

Stress and Its Effects on Newly Qualified Dentists

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Abstract

This study explores and evaluates the effects of stress on newly qualified dentists. Both surveys and interviews were used to gather data and investigate the exact nature of stressors as they occur in the context of the research. It became clear that managing workload and dealing with time management is still the most prevalent stressor in dentistry and it affects dentists from the very beginning of their careers. Other prevalent stressors included dealing with difficult patients and meeting society's expectations for high quality medical care. The study used interviews with more experienced dentists to assess whether or not the nature of stressors changed as young dentists gain more experience in this area of medicine.

Contents

Acknowledgements.....	i
Research Students Declaration Form.....	ii
Abstract.....	iii
Introduction.....	1
Literature Review.....	4
The Origins and Development of Stress Theory.....	5
Types of Stress.....	6
Interactive Model of Stress.....	7
Job Demand Control Model.....	8
Person Environment Fit.....	10
Type-A Personality.....	12
Transactional Stress Model.....	13
Time Pressure and Managing Workload.....	14
Job Dissatisfaction.....	17
Professional Uncertainty.....	20
Patient Care Responsibility.....	21
Professional Recognition.....	24
Methodology.....	26
Survey Method.....	30
Interviews.....	32
Data Analysis – Survey.....	35
Data Analysis – Interviews.....	36
Research Findings.....	38
Time Pressure/ Managing Workload.....	38
Job Dissatisfaction.....	41
Professional Uncertainty.....	46
Patient Care Responsibility.....	48
Professional Recognition.....	52
Conclusions.....	54
Recommendations.....	56
Personal Reflection.....	58
Bibliography.....	60

Appendix	66
Questionnaire	66

Introduction

The purpose of this study is to investigate the effects of occupational stress on newly qualified dentists in the Republic of Ireland

Medical professionals deal with challenges that are unique, in that a patient's welfare is their primary responsibility. Arnold et al (2005, 389) states that "Stress is a word from the Latin word *stringere*, meaning to draw tight. Early definitions of strain and load used in physics and engineering eventually came to influence one concept of how stress affects individuals". However this proposed research topic relates to stress as experienced by human beings. In the context of dentistry the nature of the stressors has caused difficulty for many, with some individuals struggling to deal with the problems posed. It has long since been recognised that dentistry is a highly stressful occupation with practitioners suffering from both psychological and physiological effects. This study will deal specifically with the effects of stress on newly qualified dentists. The literature on stress and its effects on dentists is not as common as the studies relating to doctors or nurses. Literature relating to newly qualified dentists and the effects stress has on this group is even more difficult to locate. The aims and objectives of this study are

- A) To assess which stressors affect newly qualified dentists as well as the impact they can have
- B) To see which stressors are most prevalent and find out why this is the case
- C) To explore how stress can potentially change or evolve as their career progresses

The population of the study is thirteen newly qualified dentists and four experienced dentists. The grounded theory approach was the methodology used because it is far more suitable to the inductive research position adopted in this study. Stress is highly subjective and the grounded theory approach allows the researcher to experience the phenomena from the subject's perspective. It is vital that the researcher is not distanced from the subject and its effects on them. Data was collected via the use of both a survey and interviews. The survey was used to collect quantitative data from the newly qualified dentists and the interviews were conducted with more experienced practitioners. This mixed method approach allows for the collection of the most relevant data around this topic. The combination of both quantitative and qualitative data adds depth to the research findings. The interviews were used to elicit more detailed information about the responses in the survey.

This approach to collecting data about the stress phenomena hopes to gain an understanding of the topic from the perspective of newly qualified dentists. The research intends to really assess the problem in such a way that the research findings vividly highlight the issues they face as well, and in the process add to existing literary findings.

This research has been undertaken as part of a Masters Degree programme in human resource management. The study was based on occupational stress because this topic is often presented as being both challenging and often a serious source of difficulties in many professions. It is clear that stress can have pronounced psychological effects and this study aims to explore this in the context of this group of medical professionals. On-going economic uncertainty has caused significant amounts of stress for a huge amount of people, and as this study uncovered that dentists are also affected by this. This situation appears to be adding to the significant levels of stress young dentists already have to contend with. The economic situation is a more recent causal factor of stress however; it became evident quickly from literature that this medical profession has several stressors

that have been prevalent over a long period. Some of the stressors identified such as the high volume of or dealing with difficult patients are not unique to dentistry. It is the setting in which they occur that makes them unique. Newly qualified dentists were chosen as the target group because this area has not been very well represented in academic research and it was interesting to see if this area of medicine is stressful from the beginning of their career or if it develops over time. This research serves to effectively add to literature around stress and dentistry but also to take a more focussed approach and concentrate on their early career. By focussing on this specific group the research aims to uncover what it is that causes the stress, how it manifests itself and finally make some practical recommendations as to how it can be dealt with in the future.

Literature Review

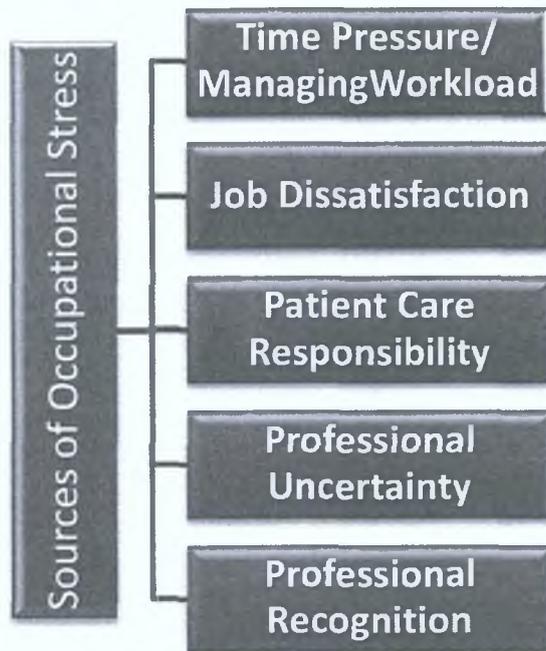


Figure 1 – Sources of Occupational Stress for Dentists

This research topic deals with stress and its effects on newly qualified dentists. This literature review section will aim to work through the concept of stress from its conception as a theory to a topic that is now almost always viewed in a negative light in most occupations. The most important literature and how it relates to the research topic will be explored in detail. This includes critically processing the most noted stress models and relating these to this study and its aims and objectives. It will be shown that the ground breaking work of Cannon (1929) and Seyle (1956) paved the way for many other academics to study this fascinating topic. Their work of noted academic writers relating to this topic such as Lazarus, Karasek and Cooper will give detailed insight in to the phenomenon of stress and how it occurs in young dentists as well as the effects it can have.

This literature review is divided into four themes that come from the McCann et al (2009) study which relates to stress among pharmacists and one theme specific to this study, these are outlined in figure 1

The Origins and Development of Stress Theory

Before analysing the literature relating to occupational stress in dentistry, it is important firstly to investigate and develop the concept of stress and track its development through important literary works of noted academics. There are many writers who give their own definitions of stress, however the origins of this interesting subject can be traced to the following people. Cannon (1929) was initially credited with documenting what is known as 'the fight or flight response'. This describes the reaction of humans presented with threatening situations. This is also known as Cannon's Theory. His work in relation to both human and animal reactions to threats laid the foundations for the scientific exploration of what would later become known as stress. This leads on to the pioneering work of Seyle. The origins of the definition of stress as we know it today, and its effects, can be traced back to the ground breaking work of this Czech scientist. He first discovered what we currently identify as stress in 1935 when conducting experiments on laboratory rats. Seyle (1956) described stress as the response of the body to demands placed upon it. When the work of Seyle is applied to real life we can see that ultimately stress in its various guises is unavoidable. When Seyle's definition is applied to a workplace scenario we can see that stressors such as work overload or long hours can cause stress which affects the body. In the context of this research the effects of excessive occupational stress will be the primary focus.

Seyle (1956) also developed the general adaptation syndrome (GAS), a revolutionary method of describing the physical reaction to stress by outlining three main stages

Sutherland & Cooper (2000; 48) outlined these three stages. The initial stage is characterised by a reaction of alarm, which is the initial psycho- physiological reaction. The second stage leads to a resistance to the relevant stressors and at this point the body attempts to rebalance itself by adapting to the stress it has experienced. The final stage known as collapse is reached in the event of the stressor not being dealt with effectively by the person experiencing the difficult and stressful situation. This three stage model identified that if the stressor could not be dealt by the body burnout ensued. By concentrating on the earliest academic work relating to stress this research is already building a picture of how stress has the potential to be destructive in most work scenarios and especially in the context of health professionals who have patient safety to consider. At this stage we can see that although the work of both Cannon and Seyle was revolutionary for its time and it is of critical importance as it is the foundation on which others theories are built. It is now necessary to move the research in the direction of occupational stress, that being what is experienced in the context of ones work life. It is vitally important to analyse the major theories and models that explain the human body's reaction to stress. This also allows for the understanding of the stress phenomena in a more modern context.

Types of Stress

During the course of a research project that relates to occupational stress it is apparent that there are different types of stress and varying academic views as to whether some types of stress are thought to have positive effects. Eustress is regarded as beneficial stress, or even an optimal level of stress an individual may have to promote them to work at an effective level. Le Fevre et al (2003; 729) pointed out that eustress is the area between an individual having too much demand or too little demand on them. He went on to say that it could be

described as just the correct amount of stress for a person to deal with. That particular study outlined that either under or over stimulation can potentially lead to what is called distress. However a moderate stress level resulted in eustress. Le Fevre et al (2003; 729) suggested that eustress occurs when stressors are viewed in a positive way but conversely distress happens when the stressors are perceived negatively. From this it is clear that some researchers have found that stress need not always be viewed as negative. When stress is kept at an optimal level it is not destructive. Although the study does not take into account the changing nature of various occupations and how the stressors in many situations may be completely out of the person's control. Le Fevre et al, (2003; 741) did however note that it is responsibility of the individual to manage their own level of stress in the workplace. Le Fevre et al (2003; 738) also made an interesting observation at the end of their study when they highlighted that the concept of eustress is rarely explored in academic literature. It would appear that there is far more emphasis on the destructive and dangerous effects of stress that any benefits an optimal level of stress may have.

Models of Occupational Stress

Interactive Model of Stress

Sutherland & Cooper (2000; 55) suggest that this model combines the elements of the previous stimulus based and response based models. The stimulus based model describes the body's reaction to a stimulus and change that results from this. The response based model is the Selye (1956) model which shows the body's response to stress and how it deals with the stress. They go on to say that there are five key characteristics associated with the model and these determine reactions to stressors. These are:

Cognitive appraisal Each person interprets stress differently and this will determine their reaction to different stressors or stressful situations

Experience If a person experiences a stressful event for the first time this can be more stressful than experiencing a familiar stressful event. The familiarity of the stressful event or situation can determine the individual's ability to cope effectively. If the person has previously dealt with a stressful situation well this can assist in moderating the pressure.

Demand The demands placed upon an individual will determine the level of perceived stress. Factors such as needs or current workload and ability to cope with more work will determine the way demand is perceived.

Interpersonal Influence This relates to relationships with others in the workplace or the absence of work colleagues. The support of work colleagues can assist in reducing stress and making it manageable. This has the ability to influence the success of dealing with stress. In the context of a dentist's work he/she primarily works with one other person in practice. Bad relations with patients could easily lead to stressful situations that in many cases may be difficult to resolve.

A State of Stress This is described as the difference between the demand placed on somebody and their perceived ability to deal with that demand. What follows is the ability to cope with the stress and return the body to a more relaxed and balanced state.

Job Demand Control Model

Doef and Maes (1999, 87) say that Karasek's (1979) Job Demand Control Model has been on the most widely utilised pieces of research in the study of stress and its effects on health. This research centres around two elements that can be applied to every job. They are job control and job demand. Doef and Maes (1999, 88) explain what is meant by both

job demand and job control in the context of the Karasek (1979) study. Job demand refers to the time pressures that people may have to deal with as well as role conflict in the workplace. Job control alludes to the control a person may have over tasks and activities at work. They continued to say that the more decision making control a worker has the more learning they will achieve combined with less stress. Following on from this they say that increased psychological demands also have the capacity to increase learning, however it also increases stress. From looking at the Job Demand Control diagram (Figure 2) it is clear that in jobs where there is a high demand placed on the employee and they have little control then the resultant effect of this is likely to be significant strain.

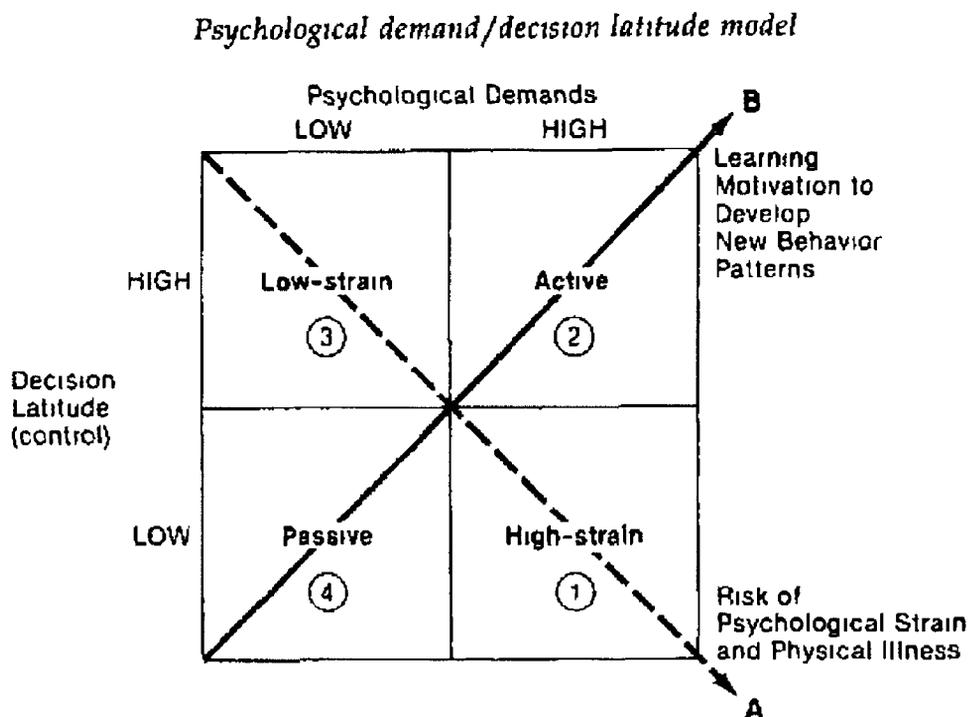


Figure 2 Job Demand Control Model - Karasek (1979)

Wall et al (1996; 153) explain that the fundamental hypothesis was that high job demands were not necessarily harmful, however when combined with low levels of decision making authority the potential for psychological strain is increased considerably. They also said that Karasek's (1979) hypothesis has since been well supported by academic research. This gives further credence to the theory that occupational stress can easily occur when a workers ability to make decisions about their own work is either low or even non-existent.

Conversely it appears that an occupation where the employee has a high degree of control and high psychological demands is likely to learn and construct new ways of behaving to deal with the demand. It also leads to increased levels of motivation for the worker. Clearly the issue of job control and the ability of workers to have a high degree of decision making power is instrumental in not only determining whether or not they will suffer from stress but also the level of motivation they will have whilst working. However as Doef and Maes (1999) pointed out previously this state of increased learning can also lead to increased stress.

It is evident that the work Karasek (1979) did in his initial study amounted to one of the most critical pieces of research in the study of stress and its effects. There are some elements of the theory that can be questioned as they seem overly simplistic however. According to the theory the demands placed on an individual can be increased but if their ability to make decisions regarding their work then the risk of psychological strain is low. This may not always be the case, as high levels of decision making power do not guarantee a stress free life if an individual has high demands placed upon them in their work.

Person Environment Fit

This type of interactive stress model is of particular interest when applied to this proposed research. It works on the basis of identifying various personality types and then using this information to gain an understanding as to how these personalities will respond to stress.

This can be evaluated by assessing the suitability of the individual's personality in respect of the environment in which they work. Edwards et al (1998, 3) in depth study in relation to person environment fit reveals that this theory works on the basis that stress occurs when there is a mismatch between the person and the environment in which they work. In their work they go on to identify the main elements that are the backbone of this theory. The first distinction is the person and their work environment. The second distinction is the person as they are represented both objectively and subjectively and their environment. Le Fevre et al (2003, 731) showed that the subjective depiction relates to the individuals perception of both themselves and their environment, whereas the objective depiction relates to the person and their environment in reality. When they refer to the objective element that is the person in the physical sense and subjective refers to their attitude relating to their own personal traits, for example their self-concept.

The relevance of P-E theory can be appreciated when the concepts are made relevant to this study. The objective environment that dentists may find themselves in has to be evaluated. The study will have to assess the impact, if any that the physical surroundings have on the stress levels of dentists. It is however the subjective element of the theory that is of particular importance in this context. This is referring to how dentists perceive various situations themselves and the impact this then has on them. It is now clear that this is a difficulty in the study of stress. Different people perceive events in various ways and models such as P-E fit theory merely give a foundation on which to build when studying stress in the context of this proposed study. It can be inferred from this theory that stress is essentially subjective, but objective factors can significantly impact on its occurrence and severity also, as outlined by Edwards, et al (1998, 4). Le Fevre et al (2003, 731) highlighted that there are both subjective and objective depictions of a person and their work environment.

There is however debate as to whether P-E fit can be used accurately to predict stress in the workplace. Harrison (1985) suggested that the objective P-E fit could not reliably determine a connection with stress unless the individual had a clear self-assessment and a realistic view of their workplace. This meant that subjective fit would be the primary predictor of both stress and stress in a workplace. P-E fit theory is an interesting look at how well a person can work in a particular environment based on their perceptions of that environment as well as how it actually exists in reality. A potential difficulty in the application of the theory arises when the changing nature of people's perceptions are taken into account. The dynamic nature of modern workplaces where major changes can occur regularly mean that the successful use of the theory could possibly be more difficult. It is now necessary to look at the personality type that is associated with high stress levels.

Type-A Personality

It appears that a running theme in the study on stress is that individual methods of both perceiving stress and coping with it have a huge bearing on the health effects it can potentially have. In other words some people have to the ability to deal with stress more effectively than others even if they are a Type A personality.

This personality type is associated with being highly competitive, impatient, tense and working excessively. Sutherland and Cooper (1990, 74) described it as highly competitive with high achievement needs as well as having a sense of time urgency. The behaviour is commonly associated with stress although stress literature has failed to find a reliable connection between stress and coronary heart disease. Cooper & Payne (1988, 214) show that this difficulty relates to individual differences in subjects that relate to both Type A behaviour and the symptoms. Indeed they go on to say that Type-A behaviour has stronger connections with anxiety and neuroticism. Heilbrun & Friedberg (1988, 422) offer a viable

explanation for this when they showed that because of the competitive nature of persons with a Type A personality they are more prone to stressful situations due to their personality traits. It should be noted however that their study also failed to recognise a connection between heart disease and this personality type.

Transactional Stress Model

Lazarus (1966) researched the theory of a transactional stress model. This stress model has received considerably less attention in academic circles than other models over the course of recent decades. The interactive stress model is based on the demands on the workers and their scope to make decisions, whereas the transactional model focusses on the individual's perception of the demands and their inability or ability to meet the demands. If there is a perceived inability to meet the demands then stress can occur. Goh et al (2010; 13) propose that the transactional model is based upon the fundamental theory that a person will initially conduct an appraisal of a potentially stressful event to determine the potential threat to their state of wellbeing. Then a secondary appraisal occurs to assess whether the person has the capacity to deal with the potentially threatening or challenging event. They outline that whether or not stress occurs depends upon the person's capacity to appraise the threat and their coping ability. It seems that the transactional model is based more heavily on the subjective views of the individual and their circumstances rather than the objective approach taken in the interactive model previously discussed. Lazarus (1990; 3) highlighted the exact nature of what he meant by transaction. "Transaction implies that stress is neither in the environmental input nor in the person, but reflects the conjunction of a person with certain motives and beliefs (personal agendas as it were) with an environment whose characteristics pose harm, threats or challenges depending on these person characteristics" (P.3). He also went on to make another highly relevant point about

transaction when he said that it suggest that there is a process taking place. And because the relationship between person and environment is always changing the stress is never static Lazarus (1990; 4). Cox (1978) proposed his version of the transactional stress model which was broken down into several different stages. (1) environmental demand (2) environmental demand and the ability to cope (3) the stress responses individuals experience and the physiological effects of the stress (4) the after effects of the coping responses (5) the feedback that happens in the different stages of the stress process. Jerusalem (1993) articulates that despite the fact that various transactional stress models exist, they all have 3 common elements: (a) antecedents to stress (b) mediators of stress (c) outcomes of the stress. He continued to highlight that the antecedents to stress are often associated with the person or environment such as Type-A behaviour because they impact on a person's perceptions of the stressors. Jerusalem (1993) also explained that the mediators are the processes that occur between the antecedents and the outcomes which can encompass exhaustion or burnout. It can be now be deduced that many transactional stress theories are constructed upon similar fundamental characteristics.

Having now explored the fundamental theories in literature relating to stress it is possible to look at how stress can affect newly qualified dentists. This will be done by arranging literature into five thematic areas of investigation. These themes have been previously used in the McCann (2009) study of pharmacists with one being designed for this study, and they will give this research a well-defined structure.

Time Pressure and Managing Workload

There are five main areas within this research that are relevant in determining the stress that newly qualified dentists have to deal with. The first is the issue of managing the workload and dealing with time constraints. It is abundantly clear from many noted literary

sources that dentists and other medical professionals often have difficulties in dealing with their workloads. Sutherland & Cooper (1990; 168) outlined that time pressure and high volumes of patient cases were regularly reported as being the most stressful problems associated with dentistry. A study by Howard et al (1976) showed that dentists with the highest level of income were more likely to suffer from burnout due to stress. This relates to workload and time pressures also as the authors pointed out that the increased income was due to the dentists dealing with higher numbers of patients. They went on to say that this high workload entailed more time spent in direct contact with patients and this led to a stressful lifestyle. Kumari & Sharma (1990) and Herzberg (2000) showed that generally medical graduates do not receive any training in the best methods to cope with stress. Linn et al (1985) showed that time pressures seem to affect young doctors more than their older colleagues. There are constant references to time pressures in literature studying the effects of stress on dentists, e.g. Myer and Myers (2004).

As this study aims to research stress and its effects on young dentists it may be useful to see if the same pattern of older dentists being able to deal with stress better also applies. Antoniou et al (2003; 593) conducted an in depth study into the stressors that affect young medical doctors, these can be applied to the stressors affecting their counterparts in the field of dentistry. Their survey was completed by 355 respondents and such are the time restrictions experienced by the junior doctors that the researchers claimed that this was a significant contributory factor in the low response rate. They found that out of 46 potential sources of stress having far too much work to do and having limited time to complete tasks featured as some of the most significant stressors experienced by the doctors in that particular study. Myers and Myers (2004; 91) conducted research in relation to stressors in dentistry and their findings are similar to those in the research around young doctors. Their study used a work stress inventory for dentists to identify the most prevalent causes of stress. Again the issue of dealing with their workload and time constraints were very

common causes of significant stress. More specifically they noted that running behind schedule and dealing with constant time constraints was the root of many problems. They noted that dentists running behind schedule was the most commonly reported cause of stress in the survey.

There is clearly a pattern of high workloads and an inability to consistently deal with it that leads to stress according to the participants in many studies in the area of dental research. Moller and Spangenberg (1996) highlighted that younger dentists have more difficulty in finding the time to meet with family and friends. They continued to say that these stressors manifested themselves in physical and mental ailments such as tension, backache and difficulty sleeping. Baldwin et al (1999, 35) were able to add more evidence to the area of stress and its effects on young dentists who had recently qualified. High levels of workload once again emerge as a significant stressor as the authors also mention that in the formative years of their careers the young dentists are often too busy seeing patients to reflect and learn from new experiences. Ayers et al (2008, 277) explored the most common causes of stress in New Zealand dentists when they conducted a nationwide survey of a sample of 700 dentists. The results of this survey are similar to the studies conducted in other countries. Time pressure and long working hours were identified as some of the most serious sources of stress in this particular study. It seems clear that these stressors affect dentists of varying levels of experience in many different nations. However, interestingly the authors of this study note that even in the case of New Zealand dentists they suffer from the aforementioned stressors less than dentists working in other countries. They also noted that the cross sectional nature of the study was something of a limitation in that they could offer less information on the causes of the stress.

Job Dissatisfaction

The concept of job satisfaction and how it relates to the field of dentistry can be broken down into several areas for further analysis. This can add clarity to the effects of stress on the different areas of job satisfaction for the purposes of this study. Luzzi et al (2005; 180) describe job satisfaction amongst dentists by dividing the subject into different dimensions. They suggest that it comprises of areas such as compensation, relationships with colleagues, patients.

Description of job satisfaction dimensions/sub-scales – Luzzi (2005)
Autonomy satisfaction with job independence which includes dealing with outside reviewers and treating patients according to the best clinical judgement.
Relationships with colleague's satisfaction with relationships with other dentists both personally and in the practice setting.
Relationships with patient's satisfaction with dentist-patient relationships in terms of patient needs and their demands for treatment and time to develop good relationships.
Relationships with staff satisfaction with relationships with non-dental staff in terms of staff being supportive and reliable in the practice setting.
Personal time satisfaction with quality and quantity of time to self and family.
Intrinsic satisfaction with the personal rewards of being a dentist in terms of finding clinical work personally rewarding, patient gratitude and having a positive impact on those in need.
Community satisfaction with the community in which the dentist practices in terms of feeling at home, belonging and being respected.
Compensation satisfaction with pay given level of training and experience and also compared with other dentists.
Administrative responsibilities satisfaction with paperwork requirements and the amount of administrative work to be done.
Resources satisfaction with the facilities and materials on hand for clinical practice.

The Luzzi et al study (2005) study focussed solely on the area of dentists and their job satisfaction. According to their study a major cause of job dissatisfaction in dentistry was dealing with difficult or dissatisfied patients. Myers and Myers (2004; 92) outlined that fragile patient relationships accounted for a high feeling of overall stress amongst the population of dentists surveyed in their study. Cooper et al (1988) showed that being negatively perceived by their patients was one of the most common predictors of poor mental health in dentists.

There are several studies that directly relate to stress in dentistry and a common theme amongst them is dentists having issues in dealing with patients. Indeed another area that this study will investigate later is patient care responsibility. Firth- Cozens & Payne (1999) give more insight into difficulties associated with patient care when they suggest that health professionals are more at risk of burnout from stress as a result of dealing with patients who are in pain. Baldwin et al (1999; 34) conducted their in depth study specifically in relation to younger dentists. Their findings are similar to those of the other studies mentioned. Young dentists now believe when questioned that patients are overly demanding in their expectations from dentists. It may be the case that patients have become more demanding of their health care providers in recent times and this is leading to high levels of stress for those providing care. Firth-Cozens (1995) highlighted in another of her studies relating to other medical professionals that the constant contact they have with patients can lead to stress and eventually burnout. It seems that health professional that have an excessively demanding schedule where they have little free time are at a significantly higher risk of having stress related health issues. Palliser et al (2005; 355) support the idea of the problems facing dentists with even more research that supports the previous studies. They showed that in New Zealand dentists dealing with dissatisfied patients was the third most prevalent stressor they had to deal with. The first two stressors

were (a) actually making a mistake, (b) a patient having a medical emergency during treatment, Palliser et al (2005) Balwin et al (1999, 35) articulated that younger dentists with senior staff support feel that they have more confidence and this highlights the importance of working at the correct speed and the necessity of supervision. The creation of a supportive atmosphere is critical in the formative years of a dentist's career.

The area of workplace conflicts also needs to be explored when assessing the stress levels experienced by dentists. Clearly if issues arise when dentists are dealing with colleagues or staff there is a definite potential for this to add to the stress that they are likely to experience. McCann et al (2009, 191) showed that several situations that can add to stress levels in pharmacists. One of these was having other medical professionals decide the way in which they should work. Cooper et al (1998, 166) conducted one of the most detailed studies of stress and its effects on dentists. Their five factor approach to sub dividing the stressors highlighted the area of staff problems. More specifically they showed that this consisted of unsatisfactory help and interpersonal conflict with work colleagues. It is clear that in an already stressful occupation having interpersonal conflict with colleagues and dental nurses can easily worsen the situation for the dentists. French et al (2000) identified sub scales of workplace stressors that have the ability to affect nurses. Conflict with both peers and supervisors accounted for two of these stressors showing that dentists are not the only medical professionals that are suffer from stress as a result of workplace conflict.

Although workplace conflict can happen in any work environment the effects may be worse in the provision of medical care where the dentist or other health professional is responsible for the welfare of patients. Stordeur et al (2001) placed the stressors experienced by nurses in the workplace in order of the impact they had. Conflict with other nurses or doctors and being monitored closely by a senior member of staff who wanted to highlight mistakes proved to be prevalent stressors in that study.

Ayers et al (2008, 278) interestingly noted that dentists in large cities found that they suffered from more stress due to difficulty in finding suitable support staff. There is an obvious potential for situations that are conducive to excessive stress to arise when a dentist finds that his or her dental nurses are unsuitable for whatever reason. The primary source of difficulty appears to be when dentists have to deal with problematic patients. Cooper et al (1988, 166) showed that patients who underrate their dentists or do not respect the complex nature of their job ranked as two of the more significant stressors in dental practice. Myers & Myers (2004, 91) study conducted sixteen years later showed that problems with patients was still a massive source of stress amongst many dentists. In their study almost seven out of ten dentists placed this in the top three stressors in their work. Peisah et al (2009, 305) says that the increased dissatisfaction in young doctors in recent times may stem from their increased expectations as to how their careers will develop. They go on to say that older doctors may have developed more refined techniques in dealing with their workloads and this may protect them from excessive levels of stress.

Professional Uncertainty

Cooper (2009, 127) pointed out that the global economic recession is responsible for increased stress due to job insecurities and financial pressures that have arisen. He goes on to say that it is likely to lead to an increase on a wide range of illnesses. However the purpose of this study is to assess the impact that uncertainty in dentistry and Cooper (1983, 1985) identified six variables in the organisation that correlate to stress. One of these stress correlates that is relevant to this study is career development and a possible lack of development opportunity. This has similarities to the themes used in this study. Professional uncertainty is a potential stressor in dentistry and secondly and perhaps even more importantly is career development. Stress can easily arise from this when there is

lack of opportunity for development within a particular role. This includes limited promotion prospects or job insecurity. It can be questioned whether or not this can be applied to dentistry. Are dentists happy to remain at the same level on throughout their professional lives or if not what other opportunities are available to them? Foot and Venne (1990) noted that there is a positive correlation between stress and having a barrier to career development. Chandra and Sharma (2010; 304) carried out a study to evaluate the status of potential predictors of occupational stress. Half of those who responded said that career development or rather the lack of it lead to stress in their lives. DiMatteo et al (1993) showed that having limited opportunities to develop their clinical skills can possibly predict the onset of stress in dentists. Interestingly their study focussed less on the physical elements of dentistry such as financing their practices that can lead to stress and more on the thoughts and opinions of dentists about their own profession. They found that it is critical that dentists have the opportunity not only to maintain their current skill levels but also to develop them further. This is seen as being important in the prevention of stress in dental practice. The study also highlighted the fear of making mistakes and the potential for these mistakes to be exposed in the media. There appeared to be a close correlation between time and workload constraints and a fear of making mistakes in patient care.

Patient Care Responsibility

The issue of patient care responsibility is likely to be one of the most significant stressors experienced by dentists. Many studies have outlined that it is common for dentists to have a fear of making a mistake in the treatment of patients. They may be fearful of patients taking legal actions in the event of a mistake being made or their professional reputation being damaged. This may be of even more importance in the case of private practices that are in competition with many other practices. Baldwin et al (1999; 35) outlined that the

fear of legal action and the possibility of making a mistake was a serious worry for young dentists. This once again shows that newly qualified dentists require support to deal with the significant responsibility placed on them when they begin practicing. Sutherland and Cooper (1990, 173) showed how much dentists are stressed in dealing with their patients. In their factor analysis of stressors associated with dentistry problems when dealing with patients was one of the five factors. It showed that the possibility of making a mistake in the treatment of a patient was the primary stressor under that heading. The second most prevalent stressor was not the possibility of making a mistake but actually making one. Other notable causes of stress were dealing with nervous patients and patients having medical emergencies during treatment. Ayers et al (2008, 277) shows that dentists identify having to maintain concentration for long periods of time as a serious stressor in their work. Clearly this relates to the worry of making a mistake which was highlighted in Sutherland's work in 1990. Evidently the thought of making mistakes or actually making them has remained a serious source of stress for dentists even over longer periods of time. This is despite the advancements in treatments one would expect to have been developed over that course of time.

Myers and Myers (2004, 91) found that general practice dentists found dealing with uncooperative patients was the second most stressful element of their work. The foremost stressor was when dentists are behind schedule (Figure 3). From the dentists perspective it is clear that patients who are regarded as being difficult can easily make their attempts to create the best possible outcome for the patient more difficult. The same study found that dealing with dissatisfied patients also ranked as being a prominent stressor. When issues such as the worry of making a mistake combined with dealing with difficult or uncooperative patients are taken into account it is somewhat clear that the professional life of a general practice dentist can become stressful quickly.

Luzzi et al (2005; 182) showed in their study that it is important for dentists to have a good relationship with their patients. The dentist's ability to meet the particular requirements of the patient's treatment was a strong determining factor in assessing how satisfied the dentists were in their job. This shows again that the responsibility that the dentists has for the care of the patient can lead to stress related problems in problems arise. Ayers et al (2008; 278) further develop the issues surrounding stress caused by patient care responsibility. Their study of New Zealand dentists showed once more that the prospect of making a mistake featured highly in the type of stressors experienced in dentistry. Once again it is evident that the sources of stress in dentistry appear quite similar in a variety of different countries. Lokman et al (2011; 38) showed that doctors can easily experience situations when caring for patients that may lead to significant sources of stress. They showed that there is significant stress for the care provider when the patient expects a particular treatment and the doctor in question has no viable solution for them. This was known as a failure of the system to provide the necessary level of care. However as the doctor is the one delivering the news they are often the first to receive criticism due to the health system failure. This situation may also be very relevant in the case of dentistry where dentists experience anxiety and stress as they have to tell patients that they have no access to the treatment they need due to restrictions from the public health service in the country.

Myers and Myers (2004)		
Stressor Percentage (%)		
1	Running behind schedule	68.40
2	Coping with difficult, uncooperative patients	64.80
3	Working under constant time pressure	64.40
4	A patient having a medical emergency in the surgery	60.80
5	Dissatisfied patients	52.20

6	Treating extremely nervous patients	47 40
7	Seeing more patients than you want to for income reasons	46 40
8	Working constraints set by the NHS	46 20
9	Working quickly to see as many patients as possible	45 20
10	The piecework system of payment	43 40

Figure 3 – Ranking of Stressors in Dentistry

Professional Recognition

The professional recognition that dentists receive over the course of their work seems to be an intrinsic element of whether or not they will be satisfied with their work or suffer stress as a result of it. There are several studies that support the idea that dentists who are not given what they believe is the proper recognition for the specialist service they provide will be subject to occupational stress. Cooper (1990, 173) showed that dentists who felt underrated by patients ranked this as a significant source of stress. This was closely followed by patients showing a lack of appreciation for the detailed nature of the work. It is clear that this perceived lack of recognition and respect can quickly lead to problems, or at the very least contributes to existing common stressors in dental practice.

Shugars et al (1991, 739) say that there are two types of reward dentists can expect in the course of their work: extrinsic rewards related to pay, however it is the intrinsic rewards that are of interest. They showed that intrinsic rewards such as patient respect and recognition are important for dentists to feel satisfied with their work. Evidently when this respect and recognition is void in their professional lives, dentists cite this as a prominent source of stress. Luzzi et al (2005, 183) noted in their dimensions of job satisfaction analysis that dentists ranked being respected in their community as being highly important.

Interestingly the dentists who were over the age of 55 felt that being respected meant more in terms of the satisfaction they had with their jobs. It is clear that when being recognised and respected is considered to be this important that if dentists perceive that they are not recognition they feel that they deserve then the potential for stress is significant. Gorter et al (2007, p 51) conducted a study where the level of engagement of dentists in their work was measured. They noted that the level of prestige associated with dentistry was again considered as being important in the study. There is a pattern throughout literature in relation to dentistry that suggests that a need for recognition is highly valued. McCann et al (2009, 189) showed that dentists are not the only medical professionals who suffer from a perceived lack of respect. In their study they found that pharmacists experience a need for greater recognition from doctors. However the situation from dentists is completely different as they feel that the general public are the group that do not extend them the recognition they desire. Felton (1998, 238) gave an interesting reason as to the why many dentists may not receive recognition for their work. He said that the majority of oral work is not visible to others and thus it cannot be appreciated. He went on to say that unless another dentist is there to give a positive review then most likely there will be no feedback for the dentist who performed the work. DiMatteo et al (1993, 159) showed that their study supports the findings of other studies in relation to dentists and professional recognition. They outlined that once again feeling respected and having recognition that they are involved in specialised medical care in an integral part of dentist's mental wellbeing and avoidance of stress.

Methodology

Stress is and its effects on individuals are subjective and the means of conducting this research has to be mindful of this in order to obtain the most relevant information possible. One of the most crucial elements of this research is the Health Professionals Stress Inventory developed by Wolfgang (1988). This gives the research a framework to develop themes that clearly relate to the stresses related to newly qualified dentists. There was an initial difficulty in sourcing this, however a paper related to the job satisfaction of pharmacists yielded a result when the stress inventory was used as a part of that particular piece of work. The stress inventory which can be applied to many different health professional occupations outlines twenty two different questions that can be used to evaluate the stress experienced by the health professional type in question. For the purposes of this research the questions in Wolfgang's work were grouped together in themes so as to give the research a clearer structure that would aim to identify the most relevant information. Themes that were identified in the McCann (2009; 191) on pharmacist's stress were used to guide the literature review process. One of the five themes 'job dissatisfaction' was developed by the researcher as not every heading from the pharmacist was suitable for this study.

This research has been carried out in the interpretative paradigm. Kuhn (1962; 8) defines a paradigm as 'universally recognised scientific achievements that for a time provide model problems and solutions to a community of practitioners'. It is very much a subjectivist view that is taken in the study. Stress is experienced and interpreted in different ways by individuals and only with the adoption of the subjectivist approach can it be studied properly. Of course axiology plays an important part in explaining why somebody may choose a particular topic for the purpose of research. Collis and Hussey (2009; 60) articulate that those working within the interpretivist paradigm have values. The values

held by the researcher in this study led to exploration of the concept of stress. It was further narrowed to stress and its effects on newly qualified dentists as it is considered a high stress occupation. However initial research revealed that this particular area has not been investigated as thoroughly as some other stressful occupations. It is the belief that stress is both destructive and in some cases dangerous to one's health and secondly their capacity to enjoy their work that prompted this research.

The collection of data has been achieved via the use of both interviews and a survey. There are different methods available for the collection of data that can be deemed suitable for a study such as this. There are obviously textbooks; however the limited availability of text books in such a specific area of research posed a problem early in the process. It was immediately apparent that the use of the College intranet had the capacity to make a far higher volume of information available with relative ease. Academic journals that are peer reviewed are the types of resource that are most highly regarded. Databases such as Sage and in particular Ebsco provided the bulk of the necessary material. There were also internet sources however that allowed access to peer reviewed academic articles that specifically related to stress in dentistry and these proved very valuable in the greater context of the study. The use of the Refworks program also made the collection of references more efficient in terms of time and accuracy. It was also considerably easier to store the names of the articles there so that they could be easily retrieved and read when necessary. The speed with which these articles could be found was important in the context of this study as it takes place over a reasonably short period of time.

The study deals in particular with stress and its effects on newly qualified dentists and they had recently qualified from UCC. However dentists with significant clinical experience were also used in the study to identify if the nature of occupational stress in dentistry changes over the course of the dentists career. The newly qualified dentists were contacted and asked to fill out an online survey using the survey monkey website. They were

selected because they met the criteria of being recently qualified and this confirmed their suitability for the study. The qualified dentists were located using connections and three of them agreed to do semi-structured interviews whilst also being recorded. The qualified dentists all had enough professional experience to divulge the details of the particular stressors they have to deal with. They had amassed considerable experience in the area of private practice making them ideal for this study. They had the ability to give detailed insight in the specific stressors commonly experienced by dentists. This was critical in order to accurately match the findings of this study with the results of others studies carried out previously. Tashakkori & Teddlie (2003) showed that the mixed methods approach is suitable when it allows better evaluation of the research findings so that more reliable inferences can be made.

There are several valid reasons as to why the interpretive approach was more suitable for this study. Collis and Hussey (2009; 56) outlined that one of the primary criticisms of the alternative research paradigms, which is positivism, is that it is not possible to make a separation between humans and the social contexts they exist in. The interpretive approach is more applicable in the context of a study of the effects of stress. Collis & Hussey (2009; 57) suggest that interpretivism is supported by the belief social reality is not objective but very subjective because it is fundamentally shaped by our perceptions. During the course of the study it was vital that a strong attempt to understand the phenomena of stress from the dentist's perspective. This allows for collection and analysing of data whilst staying true to the interpretive approach. Saunders (2007; 107) said that it is crucial to the interpretivist epistemology that when conducting research that an empathetic approach is used. The interpretive approach allows for the use of different research methods to attempt to identify a pattern relating to the phenomena in question. In this case that is stress and its effects on the chosen professional group. Ultimately the interpretive philosophy embodies the correct approach to gathering and interpreting

information for this study. Merriam (1988) said that the assumptions that provide a foundation for the interpretivist paradigm are:

- Being primarily concerned with the process and not the outcomes.
- Having more interest in the way people perceive the world and experiences and not frequency.
- The researcher is the primary research instrument, and it is through them that it is collected, analysed and interpreted.
- The researcher must use the power of description and visit places where actions take place and observe this.
- The research process is mostly inductive and because the researcher is attempting to build concepts and theories.

The researcher will do whatever is necessary to identify with the views of the subjects so as to understand the information they offer in the most effective way. The use of semi-structured interviews was used in this process as it is one of the most suitable methods in the relation to the interpretivist paradigm. This type of interview is useful in eliciting the kind of information that is most relevant in this particular type of study. A survey was also used to gather information about stress and its effects from newly qualified dentists. Although a survey may be from the positivist paradigm, by combining it with the findings of the interviews there will be a varied source of data to compare carefully with the findings of previous literary works. Indeed the mixed approach towards gathering data will be useful in exploring the phenomena of stress in this context more thoroughly.

There are several different methods of data collection that could have been used in this research. However it was determined at an early stage a survey and semi structured interviews would provide the best quality of information relative to the research paradigm adopted in the study. The first method of collecting information used was a survey. The

website Survey Monkey was used for this as it allows for the sending of the survey via email and responses are automatically collected by the website for easier analysis. The use of this website has obvious advantages as it makes the process easy for the respondent as they only need to complete the survey and the responses are sent back to the website. This service also allows for complete anonymity of the responses and it clearly shows if any of the respondents have not fully completed the survey. There are other potential ways of gathering information that could have been used for this study also such as case studies. Although the case study approach has its own advantages, for the purposes of this study the combination of both survey and semi structured interview was a more suitable approach given the nature of the research. Whilst experiments can be utilised this method would allow for the strict control of the conditions in which the information is gathered is would be wholly unsuitable for this research. Not just because of time constraints, which in itself would make the experiment difficult to carry out, but also because of the obvious difficulty of experimental and control groups with newly qualified dentists or the experienced dentists would not be feasible.

Survey Method

Surveys can be easily distributed during the course of a research project such as this with the aid of the survey monkey website as previously mentioned. The website allows for a custom made email message to be sent to the recipients of the survey. This can be used to clearly and concisely explain the nature of the study as well as explain that the findings are completely anonymous or any additional relevant information. A definition of stress was also given at the beginning of the survey. Saunders (2009; 144) says that surveys are commonly thought of as having authority and it can be easily explained and understood by the group it is aimed at. This ease of understanding in this study and the speed at which the

survey could be completed were important in attempting to maximise the response rate. Saunders (2009; 144) also highlighted another important aspect of the survey approach by saying that the survey strategy can be used to produce findings that represent the whole population without incurring the cost of actually gathering data from the whole population. It should also be noted that almost all of the most noted authors who have studied the phenomena of stress in dentistry have used the survey method for quantitative data collection.

These include the Cooper et al study (1988) and Myers and Myers (2004) study to name a few. Having noted this at an early stage it seemed only logical that this strategy would yield useful data for the study. The Survey Monkey website also has a feature that allows for the easy comparison of the respondent results which makes the process of analysis the information faster than if the surveys were sent using other methods, such as postal surveys. It should also be noted that prior to sending out the survey it was piloted to ensure that it operated correctly and to avoid issues when the survey was sent to the full list of people that were targeted. Remenyi et al (2005; 151) showed that pre testing gives the opportunity assess the clarity of various elements of the questionnaire including the questions and the cover letter. However they also highlight that for masters students time constraints can limit the ability to perform extensive pre testing. Also the website automatically collects the responses and stores them safely until the analysis stage is reached. Maylor and Blackmon (2005; 182) highlight another significant benefit of the survey strategy when they said that they can be a fast and cost effective method of collecting information when there is not time or resources to conduct highly intensive strategies such as observation. They go on to say that a survey is of further relevance when studying a group as opposed to individuals. It was clear that the newly qualified dentists would have the answers to the questions of the survey and from an early stage this made the survey method a good choice as one of the two methods of gathering information. The

survey was laid out in a simplistic manner that would ensure that respondents would complete it after they had started. For the purposes of this study a survey provided the best platform to gather the required information in the given timeframe. This coupled with the fact that it is commonly used in major studies in this area of research confirmed its suitability for this survey from an early stage in the research. It is also a cost effective method of obtaining results and this further added to its usefulness. In order to maximise the response rate a reminder was issued to the recipients after one week and this led to more responses in the following days. Once again given the time constraints it was not possible to search for more possible respondents to complete the survey for this research.

Interviews

Semi structured interviews were used in the process of collecting primary qualitative data for this study. The structured interview is associated with the positivist paradigm and unsuited to this study. The study of stress with the use of interviews requires a certain amount of flexibility during the questioning process. The decision to use the semi structured interview method is based on the fact that it allows for some of the questions to be prepared in advance. Collis & Hussey (2009, 195) explain that the use of unstructured interviews allows for additional questions can be asked to gain a deeper understanding of the answers to previous questions. The research aims of this study involve looking at stress which has previously been shown to be experienced in a different ways by various people. In other words stress can be known to be highly subjective. In the context of exploring the effects of stress on dentists and looking at how they manage stress the semi structured interview is undoubtedly the best choice. During the semi structured interview process there is enough flexibility to explore the relevant issues in detail. If the answers to prepared questions render new interesting data then this interview style allows for

questions that can be added to explore this effectively. In other words there will be a degree of fluidity in the conversation that would not otherwise be possible if the interview was based wholly on pre prepared questions.

It can be said that the semi structured interview allows for the eliciting of more relevant information relating to the concept of occupational stress in the context of this study. It is however important not to lead the interviewee in any particular direction with the questions. Indeed in the case of this study it was found that the questions based on the themes were sufficient to gather the required data whilst also allowing some room to discover some other sources of stress. Unstructured interviews can take too much time and by their nature it can be difficult to fully address the questions associated with the research. The unstructured interview type may unearth information that is useful but on the one hand much of the information may be irrelevant. There is also a stronger possibility the interviewee might go off the topic without a degree of structure to keep them focussed. Conversely the structured interview is too rigid an interview method to fully explore the range of possible stressors and uncover any newer or particular stressors in the Irish context that is unless there are questions to address such issues. It is for these reasons that the semi structured method takes the advantages of the other types yet still allows for detection of others stressors. The interviews conducted involved four dentists who had amassed considerable experience in general practice dentistry. The process of interviewing experienced dentists gave an extra dimension of detail to the research. By taking this approach it was possible to analyse how stress can change over the career of the dentists. The interviews in this study were recorded also having assured the participants of the confidentiality of the process. They were reliably told that the information is collected anonymously and will be deleted completely after the study is marked. One of the four interviewees did not wish to be recorded however. The use of recording devices allows for

easier analysis of the interview afterwards and the interview itself is conducted with greater detail without the need for comprehensive note taking. The type of questions used in the interview process can have a significant impact on the type of information gathered throughout the process. Saunders et al (2007; 329) highlight that the strategic use of themes in the semi structured interview is necessary to ensure a good outcome. Themes were developed early in this research approach. They not only help guide the collection and analysis of relevant literature but they are highly useful in making the interview process as effective as possible. They assist greatly in keeping the discussion focussed on the issues being explored. The primary forms of questions used were open and in particular probing questions. This approach really gets to the core of the causes of stress in the context of this study. The location also helped in generating the best answers from the participants. When the interviews take place in a location familiar to the interviewee they can feel more relaxed and willing to speak more freely. It also serves to maintain the collection of reliable data as bias is avoided. The dentists were free to answer the questions without any external influence. It should also be remembered that the themes used in the literature review were used effectively to guide the interview process.

The grounded theory approach towards gathering and analysing information is most suitable as it allows for a stress related theory to be built on the basis of the research results associated with the semi structured interviews. The combination of both a survey and interview is commonly used in studies on stress. The interviews are used to gather more detailed information on the findings of the survey. A similar approach is used in this study. There is both an inductive and deductive process that has taken place in the research. The deductive survey method led to highly structured data collection where the researcher remained somewhat distanced from those completing it. The anonymity granted to those who responded ensured that. Conversely the inductive approach of carrying out semi

structured interview is a much more personal mean of gathering data where the researcher gains a deeper understanding of the nature of stress in this context and crucially, the effects it can have. This particular combination of methods gives the research stronger credibility and a higher level of reliability and validity to the findings.

The analysis of gathered qualitative data is the final step in the proposed study. This will use the interview information to develop logical solutions to the research aims of the study. The grounded theory approach will involve building a theory that relates to the findings of semi structured interviews.

Data Analysis – Survey

Some studies that collect a large number of responses to their surveys may use programs such as SPSS to analyse these results and identify trends in the data. This study however did require the use of such programs due to the lower number of survey responses collected. As previously outlined the time constraints also made it difficult to gather more responses in the short time frame allocated to the study. However, given that there were a relatively small number of responses collected it was still possible to analyse what was collected in a structured way, so as to see if the data correlates with the literature or if differences were evident. It is only after careful exploration of high quality literature on the topic can the correct information that needs to be collected be decided upon. The Wolfgang Health Stress Inventory for Health Professionals gave excellent guidance as to the course the literature review should take. This in this in turn allowed for the survey to be designed around this stress inventory. Since the Stress Inventory was used in studies of this nature previously it confirmed its suitability for this study. Its structured questions explored the nature of stress and its effects in this context very well as well as reducing the

possibility of respondents failing to understand questions. Rating questions were used to collect the data with a Likert rating scale.

It was previously outlined that the Survey Monkey website was used to gather the data. A significant advantage of using this particular method is that the results can be viewed collectively for each question, making analysis of the information faster and more accurate. The website has inbuilt features that automatically show if any of the respondents failed to complete the survey or skipped any sections of it. The responses for each question are represented by a line graph, making the process of identifying themes more effective. The themes utilised in this study have been used in another study also. McCann et al (2009) identified these themes in their study of stress among pharmacists. This gives the themes a higher degree of credibility for use in this study as they have been successfully applied to a research article relating to another group of health professionals. By looking at each question in the survey and allocating it an appropriate theme, it is possible to structure the data for better analysis.

Data Analysis – Interviews

One possible method in the analysis of data is categorisation to correctly help guide the analysis process. Saunders et al (2009, p 492) highlights that categories may be developed from either the data or theoretical framework. The themes that have been used to forge a path for the literature review will be the categories that relevant pieces of interview data will be assigned to. This will ensure that the process of analysing the information closely relates to the other key areas of the study whilst also ensuring that the best data is used in an effective way. The themes have already been identified as the key headings under which stress can be analysed in the context of this study. It is critical for the analysis of the data to successfully identify relationships between what the literature has found and the

findings of this study. It can however occur in some instances that a relationship cannot be found or some unexpected result is uncovered. In this event a logical explanation for the uncharacteristic finding must be provided. Utilising the data continues the process of keeping the analysis structured and effective. It involves assigning relevant data to the correct category. Saunders et al (2009, 493). The importance of this is clear, it maintains the integrity of the analysis process and presents the data in an acceptable way in the context of academic research. Despite the use of categorisation with themes the data will not be broken down extensively so as to keep it close to its original form which is better for this study. Saunders et al (2009) say that some researchers dislike excessive fragmentation of data. Hence categorisation will only be used to a limited extent in this research to order the data properly. Quinlan (2011, 365) indicates that there are four stages in the process of analysing data. These are Describing data, Interpreting data, Drawing Conclusions and finally Theorization. This practical approach again ensures that the process analytical process is robust and with the final stage of producing a theory from the data an addition is made to existing knowledge in the subject area. Quinlan (2011, 366). The use of narrative analysis is also used in this study. Saunders (2007, 504) says that some researchers consider the fragmentation of data is unsuitable in certain types studies. This is why the use of narrative analysis will be of use in this research. It makes it possible to keep the flow of data from the interview without unnecessary interruption in its presentation. Saunders (2007, 504) suggests that a narrative is usually considered as an account of some experience that is told in a sequenced manner, and the way in which they are told can convey meaning to the researcher. For the purpose of this study narrative analysis will allow the nature of stress in this context to be conveyed accurately which will make the findings of the study clearer.

Research Findings

As previously outlined the questions in the survey used in this research are based on those of The Stress Inventory for Health Professionals by Wolfgang (1988) The survey was completed 13 times with a 92.3% completion rate This happened because one respondent chose not to answer all the questions Females made up 61.5% of the responses and 76.9% of those that completed the survey were less than 24 years of age The semi structured interviews relate to 4 experienced dentists who gave their views in stress in dentistry

Time Pressure/ Managing Workload

The beginning of the survey explores the area of time constraints More than half of the respondents said that they sometimes feel that they have so much to do that it cannot be done well as illustrated in Figure 4 A further 25% answered that this is often the case

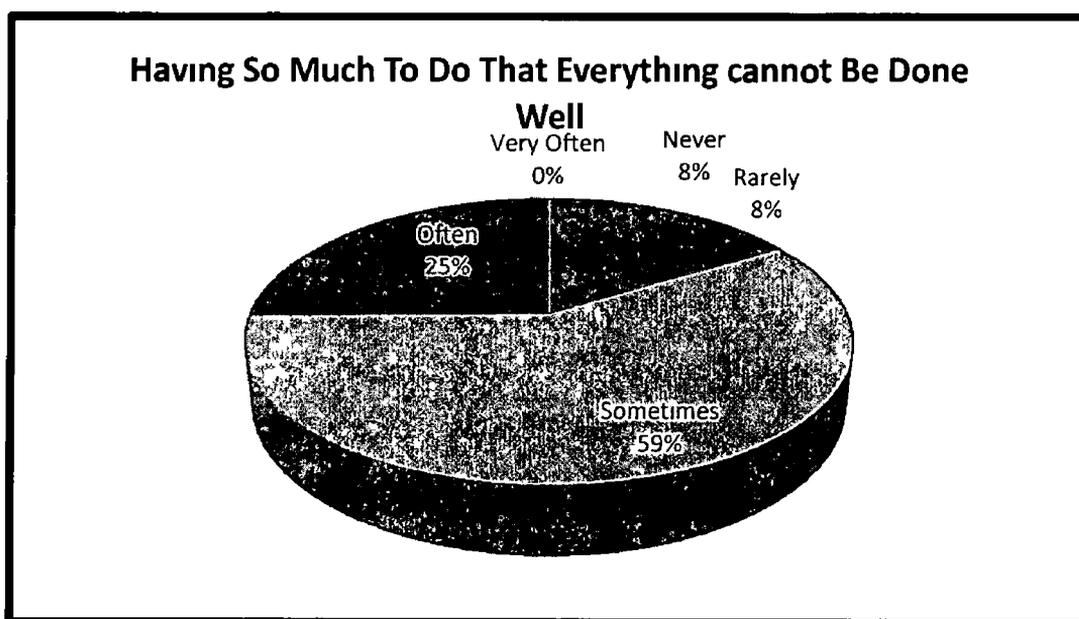


Figure 4 – Time Related Pressure

This correlates with what many studies have found previously including Sutherland and Cooper (1990) and Myers and Myers (2004) Their studies clearly demonstrate that time pressure has a strong impact on the professionals lives of dentists With studies highlighting this point over a period of decades it appears that this is an intrinsic difficulty within the dentistry profession It should also be noted that since newly qualified dentists in this survey rated it as a prevalent stressor at an early stage of their careers, the potential for time related problems to cause stress is significant When asked about the pressures related to time Interviewee A highlighted that it can be challenging to ensure that they do not spend too long treating a patient

Interviewee A

“I think the main problem in managing the clinical workload is the amount of time you can give to a procedure, and not over running and keeping other patients waiting Also completing a course of treatment in a reasonable timeframe”

He also pointed out that it can be difficult to stop thinking about work when they have left the practice It is clear that this could either lead to stress or make increases in existing stress levels

Interviewee A

“It’s difficult to switch off, it’s difficult not to be thinking about the patients ”

This dentist also highlighted another source of stress when he spoke of looking at his appointment book

“I developed a habit of looking at the appointment book for the following day or following two days and go home thinking about the patients I would see the next day”

Another dentist explained the stress that can result from having people in the waiting room when they are trying to control the time they allocate to patients

Interviewee B

“I always find it more stressful if I am running behind and I know there are people in the waiting room”

She also went on to say about dealing with a work life balance

“Maybe as a new graduate you are not great at it because you feel like you have to go home and read up on things you’re doing the next day ”

Interviewee D She explained that she worked between three practices and had very little free time as a result She said that the economic situation had meant that she worked longer hours and had fewer patients More work is being given to a smaller number of dentists in the practices

The dentists that were interviewed for this study are experienced and have been qualified for some time, yet the stress associated with managing time and workload still appears to a common source of stress for them When dentists are busy treating patients and mindful that more are waiting the foundations are laid for what can be a stressful work life

The survey revealed that young dentists find it difficult to keep up with new developments in their profession 46% rated this as often being stressful It may be possible that younger dentists find the initial challenge of keeping their knowledge up to date difficult in the early stages of their careers when they are also interacting with patients in the practices they operate from

Wolfgang’s stress inventory questioned the problem of not having enough staff to provide necessary services This was rated as sometimes being stressful for 42% with 25% rating it

as often being stressful. Young dentists feel as though they need more support in providing the high level of care expected by patients. Although the experienced dentists said they are sometimes interrupted, it did not appear to be a common problem for newly qualified dentists. It is possible that junior dentists are more likely to only be dealing with patients that are assigned to them when they begin practicing. Interruptions may therefore be a more prominent feature in the work of dentists who are more experienced in dental practice or even those who own practices.

Interviewee A

“I would get interrupted frequently, that does tend to interrupt the flow of treatment”

Interviewee C

“It can be a bit annoying when people come in and out of the surgery but generally I don’t find it too bad”

From this it’s apparent that interruptions are a source of stress even for more experienced dentists however interviewee C did say that it was a reasonably rare occurrence.

Job Dissatisfaction

Whether or not somebody can be described as satisfied in their work can be a strong determining factor in assessing the possibility of them suffering from occupational stress. Conflicts at work can certainly lead to job dissatisfaction and stress. This however does not appear to be a significant problem for the respondents in this survey. A majority of 58% said it was rarely a problem and 25% said it never caused stress. Stordeur et al (2001) outlined that nurses suffer from stress when they have conflict with doctors. In the context

of dentists the issue of conflict with supervisors/administrators does not appear to be a serious one

Interviewee C

“The most important person really to get on with is your nurse, in a situation like that, I have a very good working relationship with my nurse and the other nurses”

Interviewee D This dentist did however say that there were occasional difficulties in trying to get her secretaries to work longer hours

As previously mentioned in Stordeur (2001) there can be conflict in a doctor nurse working relationship This does not appear to happen as often though in dentistry and there are logical explanations for this Dentists will usually work with a small number of nurses in their practice and they will develop a close working relationship Doctors working in a hospital environment however will work with several nurses on a daily basis and this explains the higher potential for conflict is higher The nature of the hospital environment which is clearly much different to a dental practice may also have an effect More in-depth research on this topic is needed

Newly qualified dentists also appear to work well with colleagues and avoid problematic situations that can cause stress 25% said they never have problems with co-workers and 58% claim it rarely poses a problem Interviewee C gave more information in relation to the difficulties dentists who work in their own practices can find themselves in stressful situations He outlined dentists are more than happy to work as clinicians but problems can occur when dealing with other facets of business ownership This is in the context of those who run their own practices

Interviewee C

“It’s the financial side of it, it’s the human resources side of it, staffing issues all those sorts of things that they find very stressful ”

It is worth considering that because the dentists are newly qualified they may not yet have been exposed to a wide enough variety of situations for conflict to occur. Again 58% claimed that they are rarely stressed because they are not challenged by their work, although 33% said this sometimes caused stress.

Pay is clearly a fundamental component of job satisfaction. With young dentists having invested so much in their education the issue of pay is important. 25% claim it is rarely a cause of stress, however 50% said it sometimes is. As dentists become more established with greater numbers of patients to treat this could easily change. For those that feel as though they now are suffering from stress due to lower than expected pay they should be aware that treating more patients or operating their own practice can increase their salary but exposes them to many of the stressors previously mentioned.

Interviewee C pointed out that the economic situation is creating stressful situations in recent years.

“It’s not uncommon for patients to get to the end of their treatment and say I don’t have the money to pay for that ”

He went on to detail the problems this can cause for the dentist who owns his/her own practice.

Interviewee C

“You still have to pay your nurse, you still have to pay your receptionist and a lab bill to pay potentially as part of that. The laboratory has made something for you that you were

going to put into the patients mouth and that bill still has to be paid, and it's coming out of your pocket Yes those things are very, very stressful ”

Interviewee D Her responses to this were similar to those of interviewee C She said that the economic situation had made it more difficult to get paid after completing work and many patients were opting for cheaper treatments She continued to say that in order to deal with this the business had to offer treatment plans to make the dental care more accessible Interestingly her practice was for private patients only and she did not treat medical card patients This eradicates the need to deal with the health service in relation to medical card treatment options, but the difficulty in getting paid from private patients was a source of stress

The interviews that were conducted showed that stress can arise quickly in dentistry when a practitioner owns a practice and there are cancelled appointment and other problems

Interviewee B

“If you're in practice and an hour long appointment doesn't show up, that can very stressful because you feel like you went to work and made no money ”

It was also asked if the dentist felt as though they had non health professionals determining the way they worked 33% said this was either never or rarely a stress, but 42% said it sometimes caused stress

Interviewee C said that the health service have a major input in determining the type of treatment public patients can avail of

“Funding restrictions can be quite a challenge, that basically asking permission to do certain types of treatments from the head of the local authority in that Quite often when

we are asking to do certain treatments the answer we're getting back is no It can certainly be quite stressful to have to convey that type of information to a patient ”

Lokman et al (2011) found this to be the case when doctors have no way of treating patients they want to because of health system failure The survey also questioned if keeping up with new developments in dentistry The overwhelming response was that it is stressful 46% said it was often stressful and 27% rated it as being stressful very often The interviews proved that it is not only the newly qualified dentists who have this problem Interviewee C gave a practical example as to how a practice owner can be affected

Interviewee C

“You can have a practitioner in his mid-fifties for example who is running a very successful practice in a certain way and then suddenly these rules and regulations are coming in and he's finding it very difficult to adapt ”

The final question in the survey under this theme is if the newly qualified dentists feel challenged by their work and if this results in this stress 34% said it sometimes causes stress but 54% said it rarely does This is most likely because they are recently qualified and still feel challenged by the nature of their work Interviewee A pointed said however that this can change

Interviewee A

“There is a significant cohort in general practice who after a year who after a year or two find the work not terribly stimulating and pretty much the same day in day out ”

It is possible that as the newly qualified dentists become more experienced they may have this issue and seek to find ways to participate in more challenging work If not the repetitive nature of some of their work may lead to occupational stress

Professional Uncertainty

This section investigates if ambiguity within the dentistry profession can have any impact on stress levels of dentists who have recently qualified. Cooper (2009) made a useful point when he said that the changes in the world economy have led to ambiguity which can increase stress. The Health Stress Inventory also explores whether newly qualified dentists feel as though they have the opportunity to develop their skills. The responses indicate that this rarely a cause of stress for newly qualified practitioners. 17% never felt as though it was a problem and 58% agreed that it was rarely a stressor. Interestingly 8% thought it was often a source of stress. This may be due to age differences between the dentists or some putting more thought into their long term career development. In doing this it is likely that they would think about what development opportunities are available to them.

Interviewee A:

“The options then are to do specialist training and the opportunities for development within general practice dentistry are limited.”

Interviewee C:

“I know other people in practice who would remark that things do get quite monotonous”.

DiMatteo (1993) articulated that having limited opportunities for development in dentistry can help predict if dentists will suffer from stress. Further Foot and Venne (1990) found a positive correlation between stress and lack of career development options. The survey also questioned whether or not there are non-health professionals determine the way they practice their profession and if they find this stressful. 67% said that this is sometimes or often a source of stress. On the other hand a total of 33% either rarely or never found it a problem. Again the setting that the younger dentists practice in may determine how they

respond to such a question. In the case of the more experienced dentists however there are some very real concerns over legislative change and how it can affect the way they work.

It is also clear that this is an issue for experienced dentists who feel that there are more regulations coming into effect that will force them to change the way they work.

Interviewee C explained this further:

“There are more and more regulations coming in. There is a real bureaucratic overview of things and people (dentists) find that very stressful.”

The survey also questioned if the newly qualified dentists feel as though they are not allowed to make decisions about their job. 34% said this was either never or rarely stressful with 42% said it was sometimes a stressor. It is feasible that the recently qualified dentists have not practised long enough to be affected by restrictions in how they practice their work. But it was previously pointed out that changing legislation is affecting their older colleagues.

The final part in this section of the finding queries whether the dentists felt as though they can share their experiences with colleagues and the extent to which it creates stress. 67% answered that this is rarely a cause of stress. This may be due to the fact that dentists often work in small workplaces where they have regular contact with other dentists who can give them advice as necessary. When speaking to interviewee it was made clear that the specific type of dental practice they operate from can make a substantial difference.

Interviewee A

“Somebody that is working in a single handed practice is much more isolated and doesn't have that outlet to discuss cases or just to vent their feelings. People on their own are much more isolated.”

When asked if they have the ability to participate in making decisions about their jobs there was a somewhat mixed response 17% said this was never the case, and the same amount responded that it was rarely the case 42% did however say it was sometimes a stressor This may be due to them working in different practices with different management policies or some may be so recently qualified that they have not experienced this yet

Patient Care Responsibility

When asked if trying to meet society's expectations for high quality medical care there was strong evidence from the survey responses that newly qualified dentists are acutely aware of the demands placed upon them in this regard 42% said it was often a source of stress for them with 33% saying it was sometimes a stressor Interestingly however 25% claimed that it was rarely a cause of problems for them This once again highlights the subjective views that exist in relation to stress and its effects Some young dentists may deal with the high levels of expectations more effectively than others It is also possible that by some misfortune some newly qualified dentists have dealt with more demanding patients than others, and this may affect how they answered this question

Interviewee A gave an interesting insight into patient expectations

“There a minority of patients who would not be happy, and sometimes it's down to the clinician and sometimes it's down to the patient's level of expectation ”

Interviewee B

“Some people are difficult when they don't know you and you don't know them, if they're nervous they can come across rude but when they get used to you most people change a bit ”

“Some people might have an attitude that you’re out to get their money or they may be irate with you because of a problem they created ”

“You can get people that if they feel they are having pain after an extraction that it is somehow you’re fault, even though you know you did the best you could and you can’t predict things like that happening ”

They reason that experienced dentists may feel that it is rare to have difficulty in dealing with patients is that their experience and training allows them to meet patients expectations more easily than those recently qualified. Younger dentists may feel increased stress if they believe that there will be any difficulties in treating a patient

The question in this section that evoked the strongest response in terms of causing stress for the respondents related to the possibility of them making mistakes in their work. 25% of respondents said that this is stressful some of the time. What really accentuated the way young dentists feel about this was that 50% said it was often a cause of stress for them. Furthermore 17% said it was very often a source of stress. The reason for this may closely relate to the high expectations patients have for a high standard of care. It is possible that sometimes their expectations are unrealistic which places an undue strain on the dental practitioner. Baldwin et al (1999) supported this when they found that young dentists said that patients often had excessive expectations and this was causing stress. It is feasible that this extra pressure could raise recently qualified dentists fears of making mistakes during the treatment of a patient. Further research is needed to determine this. Dentists now also have to give consideration to the possibility of patients taking legal action against them if there is a mistake made in their treatment

Interviewee C said that he had not received negative feedback on his work but acknowledged that if he did it would definitely cause stress.

“Certainly if there was a situation like that that arose I would find it very stressful because you would be it into medico legal matters and the patient can take certain recourses.”

Ayers et al (2008) showed that when dentists have to maintain concentration of long periods of time it is stressful. It can be inferred that the reason they have to remain so focussed is to avoid mistakes and maintain a high standard of work. Sutherland and Cooper (1990) articulated that the fear of making a mistake was the primary cause of stress in their work. From the response in this survey it would appear that this is still a prevalent stressor in dentistry. There are also instances where dentists will find themselves dealing with difficult patients. Again this seemed to be the cause of problems for some respondents. 42% claimed it was often a stressor and 25% said it was sometimes a problem. It is possible that more experienced dentists have more refined skills in dealing with patients that are difficult and younger dentists may feel that in the beginning of their careers this can be difficult for them.

Interviewee B gave further details regarding the challenges facing younger dentists in this regard:

“The younger you are, the more inexperienced you are people are quicker to point out any negative outcomes to you because they are more suspicious of you, they perceive that you are not as good as a more experienced or older dentist.”

Interviewee D: She highlighted that as she gained more experience it became easier to deal with demands of patients and her confidence grew, she did however mention that

there is now an increased threat of legal action being taken in the event of problems occurring

This next question explores an issue that is similar to when the survey sought to gather responses on society's expectation for a high standard of medical care. When asked if they felt as though they were adequately prepared to meet the needs of patients, 50% felt as though sometimes this caused stress, with 33% said it rarely resulted in stress. The final issue to be explored in this section is whether or not newly qualified dentists let feelings or emotions interfere with the care of patients. This is illustrated in figure 5.

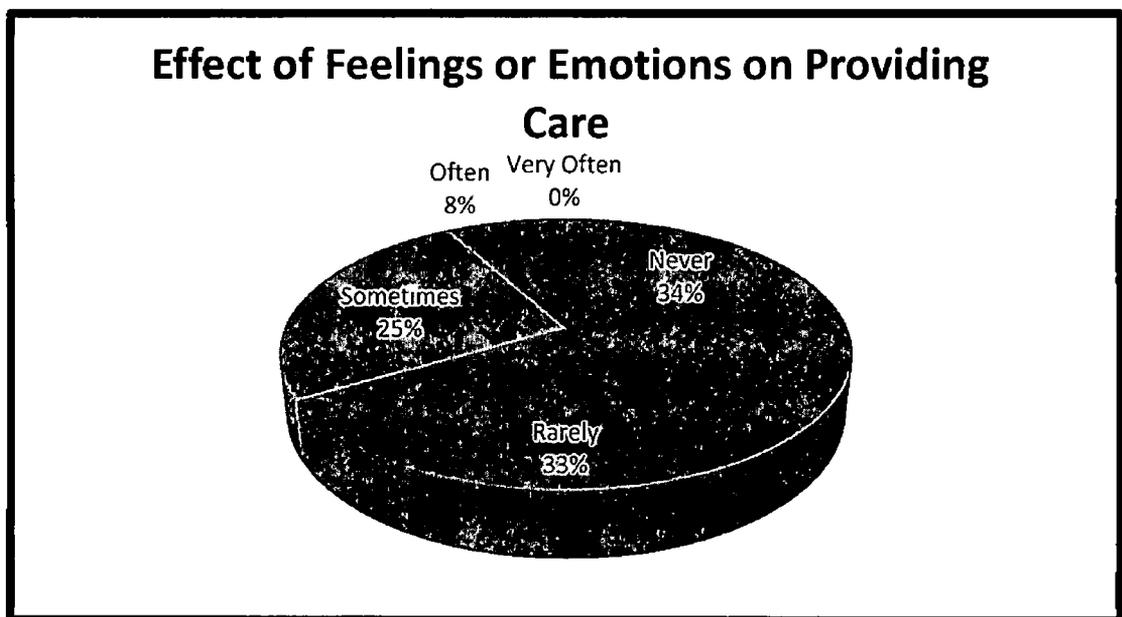


Figure 5 –Effects of Feelings or Emotions on Patient Care

It also appears however that experienced dentists feel as though funding restriction can make it more difficult to treat patients the way they want to, and this places strain in the dentist.

Interviewee C

“The bottom line is that you want to do your absolute best for the patient and the patient cannot afford the treatment or the medical card is not paying for the treatment they really need and sometimes you find yourself in difficult situations like that That can be quite stressful I have to admit”

It is possible that as newly qualified dentists become more experienced they may find their feelings about the ways they treat patients causing them more stress

Professional Recognition

Another stressor that is well documented in academic research is a perceived lack of respect from the general public This falls under the theme of professional recognition in this study Literature indicates that dentists have a yearning for higher levels of prestige to be associated with their chosen medical profession Shugars (1991) explored the area of intrinsic motivators in dentistry and recognition from patients There is a possible distinction between patient recognition and recognition from the general public however The survey results of this were somewhat varied 42% claim it rarely affects them but 33% say it is often a problem they experience 17% say it is sometimes a problem with the remainder never having this issue

Interviewee A

“The vast majority of patients tend to be happy with the work that’s delivered ”

However these dentists did go on to say that patients may not fully understand the skill level that dentists have

“The patients would not have a terribly well-defined view of the technical expertise you would have, but the main thing would be communication and the clinician’s ability to communicate before, during and after the delivery of care ”

When asked whether or not they feel as though they do not receive appropriate recognition from other health professionals the results were harder to assess Luzzi et al (2005) noted that dentists value highly being respected in their community Although perhaps Felton (1998) gave the most logical reason as to why dentists do not receive much feedback on their work Most of the work a dentist does is obviously not very visible to others in most circumstances It can even be said that most of the general public cannot pass comment on work of a high standard as they more than likely will not recognise it The survey shows even number of respondents claimed that never, rarely or sometimes did they feel as though this was a source of stress for them 16% say it is often a source of stress Finally 33% rated not receiving adequate feedback as stressful and furthermore 25% claimed it was rarely stressful It is possible that as the younger dentists continue to practice and improve their skills positive feedback from peers will have benefits It must also be remembered that the responses are anonymous making it impossible to determine whether males are more affected by the stressors than females or vice versa Further analysis of the subject group would be required to fully answer this

Conclusions

This study was undertaken to explore and evaluate the effects of stress on newly qualified dentists. The findings of this research have confirmed that newly qualified dentists are certainly exposed to significant stressors during the course of their work. The survey showed that recently qualified dentists experience many of the stressors present in the working lives of more experienced dentists. Although this research explored several different themes in the evaluation of stress and its effects it is evident that some themes are more prevalent in causing stress than others. For example the issue of managing time and having an excessive workload are definitely serious sources of stress for both newly qualified dentists and their more experienced colleagues. The literature highlighted this as the most serious stressor; both the survey and interviews in this study strengthened those findings.

There were other sources of stress that featured strongly as well, it is clear that the limited avenues for career development available to dentists can cause stress even after a short time. The findings revealed that after as little one to two years many dentists find that their work is getting tedious. Some dentists accept this and continue in general practice, whilst others decide to undergo more training to further expand their knowledge and improve their skills. Perhaps one of the most interesting findings was the pressure dentists feel when they try to keep up with new developments in their profession. It was clear from the interviews that new legislation has a major impact on how they run their practices and this can lead to increased levels of stress. It is often observed that changes in work practices have the potential to cause stress, especially when the change relates to legislation which has to be complied with. This places dentists, especially those who own practices in an uncompromising position. They have no choice but to adhere to new laws.

The newly qualified dentists responded that meeting society's demands for high quality medical care was often stressful. It appears that this is also the case for more experienced dentists. During the interviews it was made abundantly clear that the public health service presented serious limitations in providing the level of treatment that was sometimes required by patients. One dentist remarked that it was very stressful conveying the message that their request to perform a certain type of treatment had been denied. It must also be kept in mind that half of newly qualified dentists claimed that they suffered from stress because sometimes they were not paid enough. The issue of remuneration for work is highly subjective and different expectations surrounding pay can explain the variance in responses. In addition the interviews revealed that experienced dentists now have problems getting paid for their work, mainly due to the on-going economic difficulties the country is experiencing.

There is not a significant quantity of literature relating to stress and its effects on dentists. Much of the literature on health professionals relates to doctors or nurses. What this research does is add to the limited supply of literature to stress and its effects on newly qualified dentists. Indeed the search for literature on this showed that it has not been investigated thoroughly. This study has given an up to date account of the stress in this particular context. The interviews with the more experienced dentists give a clearer indication of how stress can develop over the course of their career. It has been identified that some stressors are constant and some others become less prevalent. This research has proven that newly qualified dentists are certainly exposed to considerable challenges, many of which do lead to stress. The extent to which they can cause stress varies, but nevertheless the cumulative effect of several minor stressors can potentially have as great an impact as one two or major stressors. Ultimately some stressors are intrinsic to dentistry, such as time and workload pressures. These will not be eradicated but they could be controlled more effectively.

There were some limitations of the study that would leave opportunities for further research. As the study took place in a relatively limited time frame it may be useful to conduct a study over a longer period to gain further insight into the topic. A cross-sectional study such as this looked at the phenomena of stress in a short period of time. A longitudinal study would offer the opportunity to observe stress and its causes over a greater period of time. Although given the fact that the interviews dealt with more experienced dentists also, this gave the study a something of a longitudinal perspective. The short time available also meant that the sample available for survey and interview was smaller than if more time was available.

Recommendations

Given the stressful nature of dentistry which has been documented in literature there are some possible interventions that could reduce the stress levels of newly qualified dentists, and subsequently reduce their stress levels as they gain more experience in their profession. It would be beneficial if dentistry students were given detailed information not only about the specific type of stressors they are likely to encounter, but the most effective techniques to deal with these also.

Time pressure and dealing with workloads feature consistently in literature findings, including the findings of this study. It is without doubt that many dentists will experience difficulty in managing time and dealing effectively with large workloads. When dentists are recently qualified they are not able to treat patients as quickly as more experienced dentists and this can be a stressor. A system where they are given a more gradual introduction to dentistry taking their lack of experience into account would considerably reduce the burden on them. Paying young dentists a salary as opposed to them being paid per patient may reduce the stress they initially experience.

It also emerged from the interview data that dentists who own their own practices may often have difficulties in dealing with the various facets of business ownership, for example dealing effectively with staff problems or financial aspects of business. In relation to the controlling of financial and human resource issues within their practices dentistry students may need more rigorous training in the fundamentals of successfully operating their own business. This could include the efficient delegation of tasks outside the boundaries of a dentist's specialist clinical skills, for example the ability to select suitable people to work as practice managers. This allows the dentist to concentrate on utilising their core skills as clinicians. Provided that students are given this type of training prior to their qualification as dentists the fundamental skills required to run a practice are in place before they are needed.

Trying to provide more career development possibilities is not an easy task. This proved to be a source of stress for some dentists who had spent around two years in practice. Dentistry by its nature is very specialised and this research uncovered that it can quickly become repetitive for some dentists which quickly leads to stress. Suggesting that every dentist pursues further training is not realistic, it may be better if young dentists who find that the challenging nature of their work has diminished attempt to concentrate on organising their work in such a way that variety is encouraged.

The research highlighted that newly qualified dentists can potentially experience stress in dealing with patients who cannot pay or do not want to pay. This can happen at from the beginning of their career and it would be logical to incorporate methods of dealing with this into their education program. Seemingly this problem has worsened in recent times and there is the potential for it to continue as the medical card system covers less treatment options. This could force patients to try and receive dental treatment they may not be able to pay for. Newly qualified dentists with limited experience in dealing with the public need to be prepared for this.

The fear of making mistakes rated highly as well in the survey responses. Younger dentists may also be fearful of the legal consequences associated with this. A mentoring initiative where they can consult with experienced dentists may ease the strain. One interviewee pointed out that unfortunately the vocational training programme that exists in the UK does not operate here in Ireland. This offered new graduates a more supervised introduction into the world of dentistry and a more supportive atmosphere.

There is considerable scope for future research in relating to stress and its effects on newly qualified dentists. In order to move beyond the limiting factors of this study a larger sample could be utilised to gather more data and explore the topic in greater detail. It would also be possible to further add detail by analysing the effect of stress on males and females to assess if there are any differences in this respect. It is also worth considering that more study could be done on those dentists who have been qualified for longer periods of time. A limitation of this study was the timeframe; a longitudinal study would greatly increase the volume of data available for analysis. It would make it possible to explore stress in dentistry for a longer time as their careers progress. Finally it must be remembered that this study took place in an Irish context, by studying the phenomena in an international context new and unprecedented trends may emerge.

Personal Reflection

Undertaking this dissertation has led to a far greater understanding of the various facets of a research project at Masters Degree level. It has been both challenging and thought provoking to choose a topic and explore it in sufficient detail so as to produce findings that are relevant in the context of academic research. This study has also highlighted the importance of strategic research and evaluation of academic literature related to this topic. The process of exploring seminal works in this topic has given me a clear picture of the standard that academic work is at; it also inspired my research whilst helping me to add to

existing literature I know feel confident that in the future I could undertake a more detailed study in more detail because of the fundamental concepts of research this study has provided me with

Bibliography

Antomou, A-S, G , Davidson, M J & Cooper C L, (2003), 'Occupational stress, job satisfaction and health state in male and female junior hospital doctors in Greece', *Journal of Managerial Psychology*, vol 18, no 6, pp 592-621

Arnold, J , Silvester, J , Patterson, F , Roberson, I , Cooper, C & Burnes, B (2005), *Work Psychology Understanding Human Behaviour in the Workplace*, England Pearson Education Limited

Ayers, K M S , Thomson, W M , Newton& Rich, J M (2008) 'Job stressors of New Zealand dentists and their coping strategies' *Occupational Medicine* vol 58, pp 275-281

Baldwin, P J, Dodd, M & Rennie, J S (1999) 'Young dentists - Work, wealth, health and happiness' *British Dental Journal* vol 186, no 1, pp 35

Cannon WB (1929) *Bodily changes in pain, hunger, fear and rage*, New York D Appleton & Co

Chandra, A and Sharma, B R , (2010) 'Predictors of Occupational Stress An Exploratory Study' *Indian Journal of Industrial Relations*, vol 46 (2), pp 300-312

Collis, J & Hussey, R (2009), *Business Research- A Practical Guide For Undergraduate and Postgraduate Students*, UK Palgrave Macmillan

Cooper, C, Watts, J, Baghioni, J & Kelly, M (1988) 'Occupational stress amongst general practice dentists ' *Journal of Occupational Psychology* [online] vol 61, pp 163-174

Cooper, C L (1983) 'Identifying Stressors at Work Recent Research Developments,' *Journal of Psychosomatic Research*, vol 27 (5) 369-76

Cooper, C L (1985) 'The Stress of Work An Overview', *Aviation, Space and Environmental Medicine*, Vol 56 (7) 627-32

Cooper, C L , (2009) 'Stress and the Global Recession *Stress & Health*', *Journal of the International Society for the Investigation of Stress*, Vol 25 (2), pp 127-127

Cooper, C L , and Payne, R (eds) (1988), *Causes, Coping and Consequences of Stress at Work*, England John Wiley & Sons Ltd

Cox, T (1978), *Stress*, London, Macmillan

DiMatteo, M R and Shugars, D A , (1993) 'Occupational stress, life stress and mental health among dentists' *Journal of Occupational & Organizational Psychology*, vol 66(2), pp 153-162

Doef, M V D and Maes, S (1999) 'The Job Demand Control (Support) Model and psychological well-being a review of 20 years of empirical research' *Work & Stress*, vol 13 (2), pp 87-114

Edwards, J R , Caplan, R D , & Harrison, R V (1998) '*Person-environment fit theory Conceptual foundations, empirical evidence, and directions for future research*' In C L Cooper (Ed), *Theories of organizational stress*, New York Oxford University Press pp 28-67

Felton J S,(1998) 'Burnout as a clinical entity - Its importance in health care workers', *Occupational Medicine*, vol 48, pp 237-250

Fevre, M L , Matheny, J & Kolt, G S , (2003) 'Eustress, distress, and interpretation in occupational stress' *Journal of Managerial Psychology*, vol 18(7), pp 726-744

Firth-Cozens J (1995), *Stress in doctors a longitudinal study Report for the Department of Health*, London R&D DIVISION

Firth-Cozens, J. & Payne, R. (1999), *Stress in Health Professionals*, Chichester: Wiley.

Foot, D. K. & Venne, R. (1990) 'Population, Pyramids and Promotional Prospects, *Canadian Public Policy*', vol.14 (4): 387-98.

French S.E, Lenton R., Walters V. & Eyles, J. (2000) 'An empirical evaluation of an expanded nursing stress scale', *Journal of Nursing Measurement*, vol. 8, 161–178.

Goh, Y, Sawang, S, & Oei, T. (2010) 'The Revised Transactional Model (RTM) of Occupational Stress and Coping: An Improved Process Approach', *Australian & New Zealand Journal of Organisational Psychology*, vol.3, 1, pp. 13-20.

Harrison, R.V. (1985) 'The Person Environment Fit Model and the Study of Job Stress', Beehr T and Bhagat, R.S, (Eds), R.S, *Human Stress and Cognition in Organisations*, Wiley, New York, pp. 23-55.

Heilbrun Jr, A.B & Freidberg, E.B. (1988) 'Type A Personality, Self-Control, And Vulnerability To Stress'. *Journal of Personality Assessment* [online]. vol. 53 pp.420-433.

Herzberg, J, (2000). 'Can Doctors Self Manage Stress?' *Hospital Medicine*, Vol.61, pp.272-274.

Howard, J.H., Cunningham, D.A and Rechnitzer, P.A. & Goode, R.C. (1976) 'Stress on the job and career of a dentist'. *Journal of the American Dental Association*, vol.93, pp.630-636

Jerusalem, M, (1993) 'Personal Resources, Environmental Constraints and Adaptation Processes: The Predictive power of a Theoretical Stress Model, *Personality and Individual Differences*, vol.14, pp. 15-24.

Karasek, R.A. (1979) 'Job Demands, Job Decision Latitude and Mental Strain: Implications for Job Redesign', *Administrative Science Quarterly*, Vol.24

Kuhn, T.S. (1962) 'The structure of Scientific Revolutions', Chicago, Il: University of Chicago Press.

Kumari, K & Sharma, S (1990) 'Social Support, Organisational Role Stress and Well Being: a study of medicos', *Psychological Studies*, Vol. 35, No. 3, pp. 163-169.

Lazarus, R.S (1990) 'Theory-Based Stress Management', *Psychological Inquiry*, vol.1 No.1, pp.3-13.

Lazarus (1966) 'Psychological Stress and the Coping Process', New York, McGraw-Hill

Linn, L.S, Yager, J., Cope, D., and Leake, B. (1985) 'Health Status, job satisfaction, and life satisfaction among academic and clinical faculty' *Journal of the American Medical Association*.Vol.254, pp.2775-2782

Lokman, P., Gabriel Y., and Nicolson, P (2011) 'Hospital doctors' anxieties at work'. *International Journal of Organizational Analysis*, Vol.19 (1), pp. 29-48.

Luzzi, L., Spencer, A.J, Jones, K. & Teusner, D. (2005) 'Job Satisfaction of Registered Dental Practitioners', *Australian Dental Journal*, vol.50, pp.179-185.

Maylor, H., & Blackmon, K. (2005), *Researching Business and Management*, England: Palgrave Macmillan.

McCann, L., Hughes, C.M., Adair, C.G, & Cardwell, C. (2009) 'Assessing job satisfaction and stress among pharmacists in Northern Ireland'. *Pharm World Sci*. vol.31, pp.188 -194.

Merriam, S.B, 1988. *Case Study Research in Education: A Qualitative Approach*. 1st ed. San Francisco: Jossey-Bass.

Moller A.T, Spangenberg, J.J (1996) 'Stress and coping amongst South African dentists', *J Dent Assoc Afr*, Vol. 51:347-357.

Myers M L & Myers L B (2004) 'It's difficult being a dentist', stress and health in the general dental practitioner' *British Dental Journal* [online] vol 197, pp 89-93

Palliser, CM , Firth, H M , Feyer, A M & Palm S M(2005), 'Musculoskeletal discomfort and work-related stress in New Zealand dentists', *Work & Stress*, 19, 4, pp 351-359, Psychology and Behavioral Sciences Collection, EBSCOhost, viewed 4 July 2012

Peisah, C L , (2009) 'Secrets to psychological success Why older doctors might have lower psychological distress and burnout than younger doctors' *Aging & Mental Health*, vol 13(2), pp 300-307

Quinlan, C (2011), *Business Research Methods*, Cengage Learning, United Kingdom

Remenyi, D , Williams, B , Money, A & Swartz, E (2005) '*Doing Research in Business and Management- An Introduction to Process and Method*', Great Britain SAGE Publications Ltd

Saunders, M , Lewis, P & Thornhill, A (2007), *Research Methods for Business Students*, England Pearson Education Limited

Saunders, M , Lewis, P , & Thornhill, A (2009), *Research Methods for Business Students*, England Pearson Education Ltd

Selye H (1956) *The stress of life*, New York McGraw-Hill

Shugars, D A, Hays, R D, DiMatteo, R M and Cretin, S (1991) 'Development of an Instrument to Measure Job Satisfaction among Dentists', *Medical Care*, Vol 29, No 8, pp 728-744

Stordeur S , D'Hoore W and Vandenberghe C (2001) 'Leadership, organisational stress and emotional exhaustion among hospital nursing staff' *Journal of Advanced Nursing*, vol 35, 533-542

Sutherland, V J & Cooper, C L (1990), *Understanding Stress A Physiological Perspective for Health Professionals*, Great Britain St Edmundsbury Press

Sutherland, V J & Cooper, C L (2000), *Strategic Stress Management An Organisational Approach*, London Macmillan Press

Tashakkori, A & Teddlie, C (eds) (2003) *Handbook of Mixed Methods in Social and Behavioural Research*, Thousand Oaks, CA, Sage

Wall, T, & Jackson, P (1996) 'The demands-control model of job strain A more specific test', *Journal of Occupational & Organizational Psychology*, vol 69, 2, pp 153-166, Business Source Complete, EBSCOhost, viewed 12 August 2012

Wolfgang, A P (1988), 'The Health Professionals Stress Inventory' *Psychological Reports*, vol 62, pp 220-222

Appendix

Questionnaire

Stress is defined as the “non-specific response of the body to any demand for change”

This research aims to understand the effects of stress on newly qualified dentists. There are questions outlined below that have each been carefully chosen to evaluate the effects of stress and it is important that each question is answered.

All responses collected in the course of this research will be treated anonymously and no references to you will be made in the final analysis of this research. **This questionnaire should take no longer than 5 minutes to complete.**

Please indicate the extent to which for each of the following situations you found them to be stressful.

0 = Never

1 = Rarely

2 = Sometimes

3 = Often

4 = Very Often

Are you male or female?

Male

Female

Which of the following age groups are you in?

18-24

25-30

31+

	Section A	Never	Rarely	Sometimes	Often	Very Often
1	Having so much work to do that everything cannot be done well	0	1	2	3	4
2	Experiencing conflict with supervisors and/or administrators	0	1	2	3	4
3	Not receiving the respect or recognition that you deserve from the general public	0	1	2	3	4
4	Not having opportunities to share feelings and experiences with colleagues	0	1	2	3	4
5	Experiencing conflicts with co workers	0	1	2	3	4
6	Having job duties which conflict with family responsibilities	0	1	2	3	4
7	Allowing personal feelings/emotions to interfere with the care of patients	0	1	2	3	4
8	Keeping up with new developments in order to maintain professional competence	0	1	2	3	4
9	Feeling that opportunities for advancement on the job are poor	0	1	2	3	4

	Section B	Never	Rarely	Sometimes	Often	Very Often
10	Trying to meet society's expectations for high quality medical care	0	1	2	3	4
11	Dealing with "difficult" patients	0	1	2	3	4
12	Not receiving adequate feedback on your job performance	0	1	2	3	4
13	Not having enough staff to adequately provide necessary job services	0	1	2	3	4
14	Having non-health professionals determine the way you must practice your profession	0	1	2	3	4
15	Being interrupted by phone calls or people while performing job duties	0	1	2	3	4
16	Not being allowed to participate in making decisions about your job	0	1	2	3	4
17	Not being challenged by your job	0	1	2	3	4
18	Feeling that you are inadequately paid	0	1	2	3	4
19	Not being able to use your abilities to the fullest extent of the job	0	1	2	3	4
20	Fearing that a mistake will be made in the treating of a patient	0	1	2	3	4
21	Not being recognised or accepted as a true health professional by other health professionals	0	1	2	3	4
22	Being inadequately prepared to meet the needs of patients	0	1	2	3	4