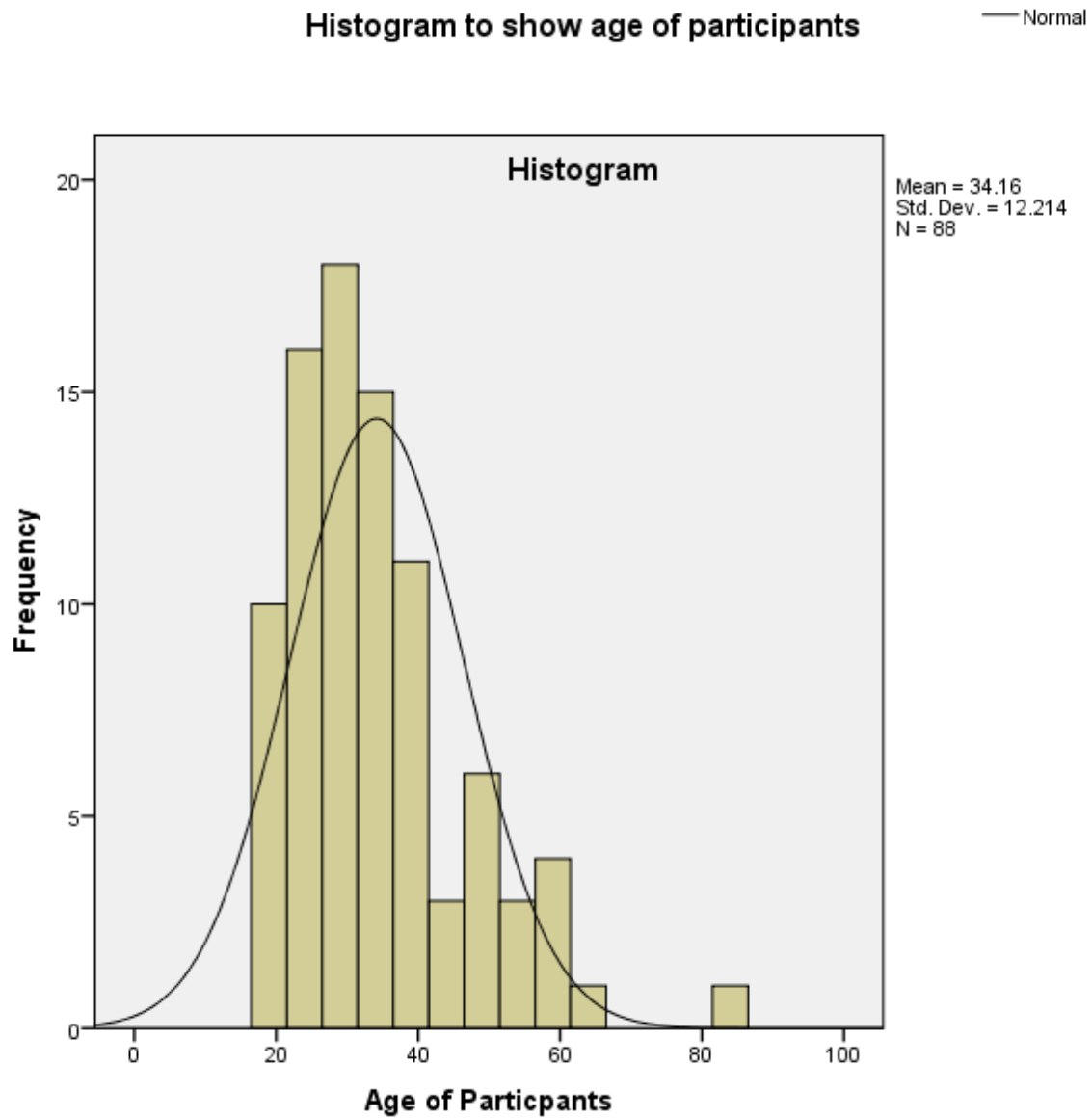


Figure 1: *Histogram representing the frequency of age of participants.*

Table 1: *Statistics of psychological measures for motivation.*

Variable	N	Mean	Std. Deviation
Intrinsic motivation- to know	88	22.99	3.44
Intrinsic motivation- toward accomplishment	88	22.52	3.53
Intrinsic motivation- to experience stimulation	88	21.91	3.84
Extrinsic motivation- identified	88	22.91	3.59
Extrinsic motivation- introjected	88	16.90	3.94
Extrinsic motivation- external regulation	88	17.63	3.81
Amotivation	88	13.88	4.35

Table 2: *Statistics of psychological measures for stress and eating*

Variable	N	Mean	Standard Deviation
Emotion and Stress Related Eating	88	80.45	17.83
Appraisal of Ability and Resources to Cope	88	74.47	11.29
Appraisal of Outside Stressors	88	13.95	3.27

The motivation variables, as found in table 1, of Intrinsic Motivation- to know (M= 22.99, SD= 3.44) Intrinsic motivation- towards accomplishment (M= 22.52, SD= 3.53), Intrinsic motivation- to experience stimulation (M= 21.91, SD= 3.84), Amotivation (M= 13.88, SD= 4.35) Extrinsic motivation- identified (M= 22.91 SD= 3.59) Extrinsic motivation- introjected (M= 16.90, SD= 3.94) and Extrinsic motivation- external regulation (M= 13.88, SD= 3.810) were all examined to see if they were correlated to the variables of Emotion and Stress Related Eating (M= 80.45, SD= 17.83), Appraisal of the ability and Resources to cope (M= 74.47, SD= 11.29) and

Appraisal of Outside Stressors ($M= 13.95$, $SD= 3.27$) as seen in table 2. All variable scores were found to be normally distributed.

Inferential Statistics

Gender Differences and Coping.

Using an independent sample t- test, it was found that males and females did not differ significantly in their appraisal of ability and resources to cope ($t(86)= .596$, $p= .553$) (Table 3).

Table 3: *An Independent Samples T- test displaying gender differences in coping*

Variables	Gender	Mean	Standard Deviation	t	df	p
Appraisal of Ability and Resources to cope	Male	75.58	10.65	.596	86	.553
	Female	74.00	11.60			

Gender Differences and Emotion and Stress Related Eating.

It was also found, using an independent sample t- test, that there was no significant difference between males and females in eating habits with regards to emotion and stress ($t(86) = 1.318$, $p = .191$) (Table 4).

Table 4: *An Independent Samples T- test displaying gender differences in emotion and stress related eating.*

Variables	Gender	Mean	Standard Deviation	t	df	p
Emotion and Stress Related Eating	Male	84.31	17.36	1.318	86	.191
	Female	78.84	17.92			

Age Group and Emotion and Stress Related Eating.

A one way analysis of variance was performed to investigate if eating as a result of emotions or stress differed between age groups (1=19-29, 2=30-44, 3=45-54 and 4=55-85). It was found that there was no significant difference between any of the age groups with stress and emotion induced eating ($f(3,84) = .350$, $p = .789$).

Coping, External Stressors and Emotion and Stress Related Eating.

A Pearson correlation analysis was conducted to examine the relationship between Emotion and Stress Related eating and the Appraisal of Ability and Resources to cope, the relationship between Emotion and Stress Related Eating and the Appraisal of outside Stressors, and the relationship between the Appraisal of outside Stressors and the Appraisal of Ability and Resources to Cope. It was found that there was a moderate positive relationship between Emotion and Stress Related Eating and the Appraisal of Ability and Resources to cope ($r(86) = .471, p < .001$), accounting for 22.22% of the variance. A weak positive relationship was found between Emotion and Stress Related Eating and the Appraisal of Outside Stressors ($r(86) = .241, p < 0.05$). There was no significant relationship found between the Appraisal of outside Stressors and the Appraisal of the Ability and Resources to Cope (Table 5).

Table 5: *Correlation table displaying the relationships between emotional and stress related eating, appraisal of ability and resources to cope, and the appraisal of outside stressors.*

Variable		Emotion and Stress Related Eating	Appraisal of Ability and Resources to cope	Appraisal of Outside Stressors
Emotion and Stress Related Eating	Pearson Correlation	-	.*	-
Appraisal of Ability and Resources to Cope	Pearson Correlation	.471**	-	-
Appraisal of outside stressors	Pearson Correlation	.241*	.174	-

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Motivation and Appraisal of Ability and Resources to Cope.

A Pearson Correlation analysis was conducted to see if there was a significant relationship between intrinsic motivation, extrinsic motivation and amotivation styles and the appraising of ability and resources to cope. Intrinsic motivation was divided into the subgroups of intrinsic motivation of: to know, towards accomplishment and to experience stimulation, and extrinsic motivation was divided into the subgroups of extrinsic motivation of: introjected, identified and external regulation.

It was found that there was a significant moderate positive relationship between the Appraisal of Ability and Resources to Cope and Intrinsic motivation- toward accomplishment ($r(86) = .296$, $p < 0.01$) and Intrinsic motivation- to know ($r(86) = .363$, $p < 0.01$). There was no significant

relationship found between the Appraisal of Ability and Resources to Cope and Intrinsic motivation- to experience stimulation (see table 6).

Table 6: Correlation Table displaying the relationships between Intrinsic Motivation variables and Appraisal to cope.

Variables		Appraisal of ability and Resources to Cope	To experience stimulation	Toward accomplishment	To know
To experience stimulation	Pearson Correlation	-.059	-	-	-
Toward accomplishment	Pearson Correlation	.296**	.023	-	-
To know	Pearson Correlation	.363**	-.118	.675**	-

** . Correlation is significant at the 0.01 level (2-tailed).

It was also found that there was a significant positive relationship between the Appraisal of Ability and Resources to Cope and Extrinsic Motivation- Identified ($r(86) = .308$, $p < 0.01$). Appraisal of Ability and Resources to cope did not show any significant relationship with Introjected or External Regulation Extrinsic Motivation variables. (See table 7). There was also no significant relationship found between Appraisal of Ability and Resources to Cope and Amotivation ($r(86) = -.44$, $p = .683$).

Table 7: Correlation Table displaying the relationships between Extrinsic Motivation variables and Appraisal to cope

Variable		Appraisal of ability and resources to cope	Identified	Introjected	External Regulation
Appraisal of ability and resources to cope	Pearson Correlation	-	-.*	-	-
Identified	Pearson Correlation	.308**	-	-	-
Introjected	Pearson Correlation	-.046	.047	-	-
External Regulation	Pearson Correlation	-.092	.047	.468**	-

** . Correlation is significant at the 0.01 level (2-tailed).

Motivation and Emotion and Stress Related Eating.

A Pearson Correlation analysis showed that Emotion and Stress Related Eating did not have a significant relationship with any of the motivation variables tested for this study the following results were found: Intrinsic motivation- to know ($r(86) = .200$, $p = 0.62$), Intrinsic motivation- to experience stimulation ($r(86) = .107$, $p = .320$) Intrinsic motivation- toward accomplishment ($r(86) = .72$, $p = .505$), Extrinsic motivation- Identified ($r(86) = .46$, $p = .672$), Extrinsic motivation- Introjected ($r(86) = .027$, $p = .804$), Extrinsic motivation- External regulation ($r(86) = -.132$, $p = .219$) and Amotivation ($r(86) = .027$, $p = .797$).

4. DISCUSSION

This study aimed to examine the relationships among the variables of emotion of stress related eating, motivation (intrinsic, extrinsic and amotivation), the appraisal of the ability and resources to cope and the appraisal of outside stressors. It also focused on the differences in coping and eating due to stress and emotions by gender and emotion and stress related eating among the different age categories of the participants. The number of participants was 88 (26 male and 62 female) with the average age of the group being 34.16 years of age.

Discussion of findings

This investigation examined the assumption that there will be a difference between males and females in relation to the variable of emotion and stress related eating. By performing an independent sample t- test, it was found that there was no significant difference in emotion and stress related eating between men and women ($t(86) = 1.318, p = .191$) as seen in table 4). This is inconsistent with findings such as Grunberg and Straub (1992) who found that this stress- eating relationship was only significant with regards to men and not women and Adam and Rini (2007) who found women are most likely to be at risk of emotion and stress related eating. Women are said to use more emotion- focused coping strategies than men (Tameres *et al*, 2002) and these strategies are associated with a low controllability leading to emotional distress which have been found to have a relationship with emotional eating (Ball & Lee, 2002).

It was also hypothesized that emotion and stress related eating would differ among the four age groups proposed by this study. It was found that there was no significant difference between

these four age groups when a one- way ANOVA was conducted. It is hard to say if it is consistent with findings as the majority of research has been performed on adolescent emotional eating investigations (Wardle *et al*, 1992).

It was also found that there was no significant difference in the appraisal of ability and resources to cope between men and women when an independent t- test was performed ($t(86) = .596$, $p = .553$) as seen in table 3. This is inconsistent with findings as many studies have reported that men and women use different strategies to cope (Folkman & Lazarus, 1980). It has been found that women incorporate more coping strategies than men due to an increase in their level of stress intensity, and so it was expected that women would have a higher level of appraisal in the ability and resources of being able to cope than men.

A Pearson correlation showed that there was a significant moderate positive relationship between emotion and stress related eating and appraisal in their ability to cope with stress ($r(86) = .471$, $p < 0.001$). This relationship explains that an individual can change eating habits or food according to how they perceive themselves as being able to cope. This hypothesis is supported by previous research and so the null hypothesis is rejected. Food can be used as an avoidant or escape mechanism for coping with stress or emotions an individual can encounter. It can be classified as a method of self- medication in order to be able to cope (Brusch, 1974). It can also be used as an emotion based coping mechanism. Both avoidant strategies and maladaptive forms of emotion based coping strategies can reduce a person's perception of their ability to cope and so this can increase emotional and stress induced eating.

A weak positive relationship was found between emotion and stress related eating and the appraisal of outside stressors ($r(86) = .241, p < 0.05$). It suggests that an individual will resort to eating as a result of stress or emotions if they are compromised in their ability to evaluate stressors they can encounter. Higher scores for both variables indicate that an individual is less likely to eat as a result of stress or emotions as they have an increased ability in the way a stressor can be perceived. Lazarus (1999) found that the perception of outside stressors can influence an individual's adoption of coping strategies. Those who do not perceive themselves as having the ability to cope can adopt avoidant strategies in order to deal with the stressor or stressful situation. The escape theory proposes that emotion and stress related eating is an avoidant strategy to cope with stress, and so the appraisal of coping can be said to be associated with the perception a person can have on their ability to deal with outside stressors.

It was also found, using a Pearson correlation that there was a significant moderate relationship between the appraisal of the ability and resources to cope and the intrinsic motivation of towards accomplishment ($r(86) = .296, p < 0.01$) and the intrinsic motivation of to know ($r(86) = .363, p < 0.01$). A moderate positive relationship was also found between this perception of the ability to be able to cope and the extrinsic motivation of identified ($r(86) = .308, p < 0.01$). This suggests that a person who is intrinsically motivated as the perceived ability to cope. This can be referred to prior findings as Martin- Albo (2012) suggested that those who are intrinsically motivated have a better sense of well- being and satisfaction in themselves. It was interesting to find that there was no relationship between ones perception in their ability to cope and amotivation as it has been found that people of this motivation orientation are susceptible to high levels of stress due to a lack of self- awareness.

Limitations

There are a number of limitations with this study. The sample was a convenience sample accessed through lectures at Dublin Business School, friends and family. This type of sample cannot be considered to be representative of the entire population, reflecting the limited validity of the investigation. Almost all participants would share a similar socio- economic background with similar levels of education. To get a true random sample, participants from all backgrounds should be included.

Another limitation of the study is the small percentage of males represented (22%). It can be said that females are over represented at 68% which may increase the risk of sample error.

Strengths

A sufficient relationship was shown between the perception of one's ability to cope and eating due to stress or emotions. It highlights the nature as to how food and eating can be used as a coping mechanism for stress or in response to particular emotions a person can experience.

The study is unique in the fact that it investigated the effects motivation styles a person may possess can possibly influence stress and emotion induced eating. Even though there was no significant relationship found between these two variables, it was found that a person's perception of being able to cope had a significant positive relationship with the intrinsic motivations of to know and towards accomplishment and the extrinsic motivation of identified.

This suggests that with further study, there quite possibly could be a relationship between certain motivation styles and eating in relation to stress as this eating can be said to be defined under an avoidant coping strategy.

Implications for future research

This research brings knowledge to the area of eating behaviour as a result of stress and emotions. Most literature has focused on a college student population and so this study has provided a brief insight into the general population. It has demonstrated that a person's perception of if they can cope or not with a stressful situation has a relationship with the motivation styles of the extrinsic motivation of identified and the intrinsic motivations of towards accomplishment and to know. This enables further study to investigate the link between motivation style and eating as a result of stress or emotions, especially what an individual's motivation is to overeat. Future studies will be able to input other variables as well as the variables used in this research that may play a role in an individual's stress or emotion induced eating behaviour. A person's appraisal of outside stressors and emotion and stress related eating showed a positive relationship, and it can be concluded that a person who has a compromised ability to perceive stressors feels that they do not have the ability to cope with these stressors. Further research should aim to investigate if there are any specific stressors, be it every day hassles and/or significant life changes, that can have an impact on these variables.

It may be of interest to repeat the investigation to see if the results are valid to true populations. In repetitions of the investigation, it would also be of benefit to have an equal representation of male and female participants as this was lacking in this study which may have had an impact on the insignificant findings in the differences between men and women with regards to the appraisal of coping and eating as a response to stress and emotion. It may also be relevant to look at the specific coping skills participants have that use emotion and stress related eating as a coping mechanism for stress.

As this research shows that appraisal in the ability of resources to cope and the appraisal of outside stressors are linked to emotion and stress related eating, it may be possible to get more insight into understanding the causes of this eating behaviour and how motivation can influence it through a person's belief in their ability to cope.

5. CONCLUSION

This research found that the appraisal of the ability and resources to cope and the appraisal of outside stressors correlate positively to emotion and stress related eating. It shows that if people think they are not able to cope with a situation, eating can be increased as a result of the feelings regarding the situation. Specific motivations such as the extrinsic motivation- identified and the intrinsic motivations of to know and towards accomplishment correlate positively to the appraisal in the ability to resources to cope. There was no significant differences found in the variables of emotion and stress related eating and the appraisal in the ability and resources to cope between men and women, or the variable of emotion and stress related eating between different age groups ranging from 19 to 85 years of age. There was no significant relationship between emotion and stress related eating and motivation which implies that it is necessary to carry out further research on this focusing on specific variables associated with them.

This studies results partially agreed with past research in the area of eating behaviour and stress but there needs to be a greater exploration into the findings regarding coping strategies used, types of stressors involved and how both these factors can affect an individual's motivation and eating behaviour while stressed or under the influence of emotions.

6. REFERENCES

- Adams, T., & Rini, A. (2007). Predicting 1- year change in body mass index among college students. *Journal of American College Health, 55*, 361-365.
- Aldwin, C. (1991). Does age and gender affect the stress and coping process? Implications for age differences in perceived control. *Journal of Gerontology: Psychological Sciences, 46*, 174-180.
- Almeida, D.M. (2005). Resilience and vulnerability to daily stressors assistive diary methods. *Current directions in Psychological Science, 14*, 64-68.
- Ball, K. & Lee, C. (2002). Psychological stress, coping, and symptoms of disordered eating in a community sample of young Australian women. *International Journal of Eating Disorders, 31*, 71-81.
- Baumeister, R.F. & Heatherton, T.F. (1991). Binge eating as escape from self- awareness. *Psychological Bulletin, 110*, 86- 108.
- Ben- Zur, H., & Zeidner, M. (1996). Gender differences in coping reactions under community crisis and daily routine conditions. *Personality and Individual Differences, 20*, 331-340.
- Billings, A.G., & Moos, R.H. (1981). The role of coping responses and social resources in attenuating the stress of life events. *Journal of Behavioural Medicine, 4*, 139-157.
- Bruch, H. (1974). *Eating Disorders: obesity, anorexia nervosa and the person within*. London: Routledge and Kegan Paul.

Byun, J. E., Lee, S. J., You, J. H., & Lee, H. K. (1997). The influence of need for closure and mood awareness on the experience of job stress. *Korean Journal of Industrial and Organisational Psychology*, *10*, 55-77.

Carbonneau, N., Vallerand, R.J., & Lafreniere, M.A.K. (2012). Toward a tripartite model of intrinsic motivation. *Journal of Personality*, *80*(5), 1147- 1178.

Cheng, C. (2003). Cognitive and motivational processes underlying coping flexibility: a dual process. *Journal of Personality and Social Psychology*, *84*(2), 425-438.

Deci, E.L. & Ryan, R.M. (1985). *Intrinsic motivation and self- determination in human behaviour*. New York: Plenum Press.

Deci, E.L., & Ryan, R.M. (2000). The “what” and “why” of goal pursuits: Human needs of the Self- determination of behaviour. *Psychological Inquiry*, *11*, 227-268.

Elliot, A.J., & Harekiewicz, J.M. (1996). Approach and avoidance achievement goals and intrinsic motivation: A meditational analysis. *Journal of Personality and Social Psychology*, *70*, 461-475.

Endler, N.S., & Parker, J.D.A. (1990). Multidimensional assessment of coping: A critical evaluation. *Journal of Social and Personality Psychology*, *58*, 844-854.

Fisher, S. (1994). *Stress in Academic Life*. Buckingham: Open University Press.

Folkman, S., & Lazarus, R.S. (1980). An analysis of coping in a middle- aged community sample. *Journal of Health and Social Behaviour*, *120*, 219-239.

Folkman, S., & Lazarus, R.S. (1985). If it changes it must be a process: A study of emotion and coping during three stages of a college examination. *Journal of Personality and social Psychology*, *48*, 150-170.

- Folkman, S., Lazarus, R.S., Dunkel-Schetter, C., DeLongis, A., & Gruen, J. (1986). Dynamic of a stressful encounter: cognitive appraisal, coping and encounter outcomes. *Journal of personality and social psychology*, 50, 992- 1003.
- Freidman, H.S., & Silver, R.C. (2007). *Foundations of Health Psychology*. Oxford University Press.
- Greeno, C.G., & Wing, R.R. (1994). Stress induced eating. *Psychological Bulletin*, 115, 444-464.
- Grunberg, N.E., & Straub, N.O. (1992). The role of gender and taste class in the effects of stress on eating. *Health Psychology*, 11, 97-100.
- Guay, F., Mageau, G., & Vallerand, R.J. (2003). On the hierarchical structure of self-determined motivation: A test of top-down and bottom-up effects. *Personality and Social Psychology Bulletin*, 29, 992-1004.
- Higgins, J.E., & Endler, N. (1995). Coping, life stress, and psychological and somatic stress. *European Journal of Personality*, 9, 253-270.
- Hoar, S.D., Kowwalski, K.C., Gaudreau, P., & Crocker, P.R.E. (2006). A review of coping in sport. *Literature Reviews in Sport Psychology*, 47-90.
- Hogan, J.M., Carlson, J.G., & Dua, J. (2002). Stressors and stress reactions among university personnel. *International Journal of stress management*, 9, 289-310.
- Holmes, T.H., & Rahe, R. H. (1967). The social readjustment rating scale. *Journal of psychosomatic research*, 11, 213.
- Kandiah, J.M., Meyer, Y.M., Jones, J. (2006). Stress influences appetite and comfort food preferences in college women. *Nutrition Research*, 26, 118- 123.

- Kanner, A.D., Coyne, J.C., Schaefer, C., & Lazarus, R.S. (1981). Comparison of two modes of stress measurement: Daily hassles and uplifts versus major life events. *Journal of behaviour medicine*, 4, 1-39
- Koff, E., & Sangani, P. (1997). Effects of coping style and negative body image on eating disturbance. *International Journal of eating disorders*, 22, 51-56.
- Kopp, C.B. (1989). Regulation of distress and negative emotions: a developmental view. *Developmental Psychology*, 25, 343-354.
- Kruglanski, A. W. (1989). *Lay epistemics and human knowledge: Cognitive and motivational bases*. New York: Plenum Press.
- Kumar, S., & Bhukar, J.P. (2013). Stress level and coping strategies of college students. *Journal of Physical education and Sports Management*, 4, 5-11.
- Kumb, P.L., & Baltes, M.M. (2004). Adverse life effects on later life: Manifestation and management in daily life. *International Journal of stress management*, 11, 3-30.
- Lazarus, R.S., & Folkman, S. (1984). *Stress, Appraisal and Coping*. New York: Springer.
- Lazarus, R.S. (1993). From Psychological Stress to the emotions: A history of changing outlooks. *Annual Review of Psychology*, 44, 1-22.
- Lazarus, R.S. (1999). *Stress and emotion: A new synthesis*. New York: Springer.
- Lindquist, T.L., Beilin, L.J., & Knuiman, M.W. (1997). Influence of lifestyle, coping, and job stress on blood pressure in men and women. *Hypertension*, 29, 1-7.
- Martin- Albo, J., Nunez, J.L., Dominguez, E., Leon, J., & Tomas, J.M. (2012). Relationships between intrinsic motivation, physical self- concept and satisfaction with life: A longitudinal study. *Journal of Sports Science*, 30, 337-347.

- Matud, M.P. (2004). Gender differences in stress and coping styles. *Personality and Individual Differences, 37*, 1401- 1415.
- Maslow, A.H. (1970). *Motivation and Personality*. New York: Harper and Row.
- McClelland, D.C., Atkinson, J.W., Clark, R.A., & Lowell, E.L. (1953). *The achievement motive*. New York: Appleton- Century- Crofts.
- McDonough, P., & Walters, V. (2001). Gender and health: reassessing patterns and explanations. *Social Science and Medicine, 52*, 547- 559.
- McFarlane, A.C. (2007). Stress- related musculoskeletal pain. *Best Practice & Research Clinical Rheumatology, 21*, 549-565.
- McGrath, J.E. (1982). Methodological problems in research on stress. In H.W. Kroeber and L. Laux (Eds). *Achievement, Stress, and Anxiety*, 19-48. Washington, DC: Hemisphere.
- Nes, L.S. & Sergerstrom, S.C. (2006). Dispositional optimism and coping: A meta- analysis review. *Personality and social psychology review, 10*, 235-251.
- Nguyen- Rodriguez, S.T., Unger, J.B., & Spruijt- Metz, D. (2009). Psychological determinants of emotional eating in adolescence. *Eating Disorders, 17*, 211- 224.
- Oliver, G., Wardle, J., & Gibson, E.L. (2000). Stress and food choice: A laboratory study. *Psychosomatic Medicine, 62*, 853-865.
- Ozier, A.D., Kendrick, O.W., Knoll, L.L., Leeper, J.D., Perko, M., & Burnham, J. (2007). The Eating and Appraisal Due to Emotions and Stress (EADES) questionnaire: Development and validation. *Journal of American Dietetic Association, 107*, 619- 628.
- Pearlin, L.I. & Schooler, C. (1978). The Structure of Coping. *Journal of Health and Social Behaviour, 19*, 2-21.

- Penley, J.A., Tomaka, J., & Weibe J.S. (2002). The association of coping to physical and psychological health outcomes: A meta- analysis. *Journal of behavioural medicine*, 25, 551-603.
- Pervin, L. A. (1989). *Goal concepts in Personality and Social Psychology*. Hillsdale, NJ: Erlbaum.
- Pinaquy, S., Chabrol, H., Simon, C., Louvet, J.P., & Barbe, P. (2003). Emotional eating, alexithymia, and binge- eating disorder in obese women. *Obesity Research*, 11, 195- 201.
- Rosario, M., Shinn, M., Morch, H., & Huckabee, C. B.(1988). Gender differences in coping and social supports: Testing socialization and role constraint theories. *Journal of Community Psychology*, 16, 55-69.
- Schafer, W. (1996). *Stress Management for well-being*. Orlando: Harcourt Brace.
- Seyle, H. (1967). *In vivo*. The case for supramolecular biology. New York: Liveright.
- Seyle, H. (1950). *The physiology and pathology of exposure to stress, a treatise based on the concepts of the general- adaption- syndrome and the disease of adaptation*. Montreal: ACTA, Inc., Medical Publishers.
- Selye, H. (1974). *Stress Without Distress*. New York: Harper & Row.
- Sergerstrom, S.C., & Miller, G.E. (2004). Psychological stress and the human immune system: A meta- analytic study of 30 years of inquiry. *Psychological Bulletin*, 104, 601-630.
- Smith, B.A., Fillion, T.J., & Blass, E.M. (1990). Orally mediated sources of calming in 1-day- old to 3-day-old human infants. *Developmental Psychology*, 26, 731- 737.
- Spoor, S.T.P., Bekker, M.H.J., van Strien, T., & van Heck, G.L. (2007). Relations between negative affecting, coping, and emotional eating. *Appetite*, 48, 368- 376.

- Tamres, L.K., Janicki, D., & Helgeson, V.S. (2002). Sex differences in coping behaviour: A meta-analytic review and examination of relative coping. *Personality and Social Psychology Review*, 6, 2-30.
- Taylor, S.E. (2000). Biobehavioural responses to stress in females: tend and befriend, not fight or flight. *Psychological Review*, 107, 411-429.
- Telch, C.F. (1997). Skills training treatment for adaptive regulation in a woman with binge-eating disorder. *Journal of Eating Disorders*, 32, 155-163.
- Thayer, R. (2001). *Calm Energy: How people regulate mood with and exercise*. Oxford: Oxford University Press.
- Tytherleigh, M.Y., Jacobs, P.A., Webb, C., Ricketts, C., & Cooper, C. (2007). Gender, health and stress in English university staff- exposure or vulnerability? *Applied Psychology: An international review*, 56, 267-287.
- Vallerand, R.J. (1997). Towards higher model of intrinsic and extrinsic motivation. In M.P. Zanna (Ed.), *Advances in experimental social psychology*, 271-360, New York: Academic Press.
- Wansick, B., Cheney, M.M., & Chan, N. (2003). Exploring comfort food preference among age and gender. *Physiology & Behaviour*, 79, 739- 747.
- Wardle, J., Marsland, L., Seikh, Y., Quinn, M., Fedoroff, I., & Ogden, J. (1992). Eating style and eating behaviour in adolescents. *Appetite*, 18, 167-183.

APPENDIX

The Stress- Eating Relationship: How food can be used as a coping mechanism for stress and emotions.

My name is Aisling Donohoe and I am conducting research in the department of Psychology in the DBS school of Arts. My study explores the relationships between perceived- stress and coping through food. This research is being conducted as part of my studies and will be submitted for examination.

You are invited to take part in this study and participation involves completing and returning the attached anonymous survey. While the survey asks some questions that might cause some minor negative feelings, it has been used widely in research. If any of the questions do raise difficult feelings for you, contact information for support services are included on the final page.

Participation is completely voluntary and so you are not obliged to take part.

Participation is anonymous and confidential. Thus responses cannot be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after the questionnaire has been collected.

The questionnaire will be securely stored and data from the questionnaires will be transferred from the paper record to electronic format and stored on a password protected computer. The data will be used in the presentation of the research project, and may also be presented to the student congress.

All data will be stored securely when not in use and will be password protected. Data will be saved until after examinations in May 2016 and also kept if an appeal is to be issued. If no appeal is issued, data is shredded and disposed of in a confidential waste facility

It is important that you understand that by completing and submitting the questionnaire that you are consenting to participate in the study.

Should you require any further information about the research, please contact Aisling Donohoe, XXXXXX@mydbs.ie.

Thank you for taking the time to complete this survey.

The EADES (Eating and Appraisal Due to Emotions and Stress) Questionnaire

The following questionnaire was developed to assess how individuals cope with and appraise stress in relation to food and eating. Your participation will assist in research related to why people overeat. This assessment will take about 10-15 minutes to complete. Your answers are confidential. There are a total of 55 questions.

Instructions: Please determine your level of agreement with the following statements. There are no right or wrong answers. Treat each question separately and answer as honestly as possible. It is important that you

Answer all questions. Choose only one answer per statement. Please respond to items 1-49 as follows:

1. If you strongly disagree with the statement

2. If you disagree with the statement.

3. If you are neutral to the statement.

4. If you agree with the statement.

5. If you strongly agree with the statement.

1. My family supports me when I have problems. 1 2 3 4 5

2. I am confident I can control my eating when I feel happy. 1 2 3 4 5

3. I overeat when I am stressed. 1 2 3 4 5

4. I can usually work out a solution to my problems. 1 2 3 4 5
5. I am capable of handling my own problems. 1 2 3 4 5
6. I do NOT feel secure in my life. 1 2 3 4 5
7. I try to find alternative solutions to my problems. 1 2 3 4 5
8. I overeat when I socialize. 1 2 3 4 5
9. I weigh the pros and cons of situations before I make decisions about what to do. 1 2 3 4 5
10. I worry about what people think of me. 1 2 3 4 5
11. I comfort myself with food. 1 2 3 4 5
12. I eat when I am upset with myself. 1 2 3 4 5
13. I feel the need to make others happy. 1 2 3 4 5
14. I am confident I can control my eating when I am tired. 1 2 3 4 5
15. My friends support me when I have problems. 1 2 3 4 5
16. I feel sad often. 1 2 3 4 5
17. I am confident I can control my eating when I am angry. 1 2 3 4 5
18. I am able to meet my emotional needs. 1 2 3 4 5
19. It is hard for me to stop eating when I am full. 1 2 3 4 5
20. I am able to say no when I need to. 1 2 3 4 5
21. I try to think positive when times are tough. 1 2 3 4 5

22. I am confident I can control my eating when I am sad. 1 2 3 4 5
23. I have control over my emotions. 1 2 3 4 5
24. I eat to avoid dealing with problems. 1 2 3 4 5
25. I talk about my feelings. 1 2 3 4 5
26. I am confident I can control my eating when I am upset with myself. 1 2 3 4 5
27. Other people influence how I handle problems. 1 2 3 4 5
28. I deal with problems sooner rather than later 1 2 3 4 5
29. I try to resolve a problem when I know there is something wrong in my life. 1 2 3 4 5
30. I am confident I can control my eating when I feel upset. 1 2 3 4 5
31. I feel out of control when I eat. 1 2 3 4 5
32. I eat when I am frustrated. 1 2 3 4 5
33. I am capable of dealing with stressful situations. 1 2 3 4 5
34. I am confident I can control my eating when I am frustrated. 1 2 3 4 5
35. I use food to cope with my emotions. 1 2 3 4 5
36. I am able to meet my spiritual needs. 1 2 3 4 5
37. I eat when I am tired. 1 2 3 4 5
38. I do NOT allow people to change my mind. 1 2 3 4 5
39. I eat when I am angry. 1 2 3 4 5

40. I eat when I am sad. 1 2 3 4 5

41. When a problem arises, it is hard for me to make a plan of action and follow it. 1 2 3 4 5

42. I am confident I can control my eating when I am anxious. 1 2 3 4 5

43. I do NOT see challenges as stressful. 1 2 3 4 5

44. I am confident I can control my eating when I am relieved. 1 2 3 4 5

45. I eat when I am anxious. 1 2 3 4 5

46. I have control over my life. 1 2 3 4 5

47. I eat when I am relieved. 1 2 3 4 5

48. I try to analyze a problem in order to better understand it. 1 2 3 4 5

49. I do NOT have control over how much I eat. 1 2 3 4 5

Tell us a little about yourself by answering questions 50-53. Circle the statement that best represents you.

50. What is your sex?

A. Male

B. Female

51. Which of the following represents your job category?

A. Faculty

B. Staff

C. Other

52. What is your annual household income from all sources?

A. Less than 10,000

B. 10,000-14,999

C. 15,000-19,000

D. 20,000-24,999

E. 25,000-34,999

F. 35,000-49,999

G. 50,000-74,999

H. 75,000 or more

For Questions 53-55, write your answers on the lines provided.

53. How old are you (Example: 45)?

Age in Years: ____ ____

54. How many individuals live in your immediate household (if 4 individuals live in your immediate household, put 04)?

Individuals in household: ____ ____

55. How many individuals live in your immediate household that are under the age of 18 years (if 4 individuals live in your immediate household that are under 18 years, put 04)?

Individuals under 18: ____ ____

Helpful websites and phone numbers:

www.aware.ie Support line phone number: 1890 303 302

www.samaritans.org Helpline phone number: 116 123

www.bodywhys.ie LoCall Helpline: 1890 200 444

GLOBAL MOTIVATION SCALE (GMS-28)

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Scale Description

This scale assesses people's global motivation toward behaving in general in their life as a whole. There are 7 constructs: intrinsic motivation toward knowledge, accomplishment and stimulation, as well as external, introjected and identified regulations and amotivation. There are 28 items (4 items for each of the 7 subscales) assessed on a 7-point scale.

References

Guay, F., Mageau, G., & Vallerand, R.J.. On the hierarchical structure of self-determined motivation : A test of top-down and bottom-up effects. Personality and Social Psychology Bulletin, 29, 992-1004.

GENERAL ATTITUDES

Indicate to what extent each of the following statements corresponds generally to the reasons why you do different things.

Does not correspond accordingly				Corresponds moderately			Corresponds completely
1	2	3	4	5	6	7	

IN GENERAL, I DO THINGS . . .

1. ... in order to feel pleasant emotions.	1	2	3	4	5	6	7
2. ... because I do not want to disappoint certain people.	1	2	3	4	5	6	7
3. ... in order to help myself become the person I aim to be.	1	2	3	4	5	6	7
4. ... because I like making interesting discoveries.	1	2	3	4	5	6	7
5. ... because I would beat myself up for not doing them.	1	2	3	4	5	6	7
6. ... because of the pleasure I feel as I become more and more skilled.	1	2	3	4	5	6	7
7. ... although I do not see the benefit in what I am doing.	1	2	3	4	5	6	7
8. ... because of the sense of well-being I feel while I am doing them.	1	2	3	4	5	6	7
9. ... because I want to be viewed more positively by certain people.	1	2	3	4	5	6	7
10. ... because I chose them as means to attain my objectives.	1	2	3	4	5	6	7
11. ... for the pleasure of acquiring new knowledge.	1	2	3	4	5	6	7
12. ... because otherwise I would feel guilty for not doing them.	1	2	3	4	5	6	7
13. ... for the pleasure I feel mastering what I am doing.	1	2	3	4	5	6	7
14. ... although it does not make a difference whether I do them or not.	1	2	3	4	5	6	7
15. ... for the pleasant sensations I feel while I am doing them.	1	2	3	4	5	6	7
16. ... in order to show others what I am capable of.	1	2	3	4	5	6	7
17. ... because I chose them in order to attain what I desire.	1	2	3	4	5	6	7
18. ... for the pleasure of learning new, interesting things.	1	2	3	4	5	6	7
19. ... because I force myself to do them.	1	2	3	4	5	6	7
20. ... because of the satisfaction I feel in trying to excel in what I do.	1	2	3	4	5	6	7
21. ... even though I do not have a good reason for doing them.	1	2	3	4	5	6	7

22. ... for the enjoyable feelings I experience. 1 2 3 4 5 6 7
23. ... in order to attain prestige. 1 2 3 4 5 6 7
24. ... because I choose to invest myself in what is important to me. 1 2 3 4 5 6 7

Does not correspond accordingly	Corresponds moderately					Corresponds completely
1	2	3	4	5	6	7

IN GENERAL, I DO THINGS . . .

25. ... for the pleasure of learning different interesting facts. 1 2 3 4 5 6 7
26. ... because I would feel bad if I do not do them. 1 2 3 4 5 6 7
27. ... because of the pleasure I feel outdoing myself. 1 2 3 4 5 6 7
28. ... even though I believe they are not worth the trouble. 1 2 3 4 5 6 7

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SCORING KEYS

GMS-28

# 4, 11, 18, 25	Intrinsic motivation - to know
# 6, 13, 20, 27	Intrinsic motivation - toward accomplishment
# 1, 8, 15, 22	Intrinsic motivation - to experience stimulation
# 3, 10, 17, 24	Extrinsic motivation - identified
# 5, 12, 19, 26	Extrinsic motivation - introjected
# 2, 9, 16, 23	Extrinsic motivation - external regulation
# 7, 14, 21, 28	Amotivation