Investigating the employee perspective: predictors of job stress and satisfaction among nurses and healthcare assistants during COVID-19

Maria Ramon

Master of Arts in Human Resource Management

National College of Ireland

'Submitted to the National College of Ireland, May 2021'

Abstract

Occupational stress occurs when an employee becomes unable to manage work demands due to insufficient training, lack of resources or inadequate staffing. Healthcare workers in particular are at risk of suffering from work related stress. Certain job characteristics may contribute to work-related stress, while factors such as job satisfaction may serve as protective factors. Environmental factors, such as the COVID-19 pandemic may also have a negative impact on perceived levels of anxiety among healthcare staff. This study aims to investigate the predictors of job stress and job satisfaction among healthcare professionals in Ireland and examine the prevalence of COVID-19 related anxiety.

A quantitative study with a cross-sectional design was preformed by means of an on online survey. Results showed that factors such as inadequate staffing levels, increased workload, low pay rates and difficult relationships with colleagues and managers were significantly associated with higher job stress scores. COVID-19 resulted in particularly challenging conditions for frontline workers and over a third of healthcare workers surveyed were affected by COVID-19 related anxiety. Nevertheless, despite the challenging working conditions, the majority of participants reported high levels of job satisfaction.

Submission of Thesis and Dissertation

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

Name: Maria Ramon

Student Number: 18189636

Degree for which thesis is submitted: MA in Human Resource Management (Part-Time)

Title of Thesis: Investigating the employee perspective: predictors of job stress and satisfaction among nurses and healthcare assistants during COVID-19

Date: 05/05/2021

Material submitted for award

A. I declare that this work submitted has been composed by myself. ☐

B. I declare that all verbatim extracts contained in the thesis have been distinguished by quotation marks and the sources of information specifically acknowledged. ☐

C. I agree to my thesis being deposited in the NCI Library online open access repository NORMA. ☐

D. ***Either*** *I declare that no material contained in the thesis has been used in any other submission for an academic award.
Or *I declare that the following material contained in the thesis formed part of a submission for the award of

_____
(State the award and the awarding body and list the material below) ☐

Signed: Maria Ramon
Date: 05/05/2021

Acknowledgements

There are many people who I would like to thank for supporting me throughout completing this dissertation. Without their help I would not have been able to complete this dissertation.

First of all, I would like to thank those who participated in the survey. This is a particularly challenging time for healthcare workers and I greatly appreciate them taking time out of their day to assist me in this research.

Secondly, I would like to extend my gratitude to my supervisor Dr Conor Nolan for guiding me through this process. He has been extremely helpful and approachable and has given me excellent feedback from start to finish.

Finally, I would like to thank my family, friends and colleagues especially my Mom, Dad, my amazing husband Marco and my friend Danielle who embarked on this journey with me. They have supported, motivated and kept me sane throughout the past 2 years of completing this masters.

Table of Contents

List of Figures

List of Tables

List of Appendices

- Questionnaire used for data collection
- Graph showing the linear relationship between job satisfaction and job stress

List of abbreviations

COVID-19 – Corona Virus Disease 2019

HCA – Healthcare Assistant

COR - Conservation of Resources

JDC - Job Demands–Control–Support Model of Work Design

HSA – Health and Safety Authority

HSE – Health Service Executive

EAP – Employee Assistance Programme

ESRI- Economic and Social Research Institute

WHO – World Health Organisation

Chapter 1 - Introduction

The cognitive appraisal theory defines stress as an imbalance between the demands placed on an individual and his/her resources to cope with those demands (Lazarus & Folkman 1984). According to this theory, individuals experience stress differently based on their interpretation of an event and the consequences of specific thinking patterns, called appraisals (Lazarus, 1991). Individuals may become stressed if they lack the resources necessary to cope with workplace demands. Coping resources include internal factors such as self-esteem, control beliefs, denial and social support which reflect the individual's appraisal of a certain situation and the perceived level of stress (Terry, 1991). When looking at stress in the Irish workforce, research carried out by the Mater Private hospital showed that 68% of Irish employees were experiencing some form of stress (Mater Private Healthcare Group, 2020). Furthermore, it was estimated that stress, anxiety and depression represented 18% of work-related illnesses in Ireland between 2003 and 2013 (Russel, Maitre, Watson, 2016).

Healthcare workers experience higher levels of occupational stress due to higher work intensity, more frequent interruptions and greater emotional demands when compared to other professions (Parent-Thirion, *et al*., 2011). Additionally, social pressures such as bullying, dealing with aggressive patients or family members contribute to occupational psychosocial stressors, which may result in stress reactions and health complications for clinical staff (Pisljar, van der Lippe & den Dulk, 2011). Although stress itself is not an illness, chronic stress can lead to burnout, chronic fatigue, cardiovascular disease and metal disorders (Stansfeld & Candy, 2006). This has a direct impact on patient care as chronic stress and burnout can lead to increased medical errors and higher levels of absenteeism (Donnelly, 2012).

Another issue affecting stress levels in nurses and healthcare assistants (HCAs) is staff shortages (Donnelly, 2014; Lapane & Hughes, 2007). In 2016, there were on average, 3.6 physicians per 1000 people and 8.6 nurses per 1000 people in the European Union (Michel & Ecarnot, 2020). This shortage has several interlinked causes, including an ageing workforce, difficult working conditions, lack of career development opportunities and insufficient social recognition. On the other hand, there is an increased demand for care with the growing number of elderly patients with chronic morbidities and disabilities often requiring long-term care (Machon *et al.,* 2020). Therefore, while the public demand for health services is growing, the supply of healthcare staff is declining. This leaves existing healthcare workers with greater workloads and fewer resources to deliver the same standard of care for their patients,

resulting in higher levels of stress, turnover and absenteeism and low morale (Donnelly, 2012; Chang *et al.,* 2005). It should therefore be a priority to find innovative ways to support nurses experiencing job stress and attract more nurses into the workforce.

One way of reducing work-related stress could be through enhancing job satisfaction among healthcare staff. Ramirez *et al* (1996) found that job satisfaction had a protective effect against stress in clinical staff. Factors influencing job satisfaction included higher salaries, opportunities for promotion and training for HCAs and nurses (Lapane & Hughes 2007; Lephalala, Ehlers & Oosthuizen, 2008) and having good relationships with colleagues and managers (Jia & Shoham, 2012; Watson, 2009). Moreover, having positive relationships with co-workers was found to enhance employee engagement (Wong, Spence Laschinger, & Cummings, 2010), while support from management can trigger intrinsic motivators which improve satisfaction at work (Maslow, 1970).

In Ireland, shortage of healthcare staff is a long standing issue and has been reported as one of the main causes of stress among nursing staff (Donnelly, 2014). The COVID-19 pandemic has therefore been a particularly challenging period as hospitals were overwhelmed with positive cases and healthcare workers became unavailable for work after contracting the virus (O'Halloran, 2020). The coronavirus has also impacted nursing homes and residential homes with 257 clusters identified across the country (Kennelly, *et al.*, 2020). Healthcare workers have also been disproportionally affected by the virus with 32% of positive cases being healthcare staff. Research conducted during the severe acute respiratory syndrome (SARS) outbreak shows that healthcare workers are more likely to develop anxiety, depression and stress during these times (Wu, Chan & Ma, 2005).

It is clear that work-related stress is a common issue for healthcare professionals, most studies to date have focused on healthcare staff working predominantly in hospital settings. However, HCAs mainly work in nursing home settings (Cooper et al., 2016) and may therefore be under represented in the current literature. When examining different healthcare facilities, it seems that the healthcare sector overall is facing major issues with insufficient staffing levels leading to increased turnover and absenteeism (Donnelly, 2012). Which in turn affects job stress and job satisfaction in existing staff and ultimately impacts the quality of care delivered to patients (Berland, Natvig & Gundersen, 2008; Puteri & Syaebani, 2018). As a result, managers are faced with increasing challenges to attract and retain staff in this sector. This study aims to investigate the predictors of job stress and job satisfaction among

healthcare professionals in Ireland and examine the prevalence of COVID-19 related anxiety. A cross sectional study will be conducted using the quantitative method by means of a survey. Data will be collected on participant demographics, 17 specific sources of job satisfaction and 25 specific sources of job stress (Ramirez *et al.,* 1996). COVID-19 related stress and anxiety will also be measured using the Stress and Anxiety to Viral Epidemics-9 (SAVE-9) questionnaire (Chung et al., 2020). The purpose of this survey will be to answer the following research questions:

1. What is the relationship between demographic factors (such as age, and years of work experience) on perceived stress in healthcare professionals?
2. Is there an association between job characteristics (such as job title, relationships with colleagues and supervisors and staffing levels) and perceived stress in healthcare professionals?
3. Is there a relationship between demographic factors and job satisfaction in healthcare professionals?
4. Is there a relationship between job characteristics and job satisfaction in healthcare professionals?
5. Is there a difference between perceived COVID-19 stress and anxiety reported by nurses and HCAs

These questions will help clarify whether or not factors such as age, length of service, work load and staffing levels have an impact on job stress and anxiety experienced by nurses and HCAs during COVID-19. Findings from the survey will then be discussed and used to suggest interventions for occupational stress based on the current literature. To conclude, key points will be summarised and opportunities for further research will be identified.

Chapter 2 - Literature review

2.1 Definitions of stress

Throughout the years, there have been various definitions proposed for stress. However, despite the multiple efforts, there is still no generally accepted definition of stress. Researchers have approached the general topic of stress from different angles, for example, some clinical research has described stress as a consequence of environmental factors which may have a severe or low impact depending on the individual (Dohrenwend, 2000; Monroe & Roberts, 1990). Alternatively, basic research has defined stress as a psychobiological response of the body to varying external conditions, for example the fight or flight response (Weiner 1992). General consensus supports that environmental conditions which generate stress are called stressors. Although these approaches have helped to advance understanding of stress, neither provide an account of how organisms adapt to particular circumstances that change with time. Further studies have shown that stress is by nature a constantly changing and interactive notion (Lazarus & Folkman 1984; Weiner 1992). The environment, the characteristics of the individual, and the moment in time are all fundamental aspects of stress. It has therefore been proposed that stress should be referred to as a continuing interaction between the individual and the environment (Weiner, 1992) or as the progressive interactions between the individual and the environment over time (Lazarus & Folkman 1984). The cognitive appraisal theory defines stress as an imbalance between the demands placed on an individual and his/her resources to cope with those demands (Lazarus & Folkman 1984). According to this theory, individuals experience stress differently based on their interpretation of an event and the consequences of specific thinking patterns, called appraisals (Lazarus, 1991). This perspective allows researchers to examine stress in terms of the complex processes of extrinsic challenges and interpretations of those challenges, coping mechanisms and interpretations of coping resources and the interactions between these elements over a period of time (Gunnar & Quevedo 2007). These definitions have led to the development of the Conservation of Resources (COR) (Hobfall, 1989) and the Job Demands–Control–Support Model of Work Design (JDC) (Karasek, 1979) theories of stress.

2.2 Work-related stress

In the workplace, stress occurs when an employee becomes unable to manage work demands due to insufficient training, lack of resources or inadequate staffing (Puteri, & Syaebani, 2018). Severe work stress may have adverse effects on an individual's mental and physical health The physical and psychological effects of work-related stress have been extensively investigated in recent years. Stress-related disorders include a wide cluster of psychological conditions, including depression and anxiety, chronic fatigue, maladaptive behaviours and cognitive impairment (Sauter, Murphy, & Hurrell, 1990). Workplace stressors include role ambiguity, role conflict, work overload perceptions, lack of control and interpersonal conflict with co-workers (Narayanan, Menon & Spector, 1999). However certain factors such as job variety, autonomy and positive relationships with staff may protect employees against work-related stress and enhance overall job satisfaction (Ramirez *et al.*, 1996). Various theories of stress were established to examine the relationships between stressors and protective factors against workplace stress.

2.3 Theories of stress

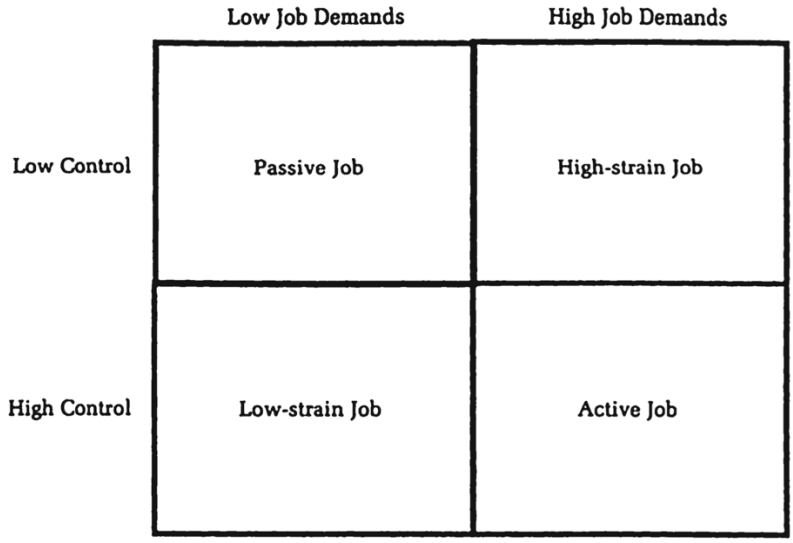
The COR theory was developed by Steven Hobfoll (1989) and explores the connection between the individual and the environment and the level of interaction between pressures in the environment and the individual's ability to cope with those pressures. The underlying principal of COR is that people try hard to acquire, preserve and nurture things that they value, they surround themselves by and accumulate resources to help them cope better with life's demands and challenges. According to Hobfall, resources are things that positively contribute to an individual's well-being and can either be internal or external in nature. Internal or personal resources include personal values and personality characteristics such as sense of achievement, optimism and self-esteem. In a work environment, external resources include the level of autonomy one has in one's job, receiving positive feedback on performance and performance-based rewards (Hakanen, Perhoniemi & Toppinen-Tanner, 2008). Supportive colleagues and the level of organisational support available can also reduce stress levels and burnout and enhance employees' overall well-being (Halbesleben, 2006). Two further principles of this theory are resource spirals and resource caravans. Resource spirals is the concept that, when individuals lack the resources to deal with stressful experiences, they become vulnerable and loss generates further loss of resources (Hobfoll,

2001). Conversely, acquiring resources expands the resource pool, making it possible to gain further resources. For example, high employability decreases the risk of unemployment and increases the likelihood of career progression with further opportunities for growth and development, which enhance employee engagement (Salanova, *et al*., 2017). The idea of resource caravans proposes that resources can accumulate and develop from each other. For instance, if an individual's self-esteem is reinforced by adequate job performance, they are likely to be more optimistic regarding their future performance. Xanthopoulou *et al*. (2009) demonstrated the application of the COR theory in a two-wave longitudinal investigation among employees in an electrical engineering company in the Netherlands. They found that work engagement increased in employees with higher levels of resources such as self-efficacy, self-esteem, and optimism, their study also illustrated the notion of spirals in relation to employee engagement.

Another theory worth mentioning is the JDC theory of stress, which was initially developed by Karasek in 1979. He suggested that job demands or pressures alone are not significant enough to have a major effect on stress levels, instead the amount of pressure that individuals experience will be driven by the level of control they have over those demands. The relationship between control and demands is illustrated in Figure 1. There are however, several unresolved issues with this model. One is whether or not there is any interaction between the effects of demands and control, and the second issue is whether the control factor is objective or subjective in nature. Studies to date have mainly focused on workers' perceptions of control rather than determining objective measures of control. There is also controversy about the universal applicability of this theory to different cultures. Although some studies have found a moderate influence of perceived job control on the correlation between job demands and psychological strain (Beehr *et al*., 2001), a recent study on Malaysian technical workers found that self-efficacy impacted stress levels rather than job control (Panatik, O'Driscoll & Anderson, 2011). Therefore, it is possible that this model cannot be generalised to collectivist cultures. The theory was further revised by Karasek and Theorell in 1990 to include social support as a factor that influences occupational stress. They proposed that the positive effects of control can be reinforced by receiving social support from colleagues and supervisors. Although there is substantial evidence that support plays a role in reducing occupational stress (Cooper *et al*., 2001), there is some debate over whether the impact is direct or indirect. There is also evidence of a three-way interaction between

demands, control and social support (Daniels *et al*., 2008). Control and support were found to reduce strain and improve wellbeing by acting as coping mechanisms in dealing with stressful situations. However, other research reported mixed results of the JDC model due to issues with measuring perceived control and issues around the effects of social support and whether the person wishes to receive any support at all (Wall *et al*., 1996). However, despite the various controversies around the JDC model, it has numerous practical applications for enhancing wellbeing and reducing the impact of stressors at work.

Figure 1 The Job Demands–Control–Support Model of Work Design



2.4 Work-related stress and burnout

Surveys carried out on workers in Europe and North America have established that occupational stress is a major contributor to ill-health, absenteeism, and early retirement, as well as being a health and safety hazard. Data collected from the Labour Force Surveys of 1990 and 1995 in England and Wales demonstrated that stress and stress-related conditions came in second place as a major cause of ailment, after musculo-skeletal disorders (Jones *et al*., 1998). During the time, this resulted in approximately 6.5 million working days lost to industry and commercial enterprises each year. This was equivocal to a financial loss of around £3.7-3.8 billion to British society, its industries and its citizens. A similar survey was carried out in Ireland between 2010 and 2015 (Miley, 2018). The survey found that the number of workers experiencing stress in 2015 increased by 8 per cent from 2010 figures. Irish workers ranked the level of emotional demands as the strongest predictor of work-

related stress, particularly in the Hospitality and Health sectors. Time pressure, bullying and harassment and being under-rewarded in relation to work effort also ranked highly as predictors of job stress (Russell *et al*., 2019). Work-related stress has become a global phenomenon, which has resulted in legal directives in many countries for employers to address this issue.

If left unmanaged, chronic work related stress can develop into 'burnout'. Burnout was first investigated in healthcare workers (Maslach, 1982), and was said to be associated with emotional exhaustion, depersonalisation and diminished sense of achievement in professionals who work with people. Controlling one's emotions and expression of one's emotions are thought to be the key aspects of these professions. Constant interaction with patients, clients or children requires empathy and emotional involvement which many people begin to struggle with over time. The COR theory suggests that burnout occurs when existing resources are lost, not sufficient to meet demands, or do not provide the anticipated returns (Hobfoll, 1989). Demands in the workplace include, stressful events, conflicts and role ambiguity and heavy workloads. Resources include social support from colleagues or supervisors, taking part in decision making, and autonomy (Burke & Richardsen, 1993). According to Karasek (1979), autonomy is particularly important for reducing employee stress. He found that employees who had high job demands with little control of decision making were more likely to be nervous, anxious, exhausted and have trouble sleeping. Whereas those who had high demands and more control were less likely to be stressed. For many employees, the main decision is to establish the amount of resources they must invest to satisfy the demands while protecting themselves from further depleting their resources. Strain occurs when employees think to have insufficient emotional resources to cope with the interpersonal stressors (Hobfoll, 1989; Maslach, 1982).

The characteristics of burnout include, low energy levels or exhaustion, being mentally distant form one's job, or experiencing negative emotions or cynicism towards one's job (WHO, 2019). In healthcare workers, these conditions may result in reduced work performance and have an adverse effect on patient safety (Berland, Natvig & Gundersen, 2008). Burnout affects both individuals and organisations, contributing to absenteeism and turnover which may decrease the quality of care delivered to patients. Among other healthcare professionals, nurses in particular were found to be the most susceptible to burnout (Rosales, Labrague & Rosales, 2012).

2.5 Job satisfaction and work-related stress in healthcare workers

Job satisfaction is essential for preserving the workforce of any organisation. Lack of job satisfaction is associated with high employee turnover, stress and burnout (Lephalala, Ehlers, & Oosthuizen, 2008). According to Herzberg's theory of motivation, intrinsic and extrinsic job rewards can influence employees' job satisfaction. Intrinsic factors refer to inherent job characteristics such as autonomy, variety and level of responsibility, while extrinsic factors include salary and benefits such as pension and health insurance (Chaudhury & Banerjee 2004). Job satisfaction can give a good insight on employee well-being, physiological health and it can also be an indicator of organisational functioning (Bhatnagar & Srivastava, 2012).

The relationship between job stress and job satisfaction in healthcare staff has been well established in the literature. Factors such as adequate financial compensation, receiving time in lieu for overtime hours and good relationships with patients, families and other staff members can help to offset the negative effects of work-related stress (Grunfeld *et al.* 2004; Ogresta *et al*., 2008; Ramirez *et al.*, 1996; Salam *et al.*, 2014). However, the level of care and concern that nurses and HCAs show for their patients often goes beyond financial compensation and the causes of stress are often intrinsic to the job (Rosales, Labrague & Rosales, 2012). For example, having to comfort bereaved parents in paediatric units or provide terminal care to patients with life threatening diseases after developing a relationship with them over many months. Over time, distressing patient situations may lead compassion fatigue in healthcare staff (Aslan, Erci, & Pekince, 2021). Other stressors include tensions at home and organisational factors such as frustration with one's manager or colleagues.

Studies found that having good relationships with colleagues and managers was associated with increased job satisfaction and lower job stress (Ramirez *et al*., 1996; Grunfeld *et al*., 2004). Having good relationships with co-workers in particular may provide employees with emotional and instrumental support as they have a comprehension of the internal working environment (Jia & Shoham, 2012). Furthermore, positive relationships with co-workers were found to improve communication and collaboration, leading to enhanced decision-making (Heath, Johanson & Blake, 2004). A study by Wong, Spence Laschinger, & Cummings, 2010 also suggested that positive relationships with peers are stronger drivers of work engagement than supervisory relationships.

Another stressor for healthcare workers is inadequate staffing levels. Previous studies found that staff shortages were contributing to burnout and exhaustion in nursing staff and

HCAs (Donnelly, 2012; Donnelly, 2014; Lapane & Hughes, 2007). According to Donnelly (2012), staff shortages coincided with a 34% increase in absenteeism due to stress among nurses, which has resulted in an increased workload for remaining staff as they are expected to deliver the same standards of care and meet patient demands with less resources. According to McVicar (2003), the main causes of work related stress in healthcare organisations include poor organisation of work, such as work load and a narrow time frame to examine patients, leadership style, professional conflict, emotional cost of caring together with lack of reward and shift work. However, the perception of stress varies from one individual to another, therefore researchers can never be too confident or conclusive regarding the sources of stress.

Individual characteristics such as personality, personal experiences, emotional maturity, age, sex, nationality (Al-Omar, 2003; Salam *et al*., 2014) family status, socio-economic status and years of employment can all impact on how an individual will perceive and react to stress (Mészáros *et al.*, 2013). For example, Salam *et al*. (2014) found that younger staff reported higher levels of stress than older staff, and older, more experienced staff had higher levels of job satisfaction. Research also suggests that there is a relationship between gender, job stress and job satisfaction in healthcare professionals, however the evidence is conflicting. Cooper, Rout and Faragher (1989) found that female general practitioners had higher levels of job satisfaction and positive mental well-being in comparison to their male counterparts. On the other hand, Taylor (2012) reported higher levels of job stress in female healthcare workers due to work-life balance and additional demands of childcare and domestic responsibilities. Demographic factors, along with the level of job satisfaction and autonomy one has in work-related decision making may influence the extent to which he/she is affected by occupational stress.

A cross sectional study examining the mental health of hospital consultants found that, out of the 882 respondents, 27 percent had symptoms of psychiatric morbidity (Ramirez *et al.*, 1996). The questionnaire measured burnout, job stress, job satisfaction and collected data on the demographics of the participants. Job satisfaction was found to protect consultants' mental health against job stress. While job stressors such as feeling overloaded at work, being poorly managed and poorly resourced and having to deal with patients' suffering were related to burnout and psychiatric morbidity. Furthermore, participant demographics, such as being single and aged 55 years or less were found to be independent

risk factors for burnout. This study had a large and randomly selected sample size, however, as with any cross sectional design study, we cannot establish a cause and effect relationship between these variables.

Similarly to Ramirez *et al*., Grunfeld *et al*. (2004) examined the effects of job stress and job satisfaction in cancer care workers, however they used qualitative and quantitative methods to allow for a greater depth of study. They found that work load and inadequate staffing levels are a major source of job stress in cancer treatment facilities, which is consistent with other studies (Salam *et al.,* 2014; Ramirez *et al.,* 1996). Interestingly, patient suffering did not emerge as a significant contributor to job stress. In fact, helping patients and families was a unanimous source of job satisfaction. Findings of this study suggest that cancer care units could benefit from system changes to alleviate job stress due to heavy workloads and improved recruitment and retention strategies for new trainees in systematic therapy.

A number of studies have investigated the prevalence of occupational stress specifically in nursing staff within a hospital setting. Research carried out by the General University Hospital of Murcia, Spain (Carrillo-García *et al*., 2018) evaluated work-related stress in nurses according to the demand-control-support model. They found that intense work load, low decision making capacity, the requirement of multitasking and lack of social support from superiors contributed to the levels of stress in nurses. Furthermore, a study of Taiwanese hospital workers (Chou, Li & Hu, 2014) found that nurses had the highest levels of burnout compared to other healthcare workers, which is consistent with findings from other studies (Rosales, Labrague & Rosales, 2012; Ho, Chang & Tsao, 2010). The main causes of stress were overcommitment and lack of social support, younger healthcare professionals also reported higher levels of stress. These results should be interpreted with caution however, as they may not be generalisable as all participants were recruited from a single regional hospital.

The type of healthcare facility that nurses work in may also impact their stress levels. When comparing nurses working in hospitals to those working outside the hospital setting, it was found that hospital nurses had a higher workload, worked more hours with less breaks and were more likely to be understaffed (Sveinsdóttir, Biering, Ramel, 2006). On the other hand, hospital nurses reported significantly higher levels of social support from colleagues than those working outside the hospital. Although there have been numerous studies on

work-related stress in nursing staff, the majority of these studies have focused on singular hospital settings and therefore are not representative of all nurse practitioners.

Although many studies focus on hospital workers, the majority of HCAs work in nursing home facilities, providing care for residents (Cooper *et al.*, 2016). A cross-sectional study on Canadian HCAs found that job characteristics such as increased workload load, lack of social support from colleagues and lack of rewards were related to burnout and job pressure. While greater support from colleagues, family and friends helped HCAs deal with work burnout and perceived job pressure (Chappell & Novak, M. 1992). Furthermore, participant demographics, such as being married, older and having more years of experience were also found to reduce burnout.

Islam *et al.* (2017) studied the effects of stress on nursing home and residential care workers in the UK. They conducted a national survey on care staff working with dementia residents in randomly selected care homes in Wales. focused on health and welfare; stress; productivity; job content; job satisfaction; and overall experience of working in the field. Results showed that staff working in nursing homes experienced greater levels of stress than those working in residential homes due to work events, workload and scheduling. Staff in smaller care homes also reported higher job satisfaction and lower burnout due to higher staffing levels. Limitations to the study included a moderate response rate of 54% and the self-selection of staff in nursing homes to complete the survey. These findings correspond with McVicar (2003) in terms of work load and work organisation having a strong impact on stress levels.

Dunn *et al* (1994) also studied the levels of work-related stress in private nursing home workers in the UK. A questionnaire was developed specifically for care staff working in nursing homes and was distributed to 12 care homes with a response rate of 30%. Similarly, they found that job characteristics such as lack of training and shortage of staff contributed to stress levels, along with lack of support from co-workers and home-work conflicts. Interestingly, unlike other studies (McVicar, 2003; Islam *et al.*, 2017), workload was not reported as a major source of stress. Instead, management factors such as unsatisfactory wages, being poorly resourced and feeling undervalued by management were the main sources of stress. The authors explain these differences by the fact that private nursing homes are influenced by profit, hence the lower wages and lack of resources.

2.6 The Irish healthcare sector

Despite spending, on average, 20 percent more on healthcare than other EU countries (OECD/European Observatory on Health Systems and Policies, 2019), Ireland's healthcare system does comparatively worse in many areas. According to the EuroHealth Consumer Index 2016, the Irish healthcare system scored poorly on the following categories: Patient Rights and Information, Accessibility, Outcomes, Range and Reach of Services and Prevention. Unlike other European countries, Irish patients do not have access to no-fault malpractice insurance or the right to a second opinion. Furthermore, patient waiting lists were longer than any other country surveyed. In 2018, shortage of staff and overcrowding of emergency departments resulted in over 108,200 patients waiting on trolleys in emergency departments or on wards (The Irish Times, 2018). Healthcare professionals are working in under-resourced environments without any support systems, constantly having to compromise the quality of care. In the meantime, countries such as Canada, Australia and the US are actively recruiting Irish healthcare professionals, which is exacerbating the problem of understaffing in Irish healthcare facilities.

A recent study by Donnelly (2014) investigated the experiences of Irish nurses involved in daily clinical practice, using a cross sectional survey research design. Participants reported redeployment to work in other areas and staffing levels to be the main causes of work related stress. This was similar to findings in the UK where staff shortages were said to contribute to burnout, exhaustion and increase in absenteeism among nurses (Donnelly, 2012). In recent years, Irish hospitals have experienced increased difficulties in attracting and retaining nurses to secure adequate staff levels (Wall, 2016). This is partially due to the increased levels of job dissatisfaction and disengagement among healthcare workers.

The Covid-19 pandemic has undoubtedly put further pressure on the already understaffed healthcare workers with limited resources. Irish healthcare workers reported inadequate staffing, lack of support from government and management, increased workload and fear of contagion as the main causes of psychological distress during a viral pandemic (McMullan, Brown & O'Sullivan, 2016). Furthermore, the limited availability of Intensive Care Units has put doctors and nurses in difficult situations, having to prioritise patients with the highest chance of survival (Archard, Caplan, Connolly Mitty & Connolly Mitty, 2020).

Covid-19 has also impacted nursing homes, with a total of 5,808 cases reported at the end of June 2020 (Houses of the Oireachtais, 2020). Due to the lack of hospital resources, nursing

homes have accepted transfers from hospitals for respite care, which has contributed to outbreaks of the virus in care homes. This has resulted in understaffing in care homes as staff members became unavailable after testing positive for Covid-19.

2.7 Conclusion

Results of the literature review show that there has been much interest in the area of occupational stress worldwide. Studies have used different surveys and qualitative methods, such as interviews, to investigate the causes of stress in healthcare workers. However, stress is subjective in nature and the triggers of stress vary from one individual to another. Therefore, it is difficult to measure individuals' stress levels. When looking at work stressors in nurses and HCAs, factors that cause stress in one group may not have the same impact on the other group. Research suggests that stressors for nurses include inadequate staffing, increased workload, interruptions, poor pay, and difficult working relationships with other healthcare professionals. While stressors for HCAs included poor pay, inadequate staffing, and increased workload (Lapane & Hughes, 2007). However, the majority of studies on occupational stress and satisfaction in healthcare workers focus on hospital settings (Chou, Li, & Hu, 2014; Donnelly, 2014; Grunfeld *et al*., 2004; Ramirez *et al*., 1996) and HCAs mainly work in nursing home settings (Cooper *et al.*, 2016). Therefore this group may be under represented in the current literature. Many authors have argued the need for further studies with larger sample sizes from more than one institution (Chou, Li, & Hu, 2014; Donnelly, 2014; Dunn, 1994). Despite this, relatively few studies have compared the levels of job stress and satisfaction in individuals working in different clinical settings and environmental circumstances.

The future of healthcare facilities will present significant challenges for organisations and employees. Healthcare workers are generally at a greater risk of stress and job dissatisfaction in comparison to other professions (Parent-Thirion, *et al*., 2011), which leads to increased turnover and absenteeism and impacts the efficacy of health services (Berland, Natvig & Gundersen, 2008; Puteri & Syaebani, 2018). The implication for hiring managers will be to attract and retain healthcare staff, since pay increases are not always possible, managers will need to find creative solutions to reduce stress and increase job satisfaction through intrinsic motivators. This study aims to investigate the predictors of job stress and job satisfaction among healthcare professionals in Ireland and examine the prevalence of

COVID-19 related anxiety. In doing so, the author intends address the gap in the literature and assist healthcare managers to identify and address the causes of job stress and satisfaction in their staff.

Chapter 3 - Research Questions

It is evident from the literature review that occupational stress affects healthcare workers globally and can have a negative impact on their physical and psychological wellbeing. The overall aim of this research is to investigate if there is a relationship between demographic factors (such as age and years of work experience), job characteristics (such as job title, relationships with colleagues and managers and staffing levels), job satisfaction and general stress experienced nurses and healthcare assistants. The perceived anxiety in response to Covid-19 in nurses and healthcare assistants will also be investigated.

The main research aim of this study is:

To investigate the predictors of job stress and job satisfaction among healthcare professionals in Ireland and examine the prevalence of COVID-19 related anxiety.

1. Is there a relationship between demographic factors and job satisfaction in healthcare professionals?
2. Is there a connection between job characteristics and job satisfaction in healthcare professionals?
3. What is the relationship between demographic factors (age and years of work experience) on perceived stress in healthcare professionals?
4. Is there an association between job characteristics (such as job title, relationships with colleagues and management and staffing levels) and perceived stress in healthcare professionals?
5. Is there a difference between perceived COVID-19 stress and anxiety reported by nurses and healthcare assistants?

Chapter 4 - Methodology

4.1 Research philosophy

Research philosophy relates to the development of knowledge and the characteristics of that knowledge (Saunders, 2007). There are two widely used philosophical approaches in research; positivism and interpretivism. The chosen philosophical approach should guide the research methods and analysis. Positivism involves collecting data on quantifiable observations in social and organisational realities for statistical analysis (Saunders, 2007). Positivist researchers believe that facts can either be proven or disproven and reality can be established through observation and measurements.

Whereas, interpretivism emphasises the need to study individuals' perceptions of the social world through qualitative methods such as interviews and observations. Interpretivist researchers believe that individuals can never be absolutely separated from their own values and beliefs and this will influence the way in which researchers gather, analyse and interpret data (Bryman, 2008). Therefore, the main differences between the two approaches is that positivist researchers tend to use highly structured methods to facilitate replication, whereas interpretivists are more interested in understanding the complicated realities of their environment.

Positivism is associated with quantitative research, which is based on numerical data and interpretivism emphasises the use of qualitative analysis based on non-numerical data. Both approaches are useful for conducting business and management research, however there are advantages and disadvantages that need to be considered when performing quantitative or qualitative analysis.

4.2 Research design

Qualitative research

Qualitative research methods is one approach that could have been employed for the purposes of this study. Unlike quantitative research, qualitative methods focus on the holistic understanding of complicated realities and practices where the questions and hypotheses appear collectively as the study progresses. It typically focuses on a small number of participants who are questioned using a mix of informal interviews, participant observation, photography and video. According to Gilqun (1992), qualitative research is not characterised by numbers, instead it focuses on meaning and the involvement of the researcher in the

interview process. Therefore, this research method is subjective and highly dependent on the skills of the researcher to accurately relay the complete and detailed views of the participants. Another limitation of qualitative research is that the findings cannot be applied to larger populations with the same level of confidence as that of quantitative analyses (Ochieng, 2009).

Quantitative research

Quantitative research is generally derived from experimental and statistical methods, which are objective in nature, to determine the truth or falsehood of a predetermined hypothesis (Saunders, 2007). The main tools are usually surveys or questionnaires which are administered to a large, randomised sample of a certain population and analysed using statistical methods. Saunders (2007) recommends using questionnaires when planning to undertake descriptive research as they allow data to be collected objectively and systematically for analyses by statistical software such as SPSS. Another advantage to using questionnaires is that participants can remain anonymous, especially when investigating sensitive topics such as work-related stress. However, there are concerns and limitations to using questionnaires as the primary source of data collection, these include response distortions, non-response bias, method variance, psychometric properties and design and analysis. However, using a validated measurement instrument increases the reliability of results and using multiple items to evaluate the subject of interest reduces measurement error in the scale as a whole (Nunnally, 1978). Furthermore, the consistency of a multi-item scale can be assessed by the Cornbach alpha coefficient, where a value of 0.7 or higher indicates acceptable internal consistency (Cox & Ferguson, 1994). Overall, self-administered questionnaires offer practical advantages to organisational researchers and the majority of studies measuring occupational stress use quantitative research methods with self-report tools such as questionnaires (Razavi, 2001).

Quantitative methods were chosen to undertake this research as they allow for a broader study with a larger number of participants, which improves the generalisation of the results (Saunders, 2007). Quantitative research is also considered to produce results of greater objectivity and accuracy. For ethical considerations, the use of self-administered questionnaires allowed participants to remain anonymous when collecting information on sensitive topics such as work-related stress. Finally, self-administered questionnaires allow

for quick collection of data, which was deemed necessary under current circumstances as healthcare workers are working longer hours due to COVID-19 and would have less time for the lengthy interviews associated with qualitative research.

Cross-sectional design

A cross-sectional study design is a form of observational study which is used to measure the prevalence of a behaviour or condition in a population (Setia, 2016). However, since it involves measuring the exposure and outcome only one time, it is difficult to derive causal relationships from cross-sectional analysis. Nevertheless this type of study design allows researchers to investigate associations between dependent and independent variables (Setia, 2016), which is essentially what this study aimed to accomplish. The independent variables measured in this study where participant demographics, Covid-19 specific stressors and organisational stressors. These factors were chosen as they have previously been identified as contributors to occupational stress (McVicar, 2003; Mészáros et al., 2013; Islam *et al*., 2017; Chung *et al.,* 2020). These factors were therefore used to predict the outcome of the dependent variables, which were job stress, COVID-19 related anxiety and job satisfaction.

4.3 Participants and sampling

Convenience sampling was used as the questionnaire was distributed via LinkedIn messages to HCAs and nurses in the researcher's wide network of healthcare professionals in Ireland. According to Green (1991), the formula $N \geq 50 + 8$ m can be used to determine the sample size in multiple regression analysis, where N is the number of participants and m is the number of independent variables. This study had a total of seven independent variables: age, years of work experience, job title (HCA or nurse), staffing levels, relationship with colleagues and supervisors and COVID-19. Therefore, according to Green's formula, a minimum of 106 participants were required for this survey. A total of 130 surveys were sent via LinkedIn and 112 completed surveys were collected, giving a response rate of 86%. Data was collected on participant age, gender, education level, years of work experience, type of facility they work in (i.e. hospital, nursing home, etc.), marital status and number of children they had. Details of participant demographics are displayed in table 1 below. Since this study was focused on nurses and HCAs, only participants currently employed as nurses or HCAs were included in the survey.

	Mean	SD		
Age	32.48	8.111		
Years of work experience	6.01	4.276		
Number of children	0.51	0.920		
	Male	Female		
Gender	18 (16.1%)	94 (83.9%)		
	Nurse	HCA		
Job title	51 (45.5%)	61 (54.5%)		
	Single	Married	Cohabiting	
Marital status	65 (58%)	34 (30.4%)	13 (11.6%)	
	hospital	Nursing home	Care home	Other
facility	48 (42.85%)	48 (42.85%)	14 (12.5%)	2 (1.8%)

Table 1. Participant demographics

4.4 Measures

The questionnaire consisted of four sections. Section one contained eight questions on participant demographics. Job stress and job satisfaction were measured by means of a questionnaire developed by Ramirez *et al* (1996) to assess the effects work stress and satisfaction in hospital consultants. This questionnaire consists of 17 specific sources of job satisfaction and 25 specific sources of job stress. Therefore, section two of the present survey contained 17 questions on job satisfaction and section three consisted of 25 questions on job stress. Section four was the last section, consisting of 9 questions relating to COVID-19 related stress and anxiety. This questionnaire was specifically developed to measure anxiety in healthcare staff during viral pandemics (Chung *et al.*, 2020).

Job Satisfaction Scale (Ramirez, *et al*., 1996)

Fifteen out of the seventeen questionnaire items regarding perceived sources of satisfaction were grouped into four categories: good relationships with patients, families, and colleagues; professional status/esteem; intellectual stimulation; and adequate management and resources. A four-point Likert scale was used to measure satisfaction, ranging from 0 (not at all), 1 (a little), 2 (quite a bit) and 3 (a lot). Only a score of 2 or higher qualified as satisfied. A total satisfaction score was measured, ranging from 0 to 51, with higher scores indicating

greater satisfaction. The prevalence of job satisfaction was determined by dividing the number of people scoring higher than 17 by the total number of participants. The Cornbach alpha coefficient was calculated for the items measuring relationships with colleagues, patients and families and adequate management and resources as these items were related to the independent variables assessed in this study. The Cornbach alpha value for relationship-related items was 0.78 and the value for management and resources related items was 0.75, both scores were deemed as acceptable as they were above 0.7 (Cox & Ferguson, 1994). The full questionnaire is included in the appendices.

Job Stress Scale (Ramirez, *et al*., 1996)

Twenty of the twenty five items regarding perceived sources of stress were divided into five groups: workload and consequences on home life; difficult relationships with colleagues and management, inadequate management and resources; managerial duties assumed; and having to deal with patients' suffering. The same Likert scale was used, where the latter two responses qualified as stressed. A total stress score was generated by using a score of 0 to 75, with higher scores indicating greater stress. The prevalence of job stress was determined by dividing the number of people scoring higher than 25 by the total number of participants. The Cornbach alpha value for items related to difficult relationships was 0.75 and the value for inadequate management and resources related items was 0.83.

SAVE-9 Scale (Chung *et al*., 2020)

A nine item SAVE-9 scale was used to measure anxiety about viral pandemics (3 items) and the work-related stress associated with viral pandemics (6 items). The scale assessed fear of the virus, contagion, stigmatisation, anxious responses, job aversion, and concern about colleagues' attitudes (Chung *et al*., 2020). A five point Likert scale ranging from 0 (never) to 4 (always) was used to measure the nine items. The cut-off points for SAVE-9 and its anxiety subcategory were 22 and 15 respectively. The Cornbach alpha value for the SAVE-9 questionnaire was 0.9.

4.5 Procedure

A questionnaire was developed using Google Forms and a link was generated to complete the survey online. The questionnaire was piloted with five participants before being distributed to a wider population of HCAs and nurses via LinkedIn messages. After gathering feedback from participants of the pilot study, no changes were made to the survey. The survey remained open for a period of three weeks. After the three-week period, the survey was closed and the data was ready for analysis.

4.6 Ethical considerations

An ethics statement was included at the start of the questionnaire to inform participants of the nature of the study and a description of the questions in each section. Participants were asked whether or not they consented to take part in the study prior to commencing the survey. Participants were also informed about how their data was analysed and who would have access to it. The author assured participants of the voluntary nature of the study, that results were completely anonymous and no personal or identifiable data would be collected that could be used to identify them. The participants were also given the author's contact details and the supervisor's contact details should they have any questions or concerns about the study. Information on where to find additional support for those struggling with stress and anxiety was also provided at the end of the survey.

4.7 Data Analysis

The data was downloaded onto Excel for analysis using SPSS version 26.0. Descriptive statistics were used to define the participant demographics (age, gender years of experience, etc.), and the overall results of the job satisfaction, job stress and SAVE-9 scales. The normality of the data was assessed using the Shapiro-Wilks test. Inferential statistics were used to answer the five research questions. Pearson correlations were used to assess the relationships between participant demographics and job stress and job satisfaction, and to assess the relationships between job characteristics (relationships with colleagues and managers and adequate staffing) and job satisfaction and job stress. Welch's t-tests analysed the relationships between job titles (HCAs and nurses) and job stress and job satisfaction. A Welch's t-test was also used to assess the difference between perceived COVID-19 stress and anxiety in nurses and HCAs

4.8 Limitations to study design

Similar to previous studies, this research has some limitations such as the bias of self-administered surveys and the impact of the response rate. Questionnaire bias arise from unanticipated communication barriers between the investigator and respondents that produce inaccurate results. Nonresponse bias can also impact the accuracy of survey results the number of people responding and the characteristics of the respondents will determine whether or not the results can be generalised to a wider population (Phillips, Reddy, & Durning, 2015). This study used convenience sampling which has the disadvantage of not being able to determine whether or not the whole population is being represented by the sample size. However, due to time constraints, it was not possible to use probability sampling. Confounding factors could also affect the results of the study, the associations between marital status, number of children, education level and job stress and satisfaction will be measured in order control for confounders. Another possible limitation is the timing of the study. At the beginning of the pandemic in March 2020, healthcare workers were faced with increasingly challenging working conditions as PPE was in short supply and a high proportion of staff were infected with COVID-19 rendering them unfit for work (O'Halloran, 2020). However, this study was conducted almost a year later when there were no reported shortages of PPE and 292,961 frontline healthcare workers received at least one dose of the COVID-19 vaccines (Government of Ireland, 2021). The number of hospitalisations due to COVID-19 has also fallen from 3,352 at the end of July 2020 (Lima, 2021) to 426 hospitalisations at the beginning of March 2021 (Halpin, 2021). Although working conditions remain challenging for healthcare staff, it is difficult to say whether improvements in the supply of essential equipment, reduced numbers of COVID-19 related hospitalisations and vaccinating staff against the virus may have affected the results which makes it difficult to assess the true impact of COVID-19 on stress and anxiety in healthcare staff. To conclude, the cross-sectional design of this study means that cause and effect relationships cannot be established between the variables being measured.

Chapter 5-Research Results

5.1 Descriptive statistics

Of the 130 surveys sent to healthcare workers via LinkedIn, 112 (86%) returned their questionnaires. These included 61 HCAs and 51 nurses, 83.9% of respondents were female and 16.1% were male, 43% were working in a hospital, 12% worked in home care, 43% worked in a nursing home and 2% worked in other establishments. The majority of respondents were single (58%), 30.4% were married and 11.6% were cohabiting. The mean values and standard deviation for participant age and years of work experience are shown in Table 2.

	N	Minimum	Maximum	Mean	Std. Deviation
Age	112	20	60	32.48	8.111
Years_of_Experience	112	1	22	6.01	4.276
Valid N (listwise)	112				

Table 2: Participant age and work experience descriptive statistics

Job satisfaction

Overall, 79.4% of participants were quite a bit satisfied and 3.6% were very satisfied, giving a total job satisfaction score of 83%. The remaining 17% were not satisfied with their jobs. The Shapiro-Wilk test was used to test for normality, results showed that the data were non-normally distributed (p = 0.001). Table 3 illustrates the mean values, standard deviation, range, confidence interval and for the overall job satisfaction results.

		Statistic	Std. Error
Mean		31.88	0.676
95% Confidence Interval for Mean	Lower Bound	30.54	
	Upper Bound	33.22	
Std. Deviation		7.157	
Minimum		8	
Maximum		49	
Range		41	

Table 3. Total job satisfaction descriptive statistics.

Job stress

Results of the questionnaire indicated that the majority of healthcare workers surveyed reported some degree of stress. A total of 41.1% of participants found their work quite

stressful and 57.1% were 'a little bit' stressed, while 1.8% of healthcare professionals reported finding their work not at all stressful (0 on job stress scale). The Shapiro-Wilk test was used to test for normality, results showed that the job stress data were normally distributed (p = 0.560). Table 4 illustrates the mean values, standard deviation, range, confidence interval and for the overall job stress results.

		Statistic	Std. Error
Mean		33.81	0.957
95% Confidence Interval for Mean	Lower Bound	31.92	
	Upper Bound	35.71	
Std. Deviation		10.129	
Minimum		4	
Maximum		56	
Range		52	

Table 4. Total job stress descriptive statistics.

COVID-19

The SAVE-9 questionnaire was used to measure COVID-19 related anxiety among healthcare workers. According to Chung *et al.*, 2020, participants who score at least 15 on the anxiety items and 22 on the overall SAVE-9 questionnaire have at least a mild degree of anxiety. Overall, 34.8% of participants met the cut-off criteria for mild levels of anxiety according to their SAVE-9 scores. Results of the Shapiro-Wilk test showed that the data were not normally distributed (p = 0.003). Table 5 shows the mean, standard deviation, range and confidence interval for overall COVID-19 related anxiety results.

		Statistic	Std. Error
Mean		18.65	0.606
95% Confidence Interval for Mean	Lower Bound	17.45	
	Upper Bound	19.85	
Std. Deviation		6.412	
Minimum		0	
Maximum		30	
Range		30	

Table 5. Total COVID-19 related anxiety descriptive statistics

5.2 Inferential Statistics

To answer the first research question and establish the relationship between participant age and years of experience and job satisfaction, a Pearson correlation analysis was performed. Results did not find a significant correlation between job satisfaction and any of the following

factors: years of experience (r = -0.032, *p* = 0.738), participant age (r = -0.109, *p* = 0.254), marital status (r = -0.248, *p* = 0.080), education level (r = -0.008, *p* = 0.937) or number of children (r = 0.106, *p* = 0.265).

The second research question aimed to examine the relationship between job characteristics and job satisfaction. The job characteristics in question were: relationships with other staff members and managers and staffing levels. A Pearson correlation was completed to examine the relationship between these variables. A moderate correlation was found between having a good relationship with colleagues and job satisfaction (r = 0.542, *p* = 0.000). Similarly, there was a moderate correlation between job satisfaction and adequate staffing levels (r = 0.520, *p* = 0.000). To test the correlation between having good a good relationship with management and job satisfaction, question 23 'Encountering difficulties in relationships with managers/supervisors' was re-coded to transform high scores into corresponding low scores. Although there was a positive relationship between job satisfaction and having a good relationship with managers, the correlation was weaker than with the other two variables (r = 0.390, *p* = 0.000).

A Welch's t test was used to explore the variance in job satisfaction between HCAs and nurses, however there were no statistically significant differences between the two groups (*p* = 0.415).

Job Stress

Out of the 25 items on the perceived job stress questionnaire, 16 items were aggregated into four factors by factor analysis: workload and its effect on home life, poor management and resources, dealing with patients' suffering and having to take on managerial responsibilities. The third research question looked at the relationship between participant demographics and job stress. After analysing the data using a Pearson correlation, no significant association was found between job stress and any of the following factors: participant age (r = 0.046, *p* = 0.632) marital status (r = -0.112, *p* = 0.240), education level (r = -0.034, *p* = 0.719) or number of children (r = 0.002, *p* = 0.986). However, there was a weak positive correlation between years of work experience and work-related stress (r = .271, *p* = 0.004), suggesting that more experienced staff reported slightly higher levels of stress than less experienced staff.

Pearson correlation was used to address the fourth research question "Is there an association between job characteristics (such relationships with colleagues and management

and staffing levels) and perceived stress in healthcare professionals?" Inadequate staffing levels had the strongest correlation with job stress (r = 0.722, *p* = 0.000). Having difficult relationships with managers was also strongly related to stress (r = 0.696, *p* = 0.000). Similarly, difficult relationship with colleagues (r = 0.605, *p* = 0.000) were strongly correlated with reported levels of stress. 24.1% of respondents scored 0 (no difficulties with colleague relationships) 51.8% scored 1 (a little bit of difficulty with colleague relationships), 17.9% scored 2 (quite a bit of difficulty with colleague relationships) and 6.3% scored 3 (very difficult relationships with colleagues).

Additional analysis of the data found a strong correlation between workload factors, inadequate staffing levels and job stress. The four items relating to workload were questions 2, 3, 12 and 13. Question 2 was related to the overall volume of work and results showed that it had a strong correlation with job stress (r = 0.767, *p* = 0.000) and inadequate staffing levels (r = 0.729, *p* = 0.000). Question 3 looked at disruption to home life by working long hours and had a strong effect on stress (r = 0.641, *p* = 0.000) and a moderate effect on inadequate staffing levels (r = 0.479, *p* = 0.000). Question 12 investigated the disruption on home life as a result of taking work home, which had the least effect of the four items on job stress (r = 0.423, *p* = 0.000) and inadequate staffing levels (r = 0.218, *p* = 0.022). Question 13 looked at the disruption of home life caused by being on call, and was also strongly related to job stress (r = 0.652, *p* = 0.000) and moderately correlated to inadequate staffing levels (r = 0.471, *p* = 0.000).

A Welch's t-test was conducted to examine the variance in job stress between HCAs and nurses, both groups were found to have statistically significant differences in stress levels (*p* = 0.000). Figure 2 shows the proportion of HCAs and nurses who scored 2 or 3 on the items in the job stress questionnaire. Nurses typically scored higher than HCAs on all of the stress items, except for having inadequate facilities where HCAs scored higher than nurses (31.15% vs 17.65% respectively). HCAs and nurses had similar scores on the following items: having uncertainty over future funding of their unit, being responsible for the welfare other staff members, the threat of being sued for malpractice and encountering difficulties with junior medical staff.

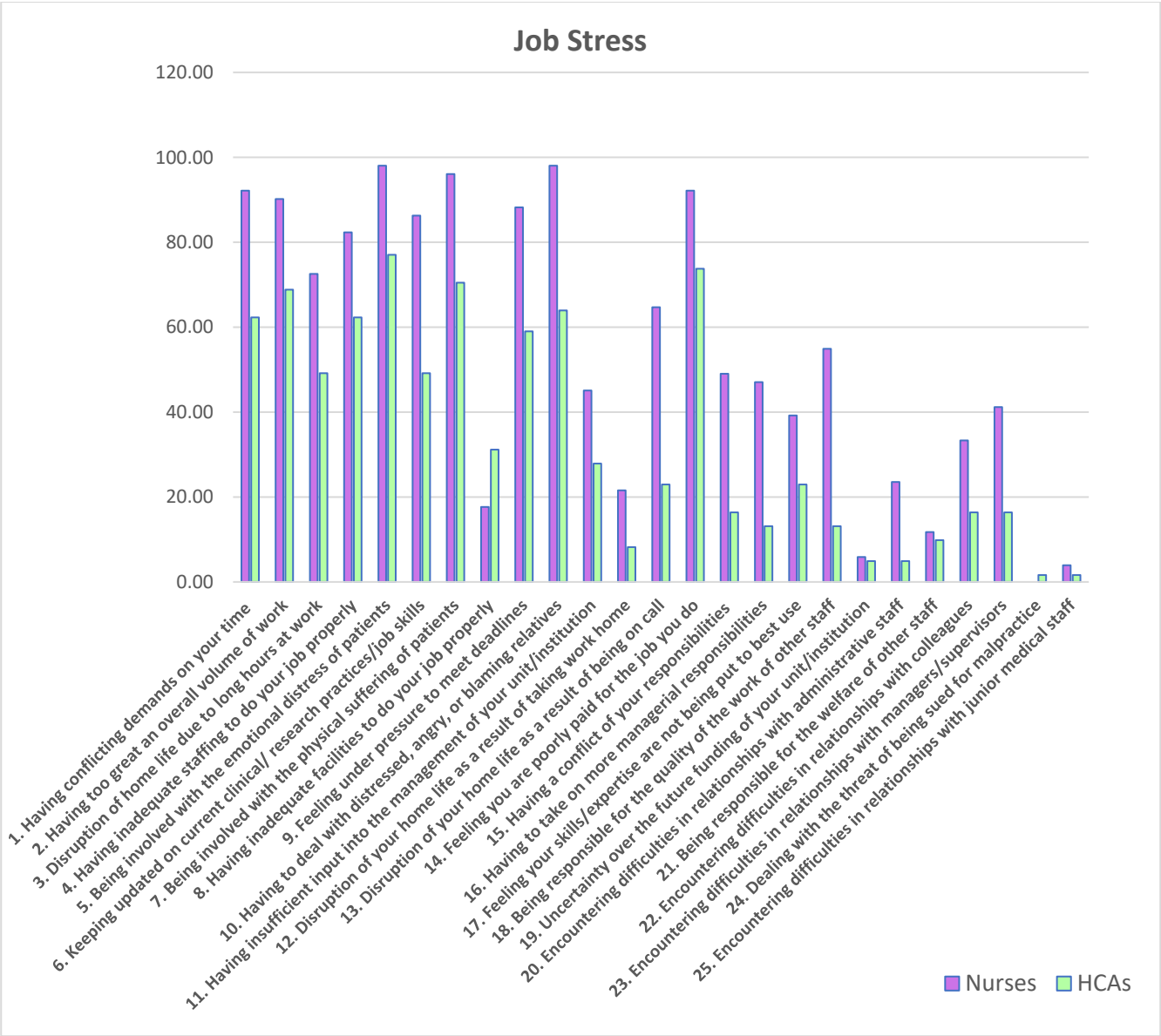


Figure 2: Sources of job stress: proportion of HCAs and nurses rating item as contributing 'quite a bit' or 'a lot' to overall job stress

According to Ramirez *et al* (1996), job satisfaction has a significant protective effect against job stress. A Pearson correlation test was performed to investigate if there was any association between the total job stress scores and total job satisfaction scores. Results showed a weak negative correlation between the two variables ($r = -0.231$ and $p = 0.014$), suggesting that job satisfaction had a weak relationship with job stress. The linear relationship between job satisfaction and job stress is illustrated in the appendices.

COVID-19 related anxiety

Research question 5 aimed to determine whether or not there were any significant differences between perceived COVID-19 stress and anxiety reported by nurses and healthcare assistants. A Welch's t-test was performed to compare the overall SAVE-9 scores of HCAs and nurses. Results of the test indicated a significant difference between the two groups ($p = 0.000$). Of the 61 HCAs surveyed, 24.6% had at least mildly affected by COVID-19 related anxiety and 47.1% of the 51 nurses surveyed had at least a mild level of COVID-19 related anxiety.

Chapter 6 – Discussion

This study aimed to investigate the predictors of job stress and job satisfaction among healthcare professionals in Ireland and examine the prevalence of COVID-19 related anxiety. The main findings that emerged from this research were the high levels of job satisfaction among healthcare workers, 83% of participants were satisfied with their jobs, which is higher than figures reported by previous studies (Grunfeld, 2004; Rosales, Labrague & Rosales, 2012). Factors such as adequate staffing, positive relationships with colleagues and supervisors were significantly associated with overall job satisfaction, which is consistent finding from previous studies (Grunfeld *et al*., 2004; Ramirez *et al*., 1996; Dunn, Wilson & Esterman, 2005; Kalisch & Lee, 2012). On the other hand, the present study did not find any significant relationship between participant age or years of experience and job satisfaction. There are mixed findings on the association between participant demographics and job satisfaction, with some authors suggesting that older, more experienced staff have higher levels of job satisfaction (Salam *et al.*, 2014; Khamlub *et al*., 2013). While, others reported no significant associations between job satisfaction and age or work experience (Bovier & Perneger, 2003; Kivimaki, Kalimo & Lindstrom, 1994).

Despite the high levels of job satisfaction, 41.1% of participant reported feeling stressed at work. This is lower than the stress levels reported by some studies, such as Salam *et al* (2014) who found that 66.2% of healthcare workers suffered from work related stress. However, they included medical interns in their study which impacted the overall prevalence of job stress. In contrast, results from the Cancer Centre in Ontario, Canada (Grunfeld, 2004) showed that 32.8% of the healthcare workers they surveyed felt 'quite a bit' or 'a lot' stressed at work. A weak relationship was discovered between years of work experience and overall job stress. Previous studies had mixed results, one author found that experienced staff were less stressed (Al-Omar, 2003) while others found that more experience resulted in higher stress levels (Aslan, Erci & Pekince, 2021; Potter *et al*., 2010). Factors such as inadequate staffing levels, increased workload, low pay rates and difficult relationships with colleagues and managers were significantly associated with higher job stress scores, which is consistent with findings from the literature (Donnelly, 2012; Lapane & Hughes, 2007; McVicar 2003; Ramirez *et al*., 1996). The COVID-19 pandemic also affected anxiety levels in healthcare workers with 34.8% of participants reporting mild levels of COVID-19 related anxiety. Studies

from around the world confirmed that COVID-19 had a negative impact on stress and anxiety levels in healthcare staff (Chung *et al*., 2020; Papa *et al*., 2020; Shechter *et al*., 2020).

Since findings from the literature review suggested that nurses were more prone to stress and burnout than other healthcare workers (Chou, Li & Hu, 2014; Ho, Chang & Tsao, 2010; Rosales, Labrague & Rosales, 2012), the present study also compared HCAs and nurses in terms of their job stress and satisfaction and COVID-19 related anxiety levels. No significant differences were found in overall job satisfaction between the two groups. However, when comparing both groups in terms of job stress and COVID-19 related anxiety levels, nurses had significantly higher levels of job stress and COVID-19 related anxiety than HCAs, which affirms findings from previous research.

The results of this study may help healthcare facilities improve working conditions by reducing job stress and enhancing job satisfaction levels in nurses and HCAs. The main findings suggest that organisations should promote a culture which fosters good relationships between co-workers and between employees and management. Healthy relationships with co-workers provide employees with emotional and instrumental support as they have a comprehension of the internal working environment (Jia & Shoham, 2012). Furthermore, good relationships with co-workers may lead to effective communication and collaboration, enhanced decision-making (Heath, Johanson & Blake, 2004) and are stronger drivers of work engagement than supervisory relationships (Wong, Spence Laschinger, & Cummings, 2010). When looking at both groups, HCAs mainly associate job satisfaction with team work and relationships with colleagues and supervisors (Brady, 2016). Whereas, collaboration with physicians and multidisciplinary teams were associated with higher levels of job satisfaction in nurses (Zangaro & Soeken, 2007).

There is evidence to suggest that positive relationships with supervisors can trigger unforeseen reward behaviours and intrinsic esteem motivators, such as sense of achievement, recognition from peers and supervisors and level of responsibility, that influence employees' job satisfaction levels (Watson, 2009). Motivating factors such as creativity, making work more interesting, increasing initiative and planning tend to increase job satisfaction (Longest, 1990), especially when budget restrictions limit increases to monetary benefits (Maslow, 1970). Involving employees in decision making and problem solving and seeking their opinions will also increase their autonomy and job satisfaction and make them feel as part of the organisation, while simultaneously reducing stress (Karesek,

1979). Therefore, managers who understand the importance of these factors are more likely to gain improved performance and motivation from their staff.

Previous studies have indicated a connection between adequate staffing and job satisfaction in healthcare workers (Dunn, Wilson & Esterman, 2005; Kalisch & Lee, 2012). This study also found a significant relationship between higher levels of job satisfaction and perception of adequate staffing. According to Kalisch & Lee (2012), the positive interaction between staff numbers and satisfaction continues even after controlling for patient acuity and participant demographics, such as age, gender, education and years of work experience. However, hospitals and other healthcare providers often struggle to balance the cost of staffing and the job satisfaction of their employees (Kalisch & Lee, 2012). Nursing homes in particular were found to have insufficient nursing staff to provide the levels of care necessary to meet regulatory and practice guidelines (Graham, 2020). Moreover, inadequate staffing in long term care units for elderly patients may lead to increased dissatisfaction and turnover, further compounding the issue of insufficient staffing (Moyle, *et al*., 2003). Nevertheless, it is more and more challenging to make improvements in staffing levels in the face of the current nursing shortage.

Another factor which frequently appears in the literature on job stress and satisfaction in healthcare staff is renumeration (Khamlub *et al*., 2013; Bhatnagar & Srivastava, 2012). Findings of this study show that 92% of participants reported feeling at least 'a little bit' under paid. This is a common trend around the world, with many studies reporting similar findings (Khamlub *et al*., 2013; Lephalala, Ehlers & Oosthuizen, 2008). According to Herzberg's theory of motivation, extrinsic factors such as salary and benefits are just as important as intrinsic factors when it comes to job satisfaction, which in turn reduces turnover (Ball, 2003). In fact, employees who are dissatisfied with salary, rewards and work climate are more likely to report higher degrees of burnout (McVicar, 2003; Ogresta *et al*., 2008). In Ireland, many nurses chose to work for external agencies who offer better pay rates than the Health Service Executive (HSE) (Murray, 2020), which demonstrates the importance of renumeration in terms of job satisfaction and employee retention.

Interestingly, when comparing the relationship between job stress and job satisfaction, the latter only had a weak negative association with overall stress. A study by Ramirez *et al.* (1996) found that higher levels of job satisfaction had a significant protective effect against job stress. In addition, studies found that job stress, staff turnover (Chao *et al*.,

2015) and staff burnout (Ogresta et al., 2008) were all inversely related with job satisfaction. Such findings suggest that job satisfaction should be taken into consideration when developing policies on stress prevention and employee retention.

The overall prevalence of job stress, that is those who on average, reported feeling at least 'quite a bit' stressed was 41.1%. Work-related stress may lead to negative consequences such as fatigue, absenteeism, turnover, customer dissatisfaction, and for healthcare staff, in particular, it can result in incorrect diagnoses and curative actions (Berland, Natvig & Gundersen, 2008; Puteri & Syaebani, 2018). Therefore, healthcare organisations should identify the sources of stress and develop stress reducing policies and practices. To establish the sources of stress, it is important to understand whether or not certain job characteristics or demographic factors predispose employees to experience higher levels of job stress. For example, some studies found that younger healthcare workers were more at risk of job stress (Chou, Li & Hu, 2014; Embriaco *et al*., 2007). In contrast, this study did not find any significant associations between age and job stress. However, a weak but significant relationship was discovered between years of experience and overall job stress. There is evidence to suggest that healthcare professionals with 6 to 20 years of experience are more at risk of suffering from work-related stress, compassion fatigue and burnout (Aslan, Erci & Pekince, 2021; Potter *et al*., 2010). In particular, healthcare staff exposed to higher numbers of patient deaths and severe clinical symptoms were more likely to experience workplace stress the longer they worked in the field. Since data was not collected on the type of care participants provided (such as acute vs. chronic), it is impossible to say whether or not this had an impact on work experience and job stress in the present study.

Results of the Pearson correlation on job characteristics and job stress found a strong relationship between inadequate staffing levels and work stress. Similar findings were reported by Grunfeld *et al.*, 2004, where insufficient coverage meant that staff had to sacrifice lunch breaks, spend less time with individual patients, work long hours and had limited time for professional development activities which they needed for growth and regeneration. They also found that having too great an overall volume of work and disruption to home life as a result of being on call were among the principal sources of job stress. The present study also found a significant association between job stress, having a large volume of work and disruption of home life due to spending long hours at work. Other job characteristics which had a strong association with job stress were, having difficult

relationships with colleagues and with managers or supervisors. As suggested by the JDC stress model, receiving social support from colleagues and supervisors may alleviate work-related stress and has a positive effect on employee wellbeing (Cooper *et al*., 2001). Furthermore, previous studies have identified that lack of communication and support from management and being subjected to intolerable behaviour or bullying from co-workers were associated with work-related stress and burnout (Bruschini, Carli & Burla, 2018). Therefore, it is not surprising that having difficult relationships with colleagues and supervisors is related to job stress.

When the responses from nurses and HCAs were compared, nurses had higher overall job stress than HCAs. Gray-Toft and Anderson (1981) have identified seven major stressors among nursing staff. These include the death and suffering of patients, conflict with medical staff, insufficient training, inadequate social support, difficult relationships with colleagues, unreasonable workload and uncertainty about treatment administered. When comparing these stressors with the sources of job stress in the present study, nurses did score highly on being involved with the emotional suffering of patients and having an excessive workload. However, the majority did not report having difficult relationships with medical staff or with other colleagues. The effects of training and uncertainty about treatment plans on levels of job stress were not measured in this study.

Previous studies on pandemic outbreaks show that healthcare workers are always at the forefront of epidemics and risk their lives to care for patients (Simonds & Sokol, 2009). Since the outbreak of COVID-19 began, many cases occurred among frontline healthcare staff who caught the virus within health care facilities (Bandyopadhyay *et al.*, 2020), resulting in high levels of stress and anxiety (Chung *et al*, 2020). Healthcare workers in Ireland experienced high levels of COVID-19 infections. In May 2020, Ireland had the highest rate of infection from coronavirus amongst healthcare workers globally (O'Halloran, 2020). As a result, 40% of healthcare staff experienced significant psychological distress as opposed to 20% of the general population (Kelly, 2020). Findings of this study show that 34.8% of the healthcare professionals surveyed had mild levels of COVID-19 related anxiety. Previous studies found the prevalence of anxiety to range between 23.2-33% (Shechter *et al*., 2020) and stress levels ranged from 57-86% (Shechter *et al*., 2020; Lai, Ma & Wang, 2020; Coto *et al*., 2020) in healthcare staff during COVID-19. Of all the healthcare workers, nursing staff were particularly affected by COVID-19 related stress and anxiety. The present study also

found that nurses were more affected by COVID-19 related anxiety than HCAs. This may be partially explained by the broad responsibilities of nurses (Chung *et al*., 2020; Shechter *et al*., 2020). They spend more time delivering direct patient care and may have to provide emotional support for patients instead of their family who are not allowed to visit due to transmission concerns. Moreover, evidence from previous studies suggest that nurses and HCAs continue to experience a degree of psychological distress even after the pandemic has receded (Lee *et al.*, 2007; McAlonan *et al*., 2007). Therefore, these groups should be monitored on an ongoing basis so that psychological interventions could be applied in a timely manner where necessary.

This study affirmed that work stress is present among healthcare workers in Ireland. Factors such as inadequate staffing levels, increased workload, low pay rates and difficult relationships with colleagues and managers were significantly associated with higher job stress scores. The last couple of years were particularly challenging for frontline workers and over a third of healthcare workers surveyed were affected by COVID-19 related anxiety. Nevertheless, despite the challenging working conditions, the majority of participants reported high levels of job satisfaction. These findings are comparable with previous studies which also reported high levels of job stress and job satisfaction among healthcare professionals (Salam *et al*., 2014; Grunfeld *et al*., 2004; Ramirez *et al*., 1996).

Chapter 7 – Conclusion and Recommendations

7.1 Conclusion

This research aimed to investigate the predictors of job stress and job satisfaction among healthcare professionals in Ireland and examine the prevalence of COVID-19 related anxiety. Independent variables such as age, years of work experience, staffing levels, relationships with managers and supervisors were assessed to determine if they were associated with job stress and job satisfaction. The author chose to investigate these particular variables as previous research suggested that these factors were significant determines of workplace stress and satisfaction (Bruschini, Carli & Burla, 2018; Kalisch & Lee, 2012; Grunfeld *et al*., 2004; Ramirez *et al*., 1996). However, upon analysis of findings, increased workload and the impact this had on home life were also related to job stress and inadequate staffing. These findings are not surprising as Ireland was already experiencing medical staff shortages since 2008 (Independent, 2020). COVID-19 has also compounded this issue as healthcare workers became unavailable for work after contracting the virus (Bowers, 2021). Another finding which emerged from the data analyses was the high proportion of healthcare workers who felt that they were underpaid. The low pay rates of HCAs has been highlighted in the last couple of years, as they threatened to go on strike over low pay rates in 2019 (Wall, 2019). Nurses on the other hand, successfully achieved higher salaries since their strike, which also took place in 2019 (Michael, 2020). Therefore, it is unsettling to observe that nurses still feel underpaid despite being promised pay rises two years ago.

The strengths of this study include the high response rate of 86% and the fact that participants were recruited from different healthcare facilities in Ireland, giving a wider representation of healthcare workers around the country. Although some limitations were previously discussed in Chapter 5, more emerged upon analysis of the findings. This study was conducted during a global pandemic, and although just over a third of participants were affected by COVID-19 related anxiety, it is difficult to determine whether or not this impacted on the overall job stress and job satisfaction scores. This is due to the cross-sectional design of the study which only provides insight into a particular point in time. One way to attempt to overcome this downfall would be to compare these findings with similar studies prior to the pandemic. However, it would still not be possible to prove a cause-and-effect relationship between COVID-19 and overall job stress and job satisfaction in healthcare workers. As

previously mentioned in Chapter 5, the timing of this study could have impacted the results. The data was collected in March 2020, by which time there were fewer COVID-19 hospitalisations (Halpin, 2021), more supply of PPE and a large proportion of healthcare workers received at least one dose of a COVID-19 vaccine (Government of Ireland, 2021). A study by Kelly (2020), reported that 40% of healthcare workers were significantly distressed as a result of COVID-19 between March and May 2020, which is slightly higher than the figures reported in this study (34.8%). On the other hand, there is also evidence to suggest that the effects of pandemics on psychological distress could be long term (Lee *et al.*, 2007; McAlonan *et al*., 2007), in which case the timing of this study would not be an issue.

Furthermore, the lack of male participants meant that the results could not be representative of a larger population, and the non-normal distribution of data suggested that the sample size was too small (Krithikadatta, 2014). Some studies suggest that marital status (Ramirez *et al*., 1996), education level (Golubic *et al.*, 2009) and nationality (Al-Omar, 2003; Salam *et al*., 2014) may have an impact on occupational stress. Marital status, number of children and education level were controlled for. However, data was not gathered on nationality, therefore it may have affected the results.

These limitations could be addressed by performing a longitudinal study with a larger sample size. Cross-sectional studies are useful to measure the prevalence of a behaviour or a condition in a population and they are generally quick, easy and cheap to perform. Whereas, longitudinal studies observe participants at different points in time, allowing for trends to be monitored over time. Longitudinal studies can also give more insight into cause and effect relationships than cross sectional studies (Caruana, Roman, Solli, 2015). To date, there have only been two longitudinal studies conducted to estimate the impact of a global pandemic on the mental health of healthcare workers and both of them were of low methodological quality (Muller *et al*., 2020). More long-term studies are warranted to investigate how a pandemic and the working conditions during a pandemic affect healthcare workers' stress and anxiety levels at work.

Overall, findings suggested that there were significant relationships between job satisfaction, adequate staffing and good relationships between colleagues and management. While having more years of experience, feeling underpaid, having increased workloads, inadequate staffing and difficult relationships with colleagues and supervisors

were associated with higher job stress. COVID-19 was also found to impact anxiety levels in healthcare workers, with nurses reporting higher COVID-19 related anxiety and overall job stress than HCAs.

7.2 Recommendations

Findings of this study suggest that stress is present in Irish healthcare facilities. The CIPD guidelines for dealing with stress in the workplace (CIPD, 2020) advise organisations to approach stress management proactively, concentrating on prevention and early intervention, instead of taking action when the issue becomes significant or when an employee goes on sick leave. Each employer is legally obligated to ensure that, as far as is reasonably practicable, the health of employees is not at risk during the course their work (HSA, 2009). This implies that risk assessments should include an evaluation of stressors in the workplace, control measures, monitoring and periodical reviews, in consultation with employees. Resources should then be allocated to reduce or remove the stressors identified in the risk assessment.

Line managers play a central role in preventing and addressing work-related stress. In fact, a recent study showed that 37% of stress related absences in the UK were linked to heavy workloads and poor management style (CIPD, 2019). The results of this study also show a significant relationship between difficult relationships with managers and job stress. These findings suggest that managers are not receiving adequate training to identify potential sources of stress and manage people and workloads efficiently. The HSE offer free online courses through their platform 'HSEland' to help managers respond to work-related stress. Mentoring could also be implemented to assist less experienced managers develop their management style and promote healthy working habits. Research suggests that formal mentoring is beneficial in helping employees discover and develop their leader identity (Muir, 2014).

Interventions to help employees cope with stressful situations could also be implemented in the workplace. Employee Assistance Programmes that offer counselling and consulting programmes to employees were found to have positive impacts on mental health and organisations benefited widely from them (Compton & McManus, 2015; Kirk & Brown, 2016). Laya Healthcare offer EAP packages to companies for €750 per year and €14.71 per employee (Law Society of Ireland, 2021). Organisations can also encourage employees to

become physically active by arranging weekly exercise classes, offering subsidised gym memberships, holding team sports events, such as football matches, or participating in local charity runs. Regular physical activity is associated with positive outcomes for both stress reduction and overall wellbeing (Avila-Palencia *et al*., 2017). Studies show that both high intensity activities such as running and low impact activities such as yoga help to reduce occupational stress (Hackney, 2006; Lin *et al*., 2015).

Finally, mindfulness training can also be implemented to help employees cope with job stress. Mindfulness training has been successfully conducted with various populations to decrease maladaptive reactions to circumstantial stress (Birnie, Speca & Carlson, 2010). Mindfulness techniques are said to help individuals recognise thoughts, emotions, and physical sensations as they occur in situations of brewing stress. Previous research shows that an 8-week mindfulness stress reduction programme helped nurses to improve their concentration and remain calm under pressure (Cohen-Katz *et al*. 2005). Shorter programmes are also being developed to suit the busy schedules of healthcare professionals. For example, a company based in Cork offer a 6-week mindfulness programme starting from €150 per person with discounts available for groups of ten to twenty people (Mindfulness in the Workplace, 2021).

Personal Learning Statement

Writing this dissertation gave me an opportunity to develop my knowledge on occupational stress in the healthcare sector, which is of great interest to me. I currently work as a HR administrator in a private nursing home, and I'm involved in the recruitment of nurses and healthcare assistants. Working closely with employees, candidates and hiring managers, I had first had experience of hiring new staff just to see them leave a few months later due to poor relationships with peers or dissatisfaction wages, etc., leaving their colleagues with extra shifts and increased workloads and managers desperate for more staff. Hence, I decided to learn more about the factors that contribute to job stress and job satisfaction in healthcare staff.

While revising the existing literature, it became apparent that the majority of studies on work-related stress were focused on hospital workers and healthcare assistants in particular were under represented in the literature. I therefore decided to focus my study on different healthcare facilities including nurses and healthcare assistants as they make up the majority of workers in hospitals, nursing homes and home care.

Completing this dissertation has also allowed me to learn new skills such as SPSS and data analysis. It has also helped me enhance my organisation skills and Excel skills by learning new functions I never used before. The main challenge for me has been balancing a full time job with completing a part-time master's degree. If I were to repeat this research, I would start collecting surveys earlier to try and get a larger sample size that would be more representative of healthcare workers around Ireland.

Overall, this experience has made me realise that I would eventually like to be more involved in employee relations. I started working in HR as I enjoy helping others and I believe that people are the greatest asset to any organisation. Therefore, creating a positive atmosphere between employees and management would be a very rewarding role for me.

References

Al-Omar, B. A. (2003). 'Sources of work-stress among hospital staff at the Saudi MOH'. *JKAU: Economics and Administration*. 17(1), pp 3-16. Available at: https://kau.edu.sa/Files/320/Researches/51686_21821.pdf. [Accessed 18 April 2021]

Archard D., Caplan A., Connolly Mitty, W. F. & Connolly Mitty, V. (2020) 'Is it wrong to prioritise younger patients with covid-19?' *BMJ,* 369(1509). doi: 10.1136/bmj.m1509

Aslan, H., Erci, B. & Pekince, H. (2021) 'Relationship Between Compassion Fatigue in Nurses, and Work-Related Stress and the Meaning of Life'. *J Relig Health*. Doi: https://doi.org/10.1007/s10943-020-01142-0

Avila-Palencia, I., de Nazelle, A., Cole-Hunter, T., Donaire-Gonzalez, D., Jerrett, M., Rodriguez, D.A., Nieuwenhuijsen, M.J. (2017) 'The relationship between bicycle commuting and perceived stress: a cross-sectional study'. *BMJ Open* 7(6) e013542 doi: http://dx.doi.org/10.1136/bmjopen-2016-013542.

Ball, J. (2003) 'Understanding Herzberg's motivation theory'. Available at: https://www.chinaacc.com/upload/html/2013/06/26/lixingcun841e7885772f4e7f907bf6272b185c41.pdf [Accessed 22 April 2021]

Bandyopadhyay S., Baticulon R. E., Kadhum M,. *et al.* (2020) 'Infection and mortality of healthcare workers worldwide from COVID-19: a systematic review', *BMJ Global Health*, 5(e003097). Available at: https://gh.bmj.com/content/5/12/e003097 [Accessed 22 April 2021]

Beehr, T. A., Glaser, K. M., Canali, K. G., & Wallwey, D. A. (2001). 'Back to basics: Re-examination of the demand-control theory of occupational stress'. *Work and Stress*, 15(2) pp 115–130. Doi: 10.1080/02678370110067002

Berland A, Natvig GK, Gundersen D. (2008) 'Patient safety and job-related stress: a focus group study'. *Intensive Crit Care Nurs*. 24(2) pp 90-7. doi: 10.1016/j.iccn.2007.11.001.

Bhatnagar, K., & Srivastava, K. (2012). 'Job satisfaction in health-care organizations', *Industrial psychiatry journal*, 21(1), pp 75–78. Doi: 10.4103/0972-6748.110959

Birnie K., Speca M., Carlson L., E., (2010) 'Exploring self-compassion and empathy in the context of mindfulness-based stress reduction (MBSR)'. *Stress & Health: Journal of the International Society for the Investigation of Stress*, 26, pp 359--371. Doi: 10.1002/smi.1305

Bovier, P. A., & Pernegar, T. V. (2003). 'Predictors of work satisfaction among physicians', *European Journal of Public Health*, Vol. 13, pp. 299–305. Doi: 10.1093/eurpub/13.4.299

Bowers, F. (2021) 'Close contact health workers called back to work', *RTE News*, 13 January. Available at: https://www.rte.ie/news/coronavirus/2021/0113/1189371-coronavirus-ireland/ [Accessed 25 April 2021]

Brady, D. M. (2016). 'An Exploration of Nursing Assistants' Perceptions About Job Satisfaction'. *Critical Care Nursing Quarterly*, 39(4), pp 371–386. doi: 10.1097/cnq.0000000000000131

Bruschini, M., Carli, A., & Burla, F. (2018). 'Burnout and work-related stress in Italian rehabilitation professionals: A comparison of physiotherapists, speech therapists and occupational therapists'. *Work*, 59(1), pp 121–129. doi:10.3233/wor-172657

Bryman, A. (2008) *Social Research Methods*. 3rd edn. London: Oxford University Press

Burke, R. J., & Richardsen, A. M. (1993). Psychological burn out in organizations. In Golembiewski, R. T. (ed) *Handbook of Organizational Behavior*. 2nd edn. NY: Taylor & Francis, pp 327-364

Carrillo-García, C., Ríos-Rísquez, M. I., Escudero-Fernández, L., Martínez-Roche, M. E (2018) 'Factors of work-related stress in hospital nursing bureau according to the demand-control-support model', *Enfermeria Global*. 50 pp 315-324. doi: 10.6018/eglobal.17.2.277251

Caruana, E. J., Roman, M., Hernández-Sánchez, J., & Solli, P. (2015). 'Longitudinal studies', *Journal of thoracic disease*, 7(11), E537–E540. Doi:10.3978/j.issn.2072-1439.2015.10.63

Chang, E. M., Hancock, K. M., Johnson, A., Daly, J., & Jackson, D. (2005). 'Role stress in nurses: Review of related factors and strategies for moving forward'. *Nursing and Health Sciences*, 7(1) pp. 57–65. doi:10.1111/j.1442-2018.2005.00221.x

Chao, M.-C. et al. (2015) 'Workplace Stress, Job Satisfaction, Job Performance, and Turnover Intention of Health Care Workers in Rural Taiwan', *Asia Pacific Journal of Public Health*, 27(2), pp. NP1827–NP1836. doi: 10.1177/1010539513506604.

Chappell, N. L., & Novak, M. (1992). T'he Role of Support in Alleviating Stress Among Nursing Assistants', *The Gerontologist*, 32(3), 351–359. doi:10.1093/geront/32.3.351

Chaudhury, S., & Banerjee, A. (2004). 'Correlates of Job Satisfaction in Medical Officers', *Medical journal, Armed Forces India*, 60(4), pp 329–332. Doi: 10.1016/S0377-1237(04)80004-2

Choi, B. C., & Pak, A. W. (2005). 'A catalog of biases in questionnaires', *Preventing chronic disease,* 2(1), A13. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1323316/ [Accessed 2 May 2021]

Chou, L., Li, C., Hu, S. C. (2014) 'Job stress and burnout in hospital employees: comparisons of different medical professions in a regional hospital in Taiwan', *BMJ Open*. 4:e004185. doi: 10.1136/bmjopen-2013-004185

Chung, S., Kim, H.J., Ahn, M.H., Yeo, S., Lee J., Kim K., Kang S., Suh S., & Shin Y.W. (2020). 'Development of the Stress and Anxiety to Viral Epidemics-9 (SAVE-9) scale for assessing work- related stress and anxiety in healthcare workers in response to COVID-19.' http://doi.org/10.31234/osf.io/a52b4

CIPD (2019) 'Rise in stress at work linked to poor management, new research finds'. Available at: https://www.cipd.co.uk/about/media/press/rise-stress-poor-management [Accessed 4 May 2021]

CIPD (2020) 'Stress in the workplace'. Available at: https://www.cipd.co.uk/knowledge/culture/well-being/stress-factsheet [Accessed 8th December 2020]

CIPD (2021) Health and wellbeing at work survey 2021. London: Chartered Institute of Personnel and Development.

Clarke, V. (2019) 'More nurses prepared to work in Ireland due of improved pay', *Irish Examiner*, 01 July. Available at: https://www.irishexaminer.com/news/arid-30933996.html [Accessed 6 December 2020]

Cohen-Katz J., Wiley S., D., Capuano T., Baker D., M., Kimmel S., Shapiro S., (2005). 'The effects of mindfulness-based stress reduction on nurse stress and burnout: Part II. A quantitative and qualitative study.' *Holistic Nursing Practice*, 19, pp 26-35. Doi: 10.1097/00004650-200501000-00008

Compton, R. L. & McManus J. G. (2015) 'Employee Assistance Programs in Australia: Evaluating Success', *Journal of Workplace Behavioral Health*, 30(1-2) pp 32-34. Doi: 10.1080/15555240.2015.998971

Cooper, C. L., Rout, U. & Faragher, B. (1989) 'Mental health, job satisfaction, and job stress among general practitioners', *Br Med J* 71989(298) pp. 366-70 Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1835734/pdf/bmj00218-0032.pdf [Accessed 17 March 2021]

Cooper, C. L., Dewe, P., & O'Driscoll, M. (2001). *Organizational Stress: A review and critique of theory, research, and applications*. Thousand Oaks: Sage.

Cooper, S. L., Carleton H. L., Chamberlain S. A., Cummings G. G., Bambrick W., Estabrooks C. A. (2016) 'Burnout in the nursing home health care aide: A systematic review', *Burnout Research*, 3(3) pp 76 -78. Doi: 10.1016/j.burn.2016.06.003

Coto J., Restrepo A., Cejas I., Prentiss S. (2020) 'The impact of COVID-19 on allied health professions', *PLoS ONE*, 15: e0241328. Doi: 10.1371/journal.pone.0241328

Cox, T. & Ferguson, E. (1994). 'Measurement of the subjective work environment', *Work and Stress*, 8, pp 98-109. Doi: 10.1080/02678379408259983

Daniels, K., Beesley, N., Cheyne, A., & Wimalasiri, V. (2008). 'Coping processes linking the demands-control-support model, affect and risky decisions at work'. *Human Relations*, 61(6), pp 845–874. Doi: 10.1177/0018726708093543

Dohrenwend, B. (2000). 'The Role of Adversity and Stress in Psychopathology: Some Evidence and Its Implications for Theory and Research', *Journal of Health and Social Behavio*r, 41(1), pp 1-19. doi:10.2307/2676357

Donnelly, T. (2012) 'An ever-increasing workload is causing burnout and Exhaustion'. *Nurs Stand* 26(25) pp 12–13. doi: 10.7748/ns2012.02.26.25.12.p7620.

Donnelly, T. (2014) 'Stress among nurses working in an acute hospital in Ireland', *British Journal of Nursing*.23(13) pp 746-750. Doi: 10.12968/bjon.2014.23.13.746

Drennan, J., Hegarty J., Savage, E., Brady, N., Prendergast, C., Howson, V. (2018) 'Provision of the Evidence to Inform the Future Education, Role and Function of Health Care Assistants in Ireland', Report for Health Service Executive, School of Nursing and Midwifery, UCC. Available at: https://www.hse.ie/eng/staff/resources/hrstrategiesreports/health-care-assistant-literature-review-2018.pdf [Accessed 25 April 2021]

Dunn, L. A., Rout, U., Carson, J., & Ritter, S. A. (1994). 'Occupational stress amongst care staff working in nursing homes: an empirical investigation'. *Journal of clinical nursing*, *3*(3), pp 177–183. https://doi.org/10.1111/j.1365-2702.1994.tb00383.x

Dunn, S., Wilson, B. & Esterman, A. (2005) 'Perceptions of working as a nurse in an acute care setting', *Journal of Nursing Management,* 13 (1), pp 22–31. doi: 10.1111/j.1365-2834.2004.00452.x.

Embriaco, N., Papazian, L., Kentish-Barnes, N., Pochard, F. & Azoulay, E (2007) 'Burnout syndrome among critical care healthcare workers', *Current Opinion in Critical Care*. 13 pp 482–488. doi: 10.1097/MCC.0b013e3282efd28a

Gilgun, JF 1992, Definitions, methods, and methodologies in qualitative family research. in JF Gilgun, G Handel & K Daly (eds), Qualitative methods in family research. Sage, Newbury Park, CA, pp. 22-41.

Golubic, R., Milosevic, M., Knezevic, B., & Mustajbegovic, J. (2009). 'Work-related stress, education and work ability among hospital nurses. *Journal of advanced nursing*', 65(10), pp 2056–2066. https://doi.org/10.1111/j.1365-2648.2009.05057.x

Government of Ireland (2021) 'Vaccinations'. Available at: https://covid19ireland-geohive.hub.arcgis.com/pages/vaccinations [Accessed 18 March 2021]

Graham, S. (2020) 'Nursing chief warns new laws urgently needed around safe staffing levels following damning audit report', *The Irish News*, 1 August. Available at: https://www.irishnews.com/news/northernirelandnews/2020/08/01/news/nursing-chief-warns-new-laws-urgently-needed-around-safe-staffing-levels-following-damning-audit-report-2023128/ [Accessed 21 April 2021]

Gray-Toft P., Anderson J. G. (1981) 'Stress among hospital nursing staff: its causes and effects', *Soc Sci Med A*. 15(5), pp 639–47. doi: 10.1016/0271-7123(81)90087-0.

Green , S. B.(1991) 'How Many Subjects Does It Take To Do A Regression Analysis', *Multivariate Behavioral Research*, 26(3) pp. 499-510. doi: 10.1207/s15327906mbr2603_7

Grunfeld, E., Zitzelsberger, L., Coristine, M., Whelan, T. J., Aspelund, F., Evans, W. K. (2004) 'Job stress and job satisfaction of cancer care workers', *Psycho-Oncology* 14 pp. 61–69. doi: 10.1002/pon.820

Gunnar, M., & Quevedo, K. (2007). 'The neurobiology of stress and development', *Annual review of psychology*, 58, pp 145–173. Doi: 10.1146/annurev.psych.58.110405.085605

Hackney, A.C. (2006) 'Stress and the neuroendocrine system: the role of exercise as a stressor and modifier of stress'. *Expert Rev. Endocrinol. Metab*. 1(6) pp 783–792. doi: http://dx.doi.org/10.1586/17446651.1.6.783.

Hakanen, J. J., Perhoniemi, R., & Toppinen-Tanner, S. (2008). 'Positive gain spirals at work: From job resources to work engagement, personal initiative and work-unit innovativeness'. *Journal of Vocational Behavior*, 73(1), pp 78–91. doi: 10.1016/j.jvb.2008.01.003

Halbesleben, J. R. B. (2006). 'Sources of social support and burnout: A meta-analytic test of the conservation of resources model'. *Journal of Applied Psychology*, 91(5), pp 1134–1145. Doi: 10.1037/0021-9010.91.5.1134

Halpin, H (2021) 'Number of hospitalised Covid-19 patients falls to lowest number since late December', *The Journal*, 5 March. Available at: https://www.thejournal.ie/coronavirus-hospital-figures-ireland-5372734-Mar2021/ [Accessed 2 May 2021]

Heath, J., Johanson, W., & Blake, N. (2004). 'Healthy work environments: a validation of the literature', *The Journal of nursing administration*, 34(11), pp 524–530. Doi: 10.1097/00005110-200411000-00009

Ho, H. C., Chang, S. H., Tsao J. Y., et al. (2010) 'The relationship between job stress and physical-mental health among hospital staff'. *Chin J Occup Med*, 17 pp 239–252.

Hobfoll, S. E. (1989). 'Conservation of resources: A new attempt at conceptualizing stress', *American Psychologist*, 44(3), 513–524. Doi: 10.1037/0003-066X.44.3.513

Hobfoll, S. E., & Shirom, A. (2001). 'Conservation of resources theory: Applications to stress and management in the workplace.' In R. T. Golembiewski (Ed.), *Handbook of organizational behavior* (p. 57–80). Marcel Dekker.

Houses of the Oireachtas (2020) Interim Report on Covid-19 in Nursing Homes Special Committee on Covid-19 Response. Available at: https://data.oireachtas.ie/ie/oireachtas/committee/dail/33/special_committee_on_covid_19_response/reports/2020/2020-07-31_interim-report-on-covid-19-in-nursing-homes_en.pdf [Accessed 20 February 2020]

HSA (2009) 'Work-related stress a guide for employers'. Available at: https://www.hsa.ie/eng/Publications_and_Forms/Publications/Occupational_Health/Work_Related_Stress.pdf [Accessed 27 April 2021]

Independent (2020) 'Why medical staff shortages have been a chronic problem', *Independent*, 4 July. Available at: https://www.independent.ie/irish-news/why-medical-staff-shortages-have-been-a-chronic-problem-39336290.html [Accessed 25 April 2021]

Islam, M., Baker, C., Huxley, P., Russell, I.T., Dennis, M.S. (2017) 'The nature, characteristics and associations of care home staff stress and wellbeing: a national survey'. BMC Nursing. 16 (22): pp.1-10. Doi: https://doi.org/10.1186/s12912-017-0216-4

Jia M. & Shoham M. (2012) 'Communication Motives, Satisfaction, and Social Support in the Workplace: Are Supervisors Effective Support Sources in Employee Networks?', *45th Hawaii International Conference on System Sciences*, Maui, HI, USA. pp. 4407-4416, doi: 10.1109/HICSS.2012.16

Jones, J.R., Hodgson, J.T., Clegg, T.A. & Elliot, R.C. (1998). *Self-reported Work-related Illness in 1995*. Sudbury: HSE Books

Kalisch, B., & Lee, K. H. (2014). 'Staffing and job satisfaction: nurses and nursing assistants', *Journal of nursing management*, 22(4), pp 465–471. Doi: 10.1111/jonm.12012

Karasek, R. A. (1979). 'Job demands, job decision latitude and mental strain: Implications for job redesign'. *Administrative Science Quarterly*, 24, pp 285–308. Doi: 10.2307/2392498

Kelly, B. D. (2020) 'Impact of Covid-19 on Mental Health in Ireland: Evidence to Date', *Irish Medical Journal*, 113(10), pp 214. Available at: http://imj.ie/wp-content/uploads/2020/12/Impact-of-Covid-19-on-Mental-Health-in-Ireland-Evidence-to-Date.pdf [Accessed 23 April 2021]

Kennelly, B., O'Callaghan, M., Coughlan, D., Cullinan, J., Doherty, E., Glynn, L., Moloney, E., & Queally, M. (2020). 'The COVID-19 pandemic in Ireland: An overview of the health service and economic policy response', *Health policy and technology*, *9*(4), pp 419–429. https://doi.org/10.1016/j.hlpt.2020.08.021

Khamlub, S., Harun-Or-Rashid, M., Sarker, M. A., Hirosawa, T., Outavong, P., & Sakamoto, J. (2013). 'Job satisfaction of health-care workers at health centers in Vientiane Capital and Bolikhamsai Province, Lao PDR'. *Nagoya journal of medical science*, 75(3-4), pp 233–241. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4345678/ [Accessed 19 April 2021]

King, D. W., King, L. A., Foy, D. W., Keane, T. M., & Fairbank, J. A. (1999). 'Posttraumatic stress disorder in a national sample of female and male Vietnam veterans: risk factors, war-zone stressors, and resilience-recovery variables.' *Journal of abnormal psychology*, 108(1), pp 164–170. doi: 10.1037//0021-843x.108.1.164

Kirk A. K. & Brown, D. F. 'Employee assistance programs: a review of the management of stress and wellbeing through workplace counselling and consulting', *Australian Psychologist*, 38(2) pp 138-143. Doi: 10.1080/00050060310001707137

Kivimaki, M., Kalimo, R., & Lindstrom, K. (1994). Contributors to satisfaction with management in hospital wards. *Journal of Nursing Management*, 2, pp 229–234. Doi: 10.1111/j.1365-2834.1994.tb00161.x

Krithikadatta J. (2014). Normal distribution. Journal of conservative dentistry : JCD, 17(1), 96–97. https://doi.org/10.4103/0972-0707.124171

Lai J., Ma S., Wang Y. (2020) 'Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019', *JAMA Netw Open*, 3(3). doi: 10.1001/jamanetworkopen.2020.3976.

Lapane K. L. & Hughes C. M. (2007) 'Considering the Employee Point of View: Perceptions of Job Satisfaction and Stress Among Nursing Staff in Nursing Homes', *Journal of the American Medical Directors Association*, 8(1) pp 8-13. Doi: 10.1016/j.jamda.2006.05.010

Law Society of Ireland (2021) 'Workplace practices'. Available at: https://www.lawsociety.ie/Solicitors/Representation/wellbeing-hub/employment-practices/eap/ [Accessed 4 May 2021]

Lazarus R. S., Folkman S. (1984). *Stress, Appraisal and Coping.* New York: Springer

Lazarus, R. S. (1991) 'Progress on a cognitive-motivational-relational theory of emotion,' *American Psychologist*, 46(8), 819–834. https:// https://doi.org/10.1037/0003-066X.46.8.819

Lee AM, Wong JG, McAlonan GM, Cheung V, Cheung C, Sham PC, et al. (2007) 'Stress and psychological distress among SARS survivors 1 year after the outbreak', *Can J Psychiat*. 52, pp 233–40. doi: 10.1177/0706743707052 00405

Lephalala, R. P., Ehlers, V. J., & Oosthuizen, M. J. (2008). 'Factors influencing nurses' job satisfaction in selected private hospitals in England'. *Curationis*, 31(3), pp 60-69. Available at: http://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S2223-62792008000300008 [Accessed 21 April 2021]

Lima, V (2021) 'The Pandemic One Year on: Trends and Statistics Between Three Waves of the COVID-19 Pandemic in Ireland', *Public Policy*, 10 March. Available at: https://publicpolicy.ie/papers/the-pandemic-one-year-on-trends-and-statistics-between-three-waves-of-the-covid-19-pandemic-in-ireland/ [Accessed 2 May 2021]

Lin, S.-L., Huang, C.-Y., Shiu, S.-P., Yeh, S.-H. (2015) 'Effects of yoga on stress, stress adaption, and heart rate variability among mental health professionals—a randomized controlled trial'. *Worldviews Evid. Nurs.* 12(4) pp 236–245. doi: http://dx.doi.org/10.1111/wvn.12097

Longest B. J. (1990) *Management Practices for the Health Professional.* 4th Ed. Norwalk: Appleton and Lange.

Machón M, Mateo-Abad M, Clerencia-Sierra M et al (2020) 'Multimorbidity and functional status in older people: a cluster analysis', *Eur Geriatr Med* 11 pp. 321–332. Doi: 10.1007/s41999-020-00291-5

Maslach, C. (1982) *Burnout: The cost of caring.* Englewood Cliffs, NJ: Prentice-Hall.

Maslow A. (1970) *Motivation and personality*. 2nd Ed. New York: Harper and Row

Mater Private Healthcare Group (2020) ‘‘Healthy Working’ report shows how diet, exercise, and work-life balance affect Irish workers’ physical and mental health’. Available at: https://www.materprivate.ie/news-events/news/HealthyWorkingreport/ [Accessed 4 May 2021]

Mazzola, J., J., Schonfeld, I., S. & Spector, P., E. (2001) ‘What qualitative research has taught us about occupational stress’, *Stress and Health*, 27 pp 93-110. DOI: 10.1002/smi.1386

McAlonan GM, Lee AM, Cheung V, Cheung C, Tsang KWT, Sham PC, et al. (2007) ‘Immediate and sustained psychological impact of an emerging infectious disease outbreak on health care workers’, *Can J Psychiat Rev*. 52 pp 241– 7. doi: 10.1177/070674370705200406

McMullan C, Brown GD, O'Sullivan D. (2016) ‘Preparing to respond: Irish nurses' perceptions of preparedness for an influenza pandemic’. *International emergency nursing*, 26:3-7, Epub. Doi: 10.1016/j.ienj.2015.10.004

McVicar, A. (2003) ‘Workplace stress in nursing: a literature review’. *J. Adv. Nurs*, 44 (6), pp 633–642. doi: http://dx.doi.org/10.1046/j.0309-2402.2003.02853.x.

Mészáros V., Cserháti Z., Oláh A., Forintos, D. P., Adam, S., (2013) ‘Coping with work-related stress in health care professionals: strategies for the prevention of burnout and depression’. *Orv Hetil*, 24(154) pp 449-54. doi: 10.1556/OH.2013.29572

Michael, N. (2020) ‘Tens of thousands’ of nurses could be owed money’, *Irish Examiner*, 1 May. Available at: https://www.irishexaminer.com/news/arid-30997058.html [Accessed 25 April 2021]

Michal, J. P. & Ecarnot, F. (2020) ‘The shortage of skilled workers in Europe: its impact on geriatric medicine’ *European Geriatric Medicine*. 11, pp 345–347. Available at: https://link.springer.com/article/10.1007/s41999-020-00323-0 [Accessed 21 March 2021]

Miley, I. (2018) ‘Work-related stress in Ireland doubled over five years – ESRI’, *RTE News*, 27 November. Available at: https://www.rte.ie/news/ireland/2018/1127/1013566-workplace-stress/ [Accessed 4 May 2021]

Mindfulness in the Workplace (2021) ‘Mindfulness in the Workplace: Resilience, Well-being & Performance’. Available at: http://mindfulmatters.ie/index.php/mindfulness-in-the-workplace-course/ [Accessed 4 May 2021]

Monroe, S. M., & Roberts, J. E. (1990). 'Conceptualizing and measuring life stress: Problems, principles, procedures, progress', *Stress Medicine*, 6(3), 209–216. https://doi.org/10.1002/smi.2460060306

Moyle W., Skinner J., Rowe G, Gork C. (2003) 'Views of job satisfaction and dissatisfaction in Australian long-term care'. *J Clin Nurs*, 12 pp 168 –176. doi: 10.1046/j.1365-2702.2003.00732.x.

Muir, D. (2014) 'Mentoring and Leader Identity Development: A Case Study', Human Resource Development Quarterly, 25(3) pp. 349-379. Doi: 10.1002/hrdq.21194

Muller, A. E., Hafstad,E. V., Himmels, J. P. W., Smedslund, G., Flottorp, S., Stensland, S. Ø., Stroobants, S., Van de Velde, S., Vist, G. E. (2020) 'The mental health impact of the covid-19 pandemic on healthcare workers, and interventions to help them: A rapid systematic review', *Psychiatry Research*, 293 (113441). Doi: 10.1016/j.psychres.2020.113441.

Murray, S. (2020) 'The HSE spent nearly €1 million a day on agency staff last year', *The Journal*, 2 February. Available at: https://www.thejournal.ie/agency-staff-hse-2-4985888-Feb2020/ [Accessed 22 April 2021]

Narayanan, Lakshmi, Shanker Menon, and Paul E. Spector (1999), "Stress in the Workplace: A Comparison of Gender and Occupations," *Journal of Organizational Behavior*, 20 (1), pp 63–73. Doi: 10.1002/(SICI)1099-1379(199901)20:1<63::AID-JOB873>3.0.CO;2-J

Nunnally, J.C. (1978). *Psychometric theory*. 2nd edn. New York: McGraw-Hill.

Ochieng P. A. (2009) 'An analysis of the strengths and limitation of qualitative and quantitative research paradigms', *problems of education in the 21st Century*, 13 pp 13-18. Available at: http://www.scientiasocialis.lt/pec/files/pdf/Atieno_Vol.13.pdf [Accessed 4 May 2021]

OECD/European Observatory on Health Systems and Policies (2019), 'Ireland: Country Health Profile 2019', State of Health in the EU, *OECD Publishing*, Paris/European Observatory on Health Systems and Policies, Brussels.

O'Halloran, M. (2020) 'Ireland's health workers have world's highest rate of Covid-19, committee hears', *Irish Times,* 23 June. Available at: https://www.irishtimes.com/news/politics/ireland-s-health-workers-have-world-s-highest-rate-of-covid-19-committee-hears-1.4286233 [Accessed 24 April 2021]

Ogresta, Jelena & Silvia, Rusac & Skokandić, Lea. (2008). 'Relation Between Burnout Syndrome and Job Satisfaction Among Mental Health Workers'. *Croatian medical journal*. 49 pp 364-74. Doi: 10.3325/cmj.2008.3.364.

Panatik, S. A., O'Driscoll, M. P., & Anderson, M. H. (2011). 'Job demands and employee work-related psychological responses among Malaysian technical workers: The moderating effects of self-efficacy'. Work and Stress, 25(4), pp 355–371. Doi: 10.1080/02678373.2011.634282

Pappa, S., Ntella,V., Giannakas, T., Giannakoulis, V., G., Papoutsi, E., Katsaouno P.,(2020). 'Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis', *Brain, Behavior, and Immunity*, 88, pp 901-907. Doi: 10.1016/j.bbi.2020.05.026.

Parent-Thirion, A., Isabella, B., Cabrita, J., Vargas, O., Vermeylen, G., Wilczynska, A., Wilkens, M. (2017) *Sixth European Working Conditions Survey*; Eurofound: Dublin, Germany. Available at: https://www.eurofound.europa.eu/publications/report/2016/working-conditions/sixth-european-working-conditions-survey-overview-report [Accessed 28 November 2020]

Phillips, A. W., Reddy, S., & Durning, S. J. (2015). 'Improving response rates and evaluating nonresponse bias in surveys: AMEE Guide No. 102', *Medical Teacher*, 38(3), pp 217–228. doi:10.3109/0142159x.2015.1105945

Pisljar, T., van der Lippe, T., den Dulk, L. (2011) 'Health among hospital employees in Europe: A cross-national study of the impact of work stress and work control', *Soc. Sci. Med. 72*, pp 899–906. DOI: 10.1016/j.socscimed.2010.12.017

Puteri, L., A. & Syaebani, M., I. (2018) 'Employees Work Stress Level in the Hospital', *international Research Journal of Business Studies*, 11(3), pp 231 243. Doi: 10.21632/irjbs.11.3.231-243

Potter, P., Deshields, T., Divanbeigi, J., Berger, J., Cipriano, D., Norris, L. & Olsen, S. (2010) 'ompassion Fatigue and Burnout: Prevalence Among Oncology Nurses', *Clinical Journal of Oncology Nursing.* 14(5) pp 56-62. Doi: 10.1188/10.CJON.E56-E62

Ramirez, A. J., Graham, J., Richards, M. A., Cull, A. & Gregory W. M. (1996) 'Mental health of hospital consultants: the effects of stress and satisfaction at work', *Lancet* 347 pp 724-28. doi: 10.1016/s0140-6736(96)90077-x

Razavi, T. (2001) 'Self-report measures: an overview of concerns and limitations of questionnaire use in occupational stress research' (Discussion Papers in Accounting and Management Science, 01-175) Southampton, UK. University of Southampton 23pp. Available at: https://eprints.soton.ac.uk/3571_2/1/01-175.pdf [Accessed 21 April 2021]

Rosales R., A., Labrague L., J. and Rosales G., L., (2012) 'Nurses job satisfaction and burnout: Is there a connection', *Int J Adv Nsg stud*, 2(1) pp 1-10. Available at: https://www.sciencepubco.com/index.php/IJANS/article/view/583 [Accessed 2 February 2021]

Russell, H., Maître, B., Watson, D. & Fahey, E. (2019) 'Job Stress and Working Conditions Ireland in Comparative Perspective'. Available at: https://www.hsa.ie/eng/publications_and_forms/publications/latest_publications/job_stress_and_working_conditions_-_plain_english_version.pdf [Accessed 1 February 2021]

Salam, A., Jorrisen S. L., Niaz, K., Al Qarni, A. M. A. (2014) 'Job stress and job satisfaction among health care professionals', *European Scientific Journal*. 10(32) pp. 156-173. Available at: https://core.ac.uk/download/pdf/236417895.pdf [Accessed 17 March 2021]

Salanova, M., Schaufeli, W. B., Xanthopoulou, D. & Bakker A. B. (2017) 'The gain spiral of resources and work engagement: Sustaining a positive work-life', *Gain Spiral of Engagement* pp 118-131. Available at: http://www.want.uji.es/wp-content/uploads/2017/10/2010_Salanova-Scaufeli-Xanthopoulou-Bakker-The-Gain-Spiral-of-resources-and-work-....-.pdf [Accessed 2 May 2021]

Saunders, M., Lewis, P. & Thornhill, A. (2007) *Research Methods for Business Students.* 4th Edn. Edinburgh: Pearson Education Limited

Sauter, S. L., Murphy, L. R., & Hurrell, J. J. (1990). 'Prevention of work-related psychological disorders: A national strategy proposed by the National Institute for Occupational Safety and Health (NIOSH)'. *American Psychologist*, 45(10), 1146–1158. Doi: 10.1037/0003-066X.45.10.1146

Setia M. S. (2016). 'Methodology Series Module 3: Cross-sectional Studies', *Indian journal of dermatology*, 61(3), pp 261–264. Doi: 10.4103/0019-5154.182410

Shechter, A., Diaz, F., Moise, N., Anstey, D. E., Ye, S., Agarwal, S., Birk, J. L., Brodie, D., Cannone, D. E., Chang, B., Claassen, J., Cornelius, T., Derby, L., Dong, M., Givens, R. C., Hochman, B., Homma, S., Kronish, I. M., Lee, S., Manzano, W., … Abdalla, M. (2020). 'Psychological distress, coping behaviors, and preferences for support among New York healthcare workers during the COVID-19 pandemic'. *General hospital psychiatry*, 66, pp 1–8. Doi: 10.1016/j.genhosppsych.2020.06.007

Simonds A., K. & Sokol D., K. (2009) 'Lives on the line? Ethics and practicalities of duty of care in pandemics and disasters', *Eur Respir J*, 34, pp 303–309. Doi: 10.1183/09031936.00041609

Stansfeld, S., Candy, B. (2006) 'Psychosocial work environment and mental health—a meta-analytic review'. *Scand. J. Work Environ. Health,* 32 (6), pp 443–462. doi: http://dx.doi.org/10.5271/sjweh.1050.

Sveinsdottir, H., Biering, P. & Ramel A. (2006) 'Occupational stress, job satisfaction, and working environment among Icelandic nurses: a cross-sectional questionnaire survey', *International Journal of Nursing Studies*. 43(7) pp 875-889. Doi: 10.1016/j.ijnurstu.2005.11.002

Taylor, C. J. (2012) *Gender, work and psychological distress in hospital consultants*. Ph.D. thesis. London: University College London. Available at: https://discovery.ucl.ac.uk/id/eprint/1364661/4/1364661_Cath%20Taylor%20PhD%20Thesis%20Final%20Post-Viva%20E-version%20with%20Copyright%20details.pdf [Accessed 17 March 2021]

Terry, D. (1991) 'Coping resources and situational appraisals as predictors of coping behavior', *Personality and Individual Differences*, 12(10) pp 1031-1047. Doi: 10.1016/0191-8869(91)90033-8

The Irish Times (2018) 'The Irish Times view on health services: allaying public concern' *Irish Times*, 8 January. Available at: https://www.irishtimes.com/opinion/editorial/the-irish-times-view-on-health-services-allaying-public-concern-1.3750137 [Accessed 20 February 2021]

Wall, M. (2016). *The Irish Times: Nurses back industrial action over working conditions.* Available at: http://www.irishtimes.com/news/health/nurses-back-industrial-action- over-working-conditions-1.2907530 [Accessed 6 December 2020]

Wall, M. (2019) 'Thousands of healthcare assistants, chefs and support staff likely to back strike', *Irish Times*, 16 May. Available at: https://www.irishtimes.com/news/ireland/irish-news/thousands-of-healthcare-assistants-chefs-and-support-staff-likely-to-back-strike-1.3894735 [Accessed 25 April 2021]

Wall, T., Jackson, P., Mullarkey, S., & Parker, S. (1996). The demands-control model of job strain: A more specific test. *Journal of Occupational and Organizational Psychology*, 69 pp 153–166. Doi: 10.1111/j.2044-8325.1996.tb00607.x

Watson L. M. (2009). Leadership's influence on job satisfaction. Radiologic technology, 80(4), 297–308. PMID: 19293118

Weinberg, A, and Creed, F. (2000) "Stress and psychiatric disorder in healthcare professionals and hospital staff", *The Lancet*. 12; 355(9203), pp 533-7. doi: 10.1016/S0140-6736(99)07366-3.

Weiner, H. (1992). The John D. and Catherine T. MacArthur Foundation series on mental health and development. *Perturbing the organism: The biology of stressful experience*. Chicago: University of Chicago Press.

WHO (2019) Burn-out an "occupational phenomenon": International Classification of Diseases. Available at: https://www.who.int/news/item/28-05-2019-burn-out-an-occupational-phenomenon-international-classification-of-diseases [Accessed 6 February 2021]

Wong, C. A., Spence Laschinger, H. K., & Cummings, G. G. (2010). 'Authentic leadership and nurses' voice behaviour and perceptions of care quality', *Journal of nursing management*, 18(8), pp 889–900. Doi: 10.1111/j.1365-2834.2010.01113.x

Wu, K.K., Chan, S.K. & Ma, T.M. (2005). 'Posttraumatic stress after SARS.' *Emerg. Infect. Dis*. 11(8) pp. 1297–1300. Available at: https://wwwnc.cdc.gov/eid/article/11/8/04-1083_article [Accessed 8 December 2020]

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). 'Work engagement and financial returns: A diary study on the role of job and personal resources', *Journal of Occupational and Organizational Psychology*, 82(1), 183–200. doi: 10.1348/096317908X28563

Zangaro GA, Soeken KL. (2007) 'A meta-analysis of studies of nurses' job satisfaction'. *Res Nurs Health,* 30(4):445-58. doi: 10.1002/nur.20202.

Appendices

Work-related stress survey

Dear Participant,

I invite you to participate in a research study investigating the prevalence of stress and job satisfaction among healthcare professionals in Ireland during Covid-19. This research is being conducted by a master's student at the National College of Ireland, studying Human Resource Management. The purpose of the research is to investigate the relationship between job stress, job satisfaction and demographic factors (such as age, gender, years of work experience, etc.) within the healthcare sector. The effects of Covid-19 on stress and anxiety in healthcare professionals will also be examined.

- What information will be collected?
The following questionnaire will be divided into 4 sections:

Section 1 will ask you questions on demographics (age, gender, marital status, years of work experience)
Section 2 will focus on job satisfaction (your professional experience, relationships with colleagues, supervisors, patients and relatives, your working conditions)
Section 3 will have questions on job stress (your work-life balance, volume of work, organisational support)
Section 4 will be related to Covid-19 related stress and anxiety

- Confidentiality and anonymity:
Your participation in this research project is completely voluntary. Your responses will remain confidential and anonymous.

- How will data be stored and collected?
To ensure confidentiality, no identifying data will be collected such as your name, email or IP address. No one other than the researcher will have access to data collected in the questionnaire. You may withdraw from this survey at any time until the point of data submission. Once the survey is submitted, it will no longer be possible to identify your data in order to remove it. All data will be stored on a password-protected file on google drive until the exam board confirms the result of the Researcher's degree. Afterwards the data will be deleted.

- What are the benefits/risks of participating in this study?
This study aims to contribute to the body of research on job stress and job satisfaction in healthcare professionals in the work environment. Participants will not will not gain any benefits directly by participating in this study. The survey will include questions about job stress and job anxiety, and Covid 19 related stress and anxiety. If you find any of the questions upsetting or if you are uncomfortable to continue with the survey, you can leave the survey page at any stage up until the submission of your answers.

If you agree to participate in this research, please answer all questions on the questionnaire. It should take approximately 5-10 minutes to complete.

If you have any questions about this research project, please email me at: x18189636@student.ncirl.ie.

Alternatively, please contact my supervisor Dr Conor Nolan: conor.nolan@ncirl.ie

Thank you for your assistance in this important investigation.

Best Wishes,

Maria Ramon.

Electronic consent:

Filling out the from below indicates that:

- You have read the above information
- You voluntarily agree to participate
- You confirm that you are at least 18 years of age

* Required

1. I have read and agreed to the above *

- ◯ Yes
- ◯ No

Section 1: Participant Demographics

2. 1. Please state your gender below: *

- ◯ Male
- ◯ Female
- ◯ Prefer not to say
- ◯ Other: _____

3. 2. What is your profession? *

- [ ] Nurse
- [ ] Healthcare Assistant
- [ ] Other Healthcare Professional

4. 3 What establishment are you currently working in? *

- [ ] Hospital
- [ ] Nursing home
- [ ] Home care
- [ ] Other: _____

5. 4. How many years have you been working in healthcare? *

_____

6. 5. Please state your age *

_____

7. 6. Please state your marital status *

- [ ] Married/Civil partnership
- [ ] Single
- [ ] Divorced
- [ ] Separated
- [ ] Cohabiting
- [ ] Widowed

8. 7. What is your education level? *

- [ ] Primary school level
- [ ] Secondary school level
- [ ] Diploma level
- [ ] Degree level
- [ ] Postgraduate level
- [ ] Doctorate level

9. 8. How many children do you have? *

_____

Section 2: Job Satisfaction

To what extent have the following factors contributed to the satisfaction you have derived from your job in the past few months?

10. 1. Having good relationships with patients *

- [ ] Not at all
- [ ] A little bit
- [ ] Quite a bit
- [ ] A lot

11. 2. Having good relationships with other staff members *

- [ ] Not at all
- [ ] A little bit
- [ ] Quite a bit
- [ ] A lot

12. 3. Having variety in your job *

- [ ] Not at all
- [ ] A little bit
- [ ] Quite a bit
- [ ] A lot

13. 4. Being perceived to do the job well by your colleagues *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

14. 5. Deriving intellectual stimulation from your work *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

15. 6. Feeling you deal well with relatives *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

16. 7. Having a high level of responsibility *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

17. 8. Having a high level of autonomy *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

18. 9. Feeling your professional experience is used *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

19. 10. Feeling you have high level of job security *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

20. 11. Having opportunities for professional learning (developing professional/management/research skills) *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

21. 12. Deriving intellectual stimulation from teaching/training others *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

22. 13. Being able to bring about positive change in your unit/institution *

- Not at all
- A little bit
- Quite a bit
- A lot

23. 14. Being involved in activities that contribute to the development of your profession *

- Not at all
- A little bit
- Quite a bit
- A lot

24. 15. Feeling you have adequate facilities to do a good job *

- Not at all
- A little bit
- Quite a bit
- A lot

25. 16. Feeling the institution has the staff necessary to do a good job *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

26. 17. Feeling the institution has adequate financial resources to do a good job *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

Section 3: Job Stress

To what extent have the following factors contributed to any stress you have experienced in your job in the past few months?

27. 1. Having conflicting demands on your time (e.g. patient care/management/research/othe professional responsibilities) *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

28. 2. Having too great an overall volume of work *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

29. 3. Disruption of your home life through spending long hours at work *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

30. 4. Having inadequate staffing to do your job properly *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

31. 5. Being involved with the emotional distress of patients *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

32. 6. Keeping up to date with current clinical and research practices or job skills *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

33. 7. Being involved with the physical suffering of patients *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

34. 8. Having inadequate facilities (e.g. equipment, space) to do your job properly *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

35. 9. Feeling under pressure to meet deadlines *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

36. 10. Having to deal with distressed, angry, or blaming relatives *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

37. 11. Feeling you have insufficient input into the management of your unit or institution *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

38. 12. Disruption of your home life as a result of taking work home *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

39. 13. Disruption of your home life as a result of being on call *

- ◯ Not at all
- ◯ A little bit
- ◯ Quite a bit
- ◯ A lot

40. 14. Feeling you are poorly paid for the job you do *

- Not at all
- A little bit
- Quite a bit
- A lot

41. 15. Having a conflict of your responsibilities (e.g. clinical versus managerial; clinical versus research) *

- Not at all
- A little bit
- Quite a bit
- A lot

42. 16. Having to take on more managerial responsibilities *

- Not at all
- A little bit
- Quite a bit
- A lot

43. 17. Feeling that your accumulated skills and expertise are not being put to their best use *

- Not at all
- A little bit
- Quite a bit
- A lot

44. 18. Being responsible for the quality of the work of other staff *

- Not at all
- A little bit
- Quite a bit
- A lot

45. 19. Uncertainty over the future funding of your unit/institution *

- Not at all
- A little bit
- Quite a bit
- A lot

46. 20. Encountering difficulties in relationships with administrative staff *

- Not at all
- A little bit
- Quite a bit
- A lot

47. 21. Being responsible for the welfare of other staff *

- Not at all
- A little bit
- Quite a bit
- A lot

48. 22. Encountering difficulties in relationships with colleagues *

- Not at all
- A little bit
- Quite a bit
- A lot

49. 23. Encountering difficulties in relationships with managers/supervisors *

- Not at all
- A little bit
- Quite a bit
- A lot

50. 24. Dealing with the threat of being sued for malpractice *

- Not at all
- A little bit
- Quite a bit
- A lot

51. 25. Encountering difficulties in relationships with junior medical staff *

- Not at all
- A little bit
- Quite a bit
- A lot

Section 4: Stress and Anxiety and Covid-19

52. 1. Are you afraid the virus outbreak will continue indefinitely? *

- [ ] Never
- [ ] Rarely
- [ ] Sometimes
- [ ] Often
- [ ] Always

53. 2. Are you afraid your health will worsen because of the virus? *

- [ ] Never
- [ ] Rarely
- [ ] Sometimes
- [ ] Often
- [ ] Always

54. 3. Are you worried you might get infected? *

- [ ] Never
- [ ] Rarely
- [ ] Sometimes
- [ ] Often
- [ ] Always

55. 4. Are you more sensitive to minor physical symptoms than usual? *

- Never
- Rarely
- Sometimes
- Often
- Always

56. 5. Are you worried that others might avoid you even after the infection risk has been minimised? *

- Never
- Rarely
- Sometimes
- Often
- Always

57. 6. Do you feel skeptical about your job after going through this experience? *

- Never
- Rarely
- Sometimes
- Often
- Always

58. 7. After this experience, do you think you will avoid treating patients with viral illnesses? *

- Never
- Rarely
- Sometimes
- Often
- Always

59. 8. Do you worry your family or friends may become infected because of you? *

- Never
- Rarely
- Sometimes
- Often
- Always

60. 9. Do you think that your colleagues would have more work to do due to your absence frc a possible quarantine and might blame you? *

- Never
- Rarely
- Sometimes
- Often
- Always

Thank you for participating in this survey

If you are experiencing feelings of stress, anxiety or dispair and would like someone to talk to, please be aware of the following free support services:

Samaritans helpline: 116 123

www.turn2me.ie

If you have any concerns about this research project, please email me at: **x18189636@student.ncirl.ie.**

Or contact my supervisor Dr Conor Nolan: **conor.nolan@ncirl.ie**

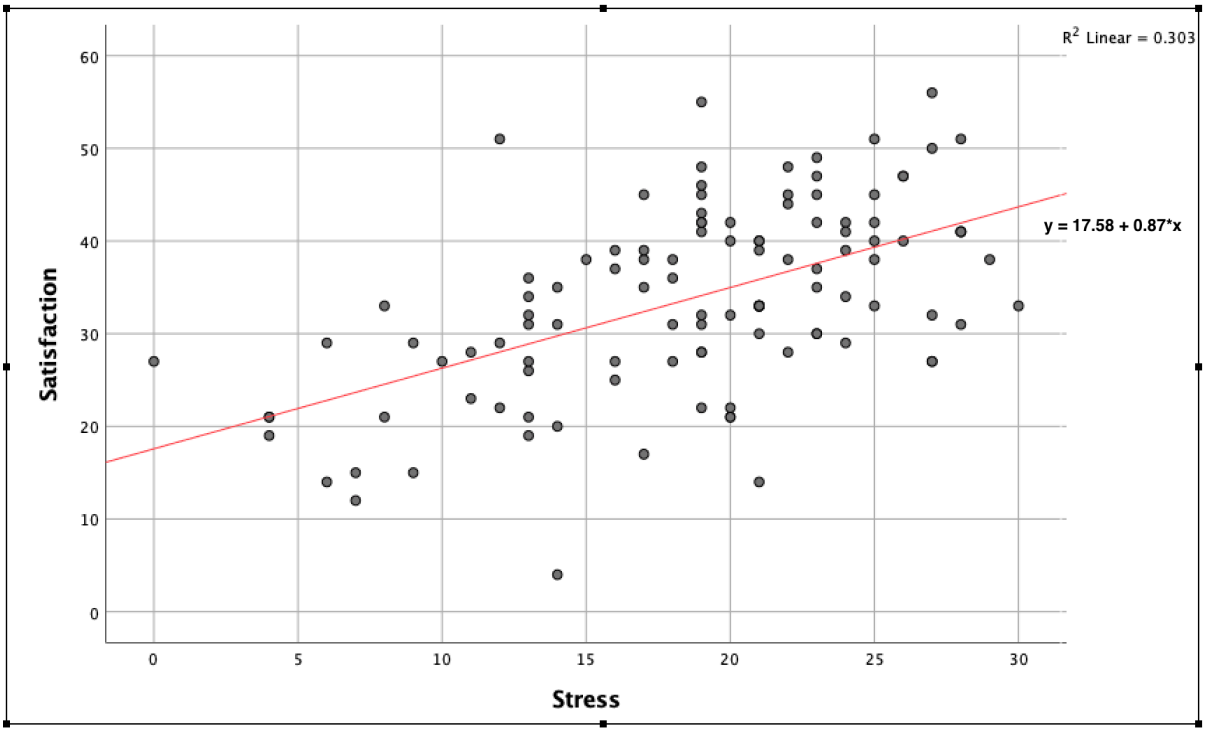


Figure 4. Job stress and job satisfaction scatterplot.