PHYSICAL ACTIVITY LEVEL, PSYCHOLOGICAL WELLBEING AND JOB-STRESS OF OFFICE WORKERS WORKING REMOTELY DURING THE COVID-19 PANDAMEIC IN DUBLIN, IRELAND

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A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT FOR THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN INTERNATIONAL BUSINESS TO THE NATIONAL COLLEGE OF IRELAND

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ABSTRACT

With the adjustment of several professionals to the new norm of working remotely during the covid-19 pandemic, rising concerns about the challenges and benefits associated with remote working have been raised. The purpose of this study was to evaluate the physical activity level, psychological wellbeing and job-stress of office employees working remotely during the covid-19 pandemic in Dublin, Ireland.

A quantitative analysis approach was applied to this research, using a questionnaire consisting of the Ryff 18-item shortened version scale, International physical activity questionnaire (IPAQ-SF) and the workplace stress scale to evaluate the levels of physical activity level, psychological wellbeing and job-stress of office employees, who began remote working during the covid-19 pandemic.

Data collected from 70 participants, who were either full or part-time remote working office employees, was analysed using SPSS descriptive statistics to evaluate physical activity, job-stress and psychological well-being levels of participants. Findings were interpreted and measured against the standard recommendations of each variable. The researcher carried out two correlational analyses. Firstly, between physical activity and psychological well being. Second, between physical activity and job-stress.

Results obtained from both survey and test showed that a relationship exists between Technological Innovation and Competitive Advantage with 90.4% and 79.4% which is high showing that indeed Technological innovations such as POS machine, website, online app among others have all contributed to the success of the firm. The result obtained from the study reveals that Technological Innovation has a positive influence on Competitive Advantage.

Findings: Descriptive and inferential statistics showed a moderate level of stress of employees working remotely, moderate and high levels of physical activity and high levels of psychological wellbeing. The Pearson's correlation results revealed no significant relationship between psychological wellbeing and physical activity. No significant relationship between Physical activity and occupational stress.

Key words: Physical Level Activity, Psychological Well Being, Job Stress, Remote Workers, COVID-19.

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Abbreviations

WFH: Work from home.

WHO: World health education.

CHAPTER ONE: INTRODUCTION

In today's constantly changing world, an employee's ability to adapt to unexpected organisational changes is crucial. These changes can present as smaller challenges, such as working with a new line manager or transfer to a new department. It can also present in complex proportions such as adjusting personal and work life to the declaration of lockdown in Ireland on March 27th, 2020, resulting from the COVID-19 pandemic (WHO, 2020). In response to the public health guidelines and government restrictions, some organisations adopted the remote working initiative, also known popularly working from home (WFH), as the primary mode of work delivery.

Despite the gradual phasing out of restrictions and social distancing in Ireland, the remote work program continues to be availed of by some organizations. This has drawn attention to the advantages and problems it poses for both employees and businesses, and how this new knowledge can be employed in the tackling of employee wellbeing challenges experienced by the remote worker. In reference to difficulties experienced by the remote worker, the implication of working from home on their health and wellbeing is not clearly defined and necessitates more research. This is because working remotely has been shown to have both beneficial and detrimental impacts on their health. Research involving employee wellbeing and remote working could serve as pointers or alarm systems, to signal possible deviations of remote working employees from physical and psychological health standards.

The possibility of the remote working structure becoming permanent for some organisations is real, especially in the face of another pandemic. Therefore, developing a portfolio of knowledge on existing challenges and advantages workers using this form of work delivery encounter, might prove valuable. This research aims to evaluate the physical activity levels, psychological wellbeing and job stress of office employees working remotely in Dublin, Ireland during the Covid-19 pandemic era. The following chapter will provide an overview of the study by firstly explaining the background and context, followed by the research problem, research aims, objectives and questions and lastly, limitations.

1.1 Background of study.

During the early stages of the pandemic, businesses, social gatherings, and office work were placed on hold to mitigate the unprecedented spread of the virus. Remote working has become a widespread phenomenon since the World Health Organization (WHO) proclaimed the Covid-19 pandemic in December 2020, following the detection of the first Covid-19 case in Wuhan, China (Abdullah *et al*., 2020, Minihan *et al*.,2022). The term remote work, virtual work, or work from home can be described as a form of working arrangement involving the utilisation of information and communications technologies (ICTs) such as laptops, smartphones, desktop computers by an employee to deliver work duties from an external location (Matlock, 2018; Oakman, 2020).

The innovation of the remote work program for personnel is generally acknowledged by current studies, because it provides a means by which businesses continue to thrive and work to continue, especially during the lockdown phases (ref). Research investigating the benefits enjoyed by employees working outside the traditional office environment include higher enthusiasm, greater job satisfaction, and increased profitability (Felstead and Henseke, 2017). By contrast, working remotely has been suggested to have the potential of promoting adverse health effects such as decrease of physical activity, increase in job stress, (Hall *et al*.,2021).

Physical activity (PA) is an essential ingredient in the quest to adopting a healthy lifestyle and promoting psychological wellbeing (WHO, 2019). Physical activity has been broadly defined by the World Health Organization as any physiological movement that needs calorie expenditure and is produced by skeletal muscles (WHO, 2018). Research shows that regular participation in physical activity helps in the fight against depression, musculoskeletal pain, obesity that is so easily seen in round the clock jobs. It has already been suggested that office workers spend a high percentage of their time sitting at work (Thorpe *et al*., 2012). The implications of this long sitting time could predispose such workers to negative health outcomes (Chandrasekaran, 2021). In this new era of remote working, an employee's participation in regular PA could mitigate some of the unhealthy health effects associated remote working (Coulson, 2008; Hossaine, 2020; Selamet, 2020). One commonly assumed disadvantage is that the remote work initiative might have a negative impact on the level of physical activity engaged in, encouraging a sedentary lifestyle amongst previously active office

desk workers (Grasso, 2020; Stanton, 2020). Being sedentary or adopting a sedentary lifestyle involves any waking behaviour such as sitting or leaning with an energy expenditure of 1.5 metabolic equivalent task (MET) or less (SBRN, 2020).

Initially, a major contributing factor to a reduction in physical activity levels identified was the fact that national limitations implement by governments to curb the spread of disease prevented people from going to gyms and performing outdoor exercise. Hence, people spent more time at home isolating which disrupted normal daily routines, notably physical activity. (Lesser and Nienhuis, 2020; Hall *et al*.,2021). But despite the phasing out of restrictions, this trend of decreased PA is still present A recent study involving a small group of workers in Texas that switched to remote working during the pandemic reported less participation in PA (Bransson *et al*., 2022). This finding was possibly because of the decline in the need to commute to and from work, restricted access to public gyms, parks, and tasks the require constant physical activity around the office environment (Stockwell, 2021). However, no attempt was made by the author to include the potential effect of latent health challenges on the PA levels of the participants, because some of them were cancer survivors and overweight.

There is also research that supports increased flexibility in the normally rigid schedule of office workers while working remotely, allowing more participation in physical activity via online exercises platforms. In addition to the above disparities in results, a study researching Swiss office workers that adopted the remote working experience during the Covid-19 pandemic period reports that there were no changes in the physical activity involvement while working at home (Aegeter *et al*., 2021). However, this lack of change in the above study is not in agreement with two macroscale international surveys investigating home confinement on eating behaviour (Qui *et al*., 2020, Ammar *et al*., 2020). The two studies recorded a predominant increase in poor mental wellbeing, weight gain and higher cholesterol levels that occurred during the covid restriction period. These significant differences noted in the research of remote working and physical activity levels provide a basis for further research, with the purpose of understanding the physical activity levels of different populations of remote workers.

Wellbeing as defined by Dodge *et* al., 2012, is when individuals have the psychological, social and physical resources they need to meet a particular psychological, social and/or physical challenge. For the purpose of this research, only the psychological aspect of wellbeing will be refered to. Apart from the possible health risks associated with poor PA levels, Psychological wellbeing (PWB) is also an aspect of life affected by the changes in work dynamics brought about by the pandemic. Psychological well-being refers to the ability to maintain a sense of autonomy, self-acceptance, personal growth, purpose in life and self-esteem (Krabbe, 2017). The importance of the psychological aspect of wellbeing cannot be overemphasized in the workplace because it relates to the performance and ability to function at work (Khoreva & Wechtler, 2018). It is expected that individuals might become affected either positively or negatively by the post pandemic stress and the shift to remote working.

For example, research investigating employee wellbeing noted that some of the employees required to suddenly switch to remote working in Egypt experienced feelings of loneliness and isolation from their colleagues, job insecurity and an inability to separate office hours from personal time (Mostafa, 2021; Raišienė *et al.*, 2020; Rysavy & Michalak 2020). Prior to the pandemic, some of the challenging effects of remote working have already been reported by Barber and Santuzzi (2015). Their findings indicated overtime hours, lack of home-work boundaries and workplace pressure. Therefore, it is necessary to consider the magnitude of the challenging effects experienced by these employees working from home especially during a pandemic. A time when anxiety, fear and uncertainty thrive.

Defined as the alteration of one's physical or mental state as a result of work circumstances that present an employee with an assessed challenge or threat (Hashmi, 2015), occupational stress is noteworthy because significant changes to work dynamics occurred during the COVID-19 pandemic. Evidence of this increase in occupational stress is noted in the stress levels reported by university academy staff in a study in Ireland. 79% of the 249 teachers reported high levels of work burnout and low levels of job satisfaction, with 58% of the teachers considering a job change (Minihann *et al.,* 2022). This discomfort is further enhanced, because some of these teachers have did not have full understanding of how to utilise virtual teaching tools. Another study researching occupational stress and residential types of remote working Japanese employees showed that the workers suffered from distractions due to high noise levels (Natomi *et al*., 2022). Although it could be argued that the participants used in the study mostly lived in the metro areas of Japan, it is a still considered a source of occupational stress.

From the aforesaid studies, it can be argued that remote working has its benefits, such as the enjoyment of increased work flexibility, more personal and professional time. However, significant demerits of working from home have also been highlighted, such as higher occupational stress levels, prevalence of sedentary behaviour, poor psychological wellbeing, burnout, and a lack of job satisfaction. Such findings draw attention to the need to evaluate physical activity levels, occupational stress and psychological wellbeing parameters of employees working remotely during the covid era. These evaluations could extensively assist in determining the presence or absence of the reported effects of remote working and its relationship with employee health.

1.2 AIMS AND OBJECTIVES OF RESEARCH

1.2.1 Research Aim

The aim of this research is to the evaluate the Physical Activity level, psychological wellbeing and job stress level of office employees working remotely during the covid-19 pandemic in Dublin, Ireland.

While the implication of remote working on the health of an employee is still being researched, this research also focuses on understanding if there is any relationship between the level of participation in Physical activity of employees working remotely in Ireland and their psychological wellbeing, occupational stress levels during the covid-19 pandemic.

1.2.2 Research Objectives

This research addressed the following objectives:

i. To evaluate the physical activity levels of office employees working remotely in Ireland during the COVID-19 pandemic.

ii. To evaluate the psychological activity levels of office employees working remotely in Ireland during the COVID-19 pandemic.

iii. To evaluate job stress levels of office employees working remotely in Ireland during the COVID-19 pandemic.

iv. To evaluate the relationship between physical activity levels and psychological wellbeing of office employees working from home in Ireland during the COVID-19 pandemic.

v. To evaluate the relationship between physical activity levels and occupational stress of office employees working remotely in Ireland during the COVID-19 pandemic.

1.3 STATEMENT OF RESEARCH PROBLEM

Understanding the level of participation of physical activity, psychological wellbeing and occupational stress of employees working remotely is critical for good organisational performance and employee satisfaction. Several research outcomes reported conflicting results regarding the effect of remote working on occupational stress, psychological wellbeing, and physical activity during the early stages of the Covid-19 pandemic. This lack of have consistency in results suggests a need for more research on the health implications of working remotely for office workers. (Aegeter *et al*., 2021, Mostafa, 2021, Bransson *et al*., 2022). Furthermore, studies have investigated the effect of remote working in relation to occupational stress during the lockdown in Ireland. However, there is a dearth of research on the evaluation of physical activity, job stress and psychological wellbeing among office employees working remotely in Ireland, conducted during the post-lockdown phase of the Covid 19 pandemic.

1.4 RESEARCH QUESTION

What is the level of physical activity, psychological wellbeing and job stress of office employees working remotely during the COVID-19 pandemic in Ireland?

1.5 RESEARCH HYPOTHESES :

$H0_1$: There will be no significant relationship between the physical activity level and psychological wellbeing of office employees working remotely in Ireland.

$H0_2$: There will be no significant relationship between the physical activity level and occupational stress of office employees working remotely in Ireland.

1.6 SIGNIFICANCE OF STUDY

This study will contribute to the current body of knowledge on the challenges, changes and benefits experienced by office employees actively involved in remote working during the Covid-19 pandemic. Identifying the levels of Physical activity, psychological wellbeing and occupational stress of this working population could enable the development of employee centred physical, psychological, and occupational stress mitigation programs by organisations, in the face of the new norm of remote working. Results from this study could assist in creating portfolio of data and an alarm system, which could serve as a reference for any deviations from the standard recommendations of Physical activity, psychological wellbeing and job stress levels in a similar population of remote workers.

The presence of any of deviations from the recommended levels of occupational stress, physical activity and psychological well-being discovered in this study would be beneficial in developing home office health initiatives such as providing an ergonomically correct workspace, introducing physical activity time as part of the work schedule for employee. This could potentially improve work performance, productivity, and organisational success.

With the unpredictable nature of the world, the timing and chances of another pandemic occurring can never really be ascertain. Organisations need to be ready in every way possible to counter its effects on their employee's wellbeing, business continuity, the national economy and organisational success, during this present and future pandemic situations. Moreover, it is evident that remote working may become a long-term working style.

Based on public opinion, current statistics show that 45 percent of the world's population is presently working remotely (Sava, 2022). Ireland was rated the third highest country to adjust to the remote style of working in 2020 (Eurostat, 2020). Also, having in mind the constant reappearance of new viral strains, another lockdown might not be too far off. Therefore, this study will be critical in investigating the levels of physical activity, psychological wellbeing and job stress of employees working remotely in Ireland.

1.7 RESEARCH STRUCTURE

Chapter 1: Comprises the introduction, the reason and explanation of aims and objectives of the study.

Chapter 2: In the chapter, the literature review of the study provides a summary of current research on remote working and its benefits, how it affects physical activity, psychological wellbeing and job-stress of an employee. The literature review will examine evidence on the differences in research results, pertaining to the benefits and challenges faced by the remote worker, since the Covid-19 pandemic began.

Chapter 3: focus on the methodology of research, which explains how the primary research was conducted and the data analytic methods employed.

Chapter 4: focuses on the data analysis and findings of the research from the primary research. Primary data obtained through a survey sent to office employees working remotely in Dublin. The results of the data analysed will be employed in testing the hypotheses, to determine any gaps between the primary research and secondary studies.

Chapter 5: focuses on the discussion of the findings, how the results of the tested hypotheses compare with current literature on physical activity, psychological wellbeing and job-stress of the remote working employee. The conclusion, along with recommendations are included in this chapter.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This research focuses on the importance of establishing the physical activity level and psychological wellbeing and job-stress of employees working remotely during the covid pandemic. It will attempt to address the current literature on the identified benefits and challenges associated with remote working, in relation to physical activity, psychological wellbeing and occupational stress.

2.2 Theoretical Framework

The basis for firms' efforts to enhance employee well-being is the concept of corporate social responsibility (CSR), which denotes the measures a corporation does to have a beneficial impact on society and contribute to its well-being (Hediger, 2010).Through CSR initiatives, businesses show their stakeholders that they care about people, the environment, and their workforce ((Ahmed et al., 2020; Bavik, 2019). CSR initiatives include the promotion of happy and healthy working conditions, which is crucial during pandemics. The relationship between CSR and employee well-being is reciprocal, according to research ((Kim et al., 2017;AlSuwaidi, Eid and Agag, 2021).

The concept of well-being can be analyzed in a variety of ways. From a macro perspective, it includes things like life expectancy, poverty rates, and environmental problems. It includes, from the viewpoint of the individual, of subjective or psychological evaluations of a person's well-being—an individual's appraisal of the quality of their life and employment, which is based on three fundamental variables: physical, social, and psychological. Connecting to all aspects of life is related to well-being, which is the state of being healthy, happy, and in good health. Among these spheres of life, work activity and occupational functioning play a particular importance(Juchnowicz and Kinowska, 2021).

A three-dimensional model (Van De Voorde, Paauwe and Van Veldhoven, 2012) with the components relationships, enjoyment, and health (Grant, Christianson and Price, 2007) is used in this study.. In the first area of well-being, it is discussed how well both bodily and mental health are doing. The hedonistic pleasure one obtains from one's work plus the eudemonistic conviction that one's work is worthy and fascinating make up the second happiness (Ryan and

Deci, 2001). Social support, trust, and workplace justice are among the factors considered by the relational component, which examines how well the employee sees their interpersonal relationships (Guest, 2017). This paradigm served as the foundation for the current study's methodological premise.

2.3 Conceptual Framework

2.3.1 PHYSICAL ACTIVITY OF THE REMOTE EMPLOYEE

Physical activity, either in the form of regular exercise or a set number of coordinated steps are principal factors to reducing the risk of certain cardiovascular diseases. Physical activity is defined by the World Health Organization (WHO) as any physiological movement that needs calorie expenditure and is produced by skeletal muscles (WHO, 2018). It encompasses all forms of movement, whether it is done for fun, for commuting purposes, or as part of one's job (Caspersen *et* al., 1985; WHO, 2018). Furthermore, physical activities according to Sordia (2020) reduces psychological stress, obesity, and the risk of major illnesses such as cancer and diabetes.

WHO recommends that adults between the ages of 18 and 64 are required to perform at least 150-300 minutes of moderate-intensity aerobic physical activity, or 75-150 minutes of vigorous-intensity aerobic physical activity during the week for significant health benefits (WHO, 2018). This can be achieved through informal exercise activities such as outdoor cycling, sports, walking, running, or using a prescribed exercise program.

With the recent wave of isolation caused by the pandemic, companies have attempted to be more vigilant and put measures in place to ensure the psychological and physical wellbeing of their employees. More research continues to crop up constantly on the importance of investigating the changes brought by the WFH initiative and employee wellbeing.

For example, findings from a longitudinal study on the alterations in physical activity for a 22-week duration during England's first national shutdown due to the Covid-19 pandemic showed that nearly 29 percent of the population experienced a reduction in physical activity (Bu *et al*., 2021). Another study reported that there have been no changes in physical activity levels in relation to remote working because it is believed that workers now have more flexible hours

and can therefore participate in both indoor and outdoor exercise, even though access to formal exercise spaces might be limited (Aegerter *et al*.,2020)

Despite the disparity in available literature, attention has been drawn to the health implications of the reduction in physical activity level of the WFH employee brought about by COVID-19 pandemic and critical investigation into the levels of physical activities of desk workers in Ireland will help identify if health dangers lie hidden and how best organisations can tackle the negative health effects that could result (Hossaine, 2020; Selamet, 2020; Aegeter *et al*., 2021).

2.3.2 PHYSICAL HEALTH RISKS ASSOCIATED WITH REMOTE WORKING.

A lack of regular physical activity for adesk worker that works a 9 to 5 job can result in an increased risk of diabetes, low back pain, cancer and cardiorespiratory diseases amongst others (Guler *et al*.,2021; Woods *et al*.,2020). The department of Health Ireland (DHR)shows that one of the leading causes of death in Ireland is the prevalence of stroke and one way to reduce its occurrence is through physical activity (DHR, 2019).

A typical scenario that could predispose an employee to health risk is of an office desk worker in Ireland whose major form of physical activity is commuting to and from the workplace, with a calculated daily 20-30mins walk while transporting to work. This informal method of physical activity enables such an individual to meet the physical activity standards recommended by WHO, while reducing the risk of developing stroke and heart disease. Moreover, the older population of remote workers affected by the disease outbreak are more exposed to the danger attached to reduced physical activity because of the age-related risk factors of stroke and heart disease (WHO, 2018).

The WFH program birthed by the current pandemic status of the world has unfortunately eliminated this easy access to physical activity for a high percentage of pre-covid out-of-home office employees. Another identified health hazard due to a decrease in exercise levels include diabetes and low back during the work from home era in desk workers, primarily caused by engagement in sedentary living and adoption poor postures while working (Chen *et al*.,2009).

There also exists a positive correlation between increase in low back pain and WFH, caused by prolonged sitting duration, especially in a poor posture, physical inactivity and the use of non-ergonomic equipment while working (Okuyan and Begen, 2021; Ozdemir, 2021). Subsequent studies show that a regular participation in at least 20 mins of exercise could reduce the risk of developing musculoskeletal disorders such as low back pain and stroke (Serra *et al*.,2018; WHO, 2020; CDC, 2022). A summary of these findings reinforces the idea that incorporating physical activity as a major part of developing employee wellbeing initiatives during the Covid-19 pandemic will play an important role in maintaining the health and wellbeing of remote desk worker in Ireland.

2.3.3 PSYCHOLOGICAL WELL-BEING OF REMOTE WORKERS

The recent campaign for maintaining quality mental health cannot be overstressed. In recent years, this has been placed in jeopardy by the COVID-19 pandemic (Chu *et al*.,2014). The mental stress caused by a sudden change in work schedules, job positions, and day-to-day activities of working professionals have caused institutions to look for ways to readjust to the unpredictability of this new norm of working from home. Some studies have shown that work performance during the pandemic of office workers became more efficient, which can also reflect their mental health (Brannon *et al*., 2022). For example, a study investigating the relationship between increased sedentary behaviour and work performance showed no significant relationship between the two variables (Rosenkranz *et al*, 2020). Th However, another study investigating mental stress of academic staff working remotely in Northern Ireland reported a moderate increase in mental stress levels. It has been suggested that a sound mind could be achieved through adequate rest, a regular routine, adequate physical activity (Slater and Shen, 2022). Furthermore, physical activity and its role in improving depression is noteworthy in research and creating employee wellbeing initiate (Chu *et al*.,2014).

2.3.4 REMOTE WORKING INITIATIVE

Remote working also referred to as teleworking and working from home, involves a flexible work arrangement in which an agreement between an organisation and its workers allows them to operate in locations remote from their primary office facilities (Tremblay and Thompson, 2012; Stitch, 2021). In this case, communication within the workplace remains virtual and activities are contacted via a virtual workspace using technology. This form of working has become popular amongst white collar companies due to Covid-19. Wang et al (2020) in an attempt understand how the new norm of remote working shapes work characteristics, and describes the adoption in work style as an overnight change. Kniffin (2020) also implied that the unplanned change in work routine can be likened to a global experiment which is totally revamping organisational structure and employee-manager relationships.

It has been argued that the shift to working from home could have been made by organisations without the occurrence of the pandemic, but due to the fear of a decrease productivity levels and distractions at home, this option was never really considered (Bick, 2020). This seems to present as an advantage because an earlier widespread adoption of this method of working might have led to a rise in sedentary behaviour, physical inactivity, and adverse health effects, which is currently happening since the introduction of this initiative (Sui, 2013)

In Ireland, 21.3% of the employed population is presently working from home, making them the third highest country in Europe that has adopted the remote working initiative since the pandemic (Eurostat, 2021). In preparation of the possibility of a long-term transition into remote working as the new normal for some organisations in Ireland, efforts should be applied in the development of employee well-being initiative to preserve the physical health of their employees.

2.3.5 DEVELOPING EMPLOYEE WELLBEING INITIATIVE FOR PHYSICAL ACTIVITY

Development of a physical activity initiative could help mitigate the effect social isolation and working from home have on remote office desk workers in Ireland (Selemat, 2020). For example, the human centred approach relating to physical health involves research carried out on proposed physical activity initiative, was systematically designed to address the health needs of 22 remote work from home employees during the Covid outbreak (Selemat, 2020). Efforts

have also been applied to understand the 24hr day cycle of teleworking employees, which helps in determining what times of the day are remote office workers most active after the work from hone routine was introduced (Hallman *et al*., 2021).

These studies work hand in hand with revision of health benefit packages provided by companies to accommodate the changes in work life culture for the employee. Gym membership could be revised and recruitment of physical health specialists as part of the workforce to follow up on the organisation's physical health could be considered, team motivation via virtual routine physical health activities could also be incorporated as part of the weekly work schedule.

Evaluation of the levels of physical activity amongst remote office workers and anticipation of its long-term effects may contribute to the designing of workstations layouts for the remote employee. Ergonomically correct office furniture prescribed for staff assists in reducing work-related musculoskeletal disorders associated with poor posture and sitting for long hours while working from home (Minoura *et al*., 2019; HSA, 2019).

2.4 CONCLUSION

Thus far, this s review has attempted to provide a basis regarding the importance of determining the impact of remote working on the physical activity levels on office desk workers working from home. Employee wellbeing initiatives developed with the purpose of tackling health challenges that could arise due to a decrease in the level of participation in physical activity provides a basis for further research, considering remote working might become a primary work method in the coming years.

3.0 CHAPTER THREE: METHODOLOGY

3.1 Introduction

The focus of this research is to evaluation physical activity level, psychological wellbeing and occupational stress of office employees working remotely during the COVID-19 pandemic in Ireland. This chapter refers to strategies used to gather, compile, and analyze data involving the evaluation of physical activity level, psychological wellbeing and occupational stress of office employees working remotely during the COVID-19 pandemic in Ireland. The following chapter will outline the methodology chosen for this research including research philosophy, data collection method, instruments used to collect the data and ethical issues.

The research design and selected research approach implemented will also be outlined. The sampling technique, sample chosen, type of research method and data analysis procedure will be discussed. Any limitations and ethical considerations encountered during the course of the research will be clearly described in this chapter.

3.2 Research philosophy

Research philosophy influences the way a researcher develops his research process. After reviewing the literature associated with remote working during covid 19 pandemic, the positivism philosophy using a quantitative approach was selected. Research philosophy can be thought about in three major ways, namely, epistemology, ontology, and axiology. Positivism can be categorised under epistemology – an aspect of philosophy that focuses of what constitutes as acceptable knowledge, how it created, through objective knowledge or opinions (Saunders *et al*., 2016).

Positivism involves working with scientific knowledge based on facts and data which can be collected and analysed. This applies in the research aimed at identifying the levels of physical activity, psychological wellbeing, and occupational stress because the study involves collecting concrete data about a reality, while looking for relationships in variables which are typically external from the control researcher and subjects.

Another reason why the positivist viewpoint was adopted is because of objectivity purposes. This helped to conduct the research in an unbiased and value free way, preventing researchers

from investing personal feelings into the data collection. This was achieved by utilising previously tested constructs for data collection, often seen in quantitative analysis.

Unlike interpretivism, which argues that making deductions about a person's reality is not a science and is too complicated to be guided by theoretical generalizations, positivism believes tested theories allow observed facts to remain independent of the observer and free from feelings.

Alternatively, Pragmatism, another form of research philosophy, argues that the research philosophy employed is dependent on the research question. This allows the researcher to either adopt a positivist or interpretivist perspective. The application of an interpretivist perspective could have been utilised in this study, using qualitative unstructured interviews to gather data on the subjective experiences of office workers working remotely. However, for the purposes of reliability, which involves the reproduction of the research under the same conditions, a positivist approach was chosen instead.

3.3 Research Approach

A deductive approach was selected for this study, based on the development and testing of the study's hypothesis based on existing theory. This contrasts from the inductive approach, in which a theory a developed by the researcher from data gathered during the study.

3.4 Quantitative research choice

In order to conduct this study, the quantitative research method was chosen as the best approach because it involves the collection and analyses of hard factual numerical data, that can be used for definite deductions of results. This study also requires the use of correlational analysis to determine if there is a relationship between variables.

In relation to correlating variables in this study, it was best to employ quantitative statistics, surveys, and questionnaires rather than unstructured interviews of small groups. The reason behind this choice a limited number of interviews might not serve as a true representation of the population.

Unlike qualitative studies which make use of subjective exploration of opinions as data source for analysis, identifying the levels of physical activity, occupational stress and psychological well-being required an objective outlook (Saunders *et al*., 2016). This method is necessary

because previously established standards, recommendations or theories of the above parameters served as factual guidelines to any deviations observed in numerical results of the study. Hence, the data used needed to be objective (Saunders *et al*., 2016).

In addition, similar research conducted by key studies identified in the literature review showed the use of quantitative analysis in data collection and analysis processes (Prasad *et al*., 2020; Mustafa, 2021; Shen and Slater, 2021; Minihan, 2022 PA).

Moreover, for the purpose of replication and ensuring reliability, the use of a qualitative analysis via unstructured open-ended questions could inhibit the repetition of this study in a different population. For example, another researcher might be interested in evaluating the Physical activity levels in remote health workers. The methods and results employed in this study should be applicable in replicating results in other settings.

3.5 Quantitative and qualitative methods.

There are two main forms of research methods, namely quantitative and qualitative research. Quantitative research can be explained as any method of data collection or analyses that utilises or produces numerical data. That is, the research information is collected using a questionnaire and data is analysed in the form of statistics and graphs (Saunders *et al*.,2016).

In contrast, qualitative research is employed in understanding experiences and concepts, which is collected and analysed in the form of non-numerical data, such as words and pictures (Quinlan, 2015).

According to Quinlan (2015), quantitative analysis finds application in studies that require development of information from previously existing insights, require many participants, and needs to test a hypothesis or a theory.

The use of quantitative research Is in sync with the positivist perspective, where research is based on objective data and deductive reasoning. Alternatively, qualitative research is employed when deep understanding into the experiences, opinions and beliefs are required to tackle a research problem (Mills and Birk, 2014; Saunders *et al*., 2016). This is used primarily for developing a theory and hypothesis from the subjective point of view of participants, with data collection in the form of words, videos, interviews, or pictures.

These experiences which are documented through semi-structured or unstructured interviews, observations or focus groups reflects the interpretivism philosophy, where factual and hard data is not implemented (Saunders *et al*.,2016). In summary, qualitative research should be used when the researcher needs to test or confirm a hypothesis using concrete numerical data while qualitative research is aimed at exploring beliefs to formulate a theory or hypothesis using non-numerical data.

It is also acceptable to combine both quantitative and qualitative approaches to developing research. This is known as mixed methods research (Saunders *et al*.,2016)

3.6 Research design

Research design serves as the action plan for executing research. The research design will explain how the structure, plan and strategy chosen will answer the research question. This includes the data collection process, the type of statistical analysis to be used, and instruments employed in the study (Kothari, 2010). The aim of this study was to evaluate the physical activity, psychological wellbeing and job stress levels of office employees working remotely in Dublin, Ireland.

To recap on the kind of research philosophy, approach and method employed by the research,

this study adopts a positivist philosophy perspective because it supports the role of factual and measurable evidence in evaluation and correlational research.

For this research, quantitative methods which supports the positivist viewpoint of keeping the study objective and unbiased was employed.

This researcher also made use of a deductive approach during the research process (Saunders *et al*.,2016).

3.7 Data Collection method

3.7.1 Survey

Data was collected using a self-reported questionnaire which was administered using an online survey system (google forms) to 70 participants from July 2022 to August 2022 during the post restriction phase of the pandemic in Dublin, Ireland. The link to the questionnaire was

distributed via emails, online social media platforms, with the inclusion of an informed consent and a short introduction of the study's purpose (See Appendix)

A questionnaire was chosen as the method of research because it provided animosity of the responses received. Participants were more willing to answer the questions honestly without the fear that responses can be linked to them.

Using an online questionnaire allowed the participants to answer the questions at their own convenience and time, without the constraints associated with the scheduled time of an interview.

The questions in the questionnaire (Appendix 4) were directed at office employeesworking remotely during the covid-19pandemic with emphasis on their physical activity, psychological wellbeing, and occupational stress levels.

3.7.2 Research Instrument

A questionnaire comprising questions from three validated questionnaires was utilised. These questionnaires include the International activity 7-item short form questionnaire, Shortened version of Ryff's 18-item psychological wellbeing questionnaire and the workplace stress scale (Ryff, 1995; Booth, 2000; Lee *et al*., 2011), assessing physical activity, psychological wellbeing and occupational stress respectively *"*

The format of the questionnaire was classified into:

1. Informed Consent
2. Demographics
3. Physical activity level of participation
4. Psychological wellbeing
5. Job-related stress

The following questions were utilised in achieving the aim and objectives of these study, and to answer the research question "*What is the physical activity level, psychological wellbeing and occupational stress of office workers working remotely during the covid-19 pandemic*

Questions such as:

“During the last 7 days, on how many days did you do moderate physical activity like carrying light loads, bicycling regularly?” was used in assessing physical activity.

“I am good at managing the responsibilities of daily life” assessed psychological wellbeing.

Lastly, questions such as “I feel that job pressures interfere with my family or personal life” was used in evaluating occupational stress levels.

3.7.3 Measurement of job-stress

The workplace stress scale based on a 5-point Likert scale with a rating scale of Never = 1, Rarely = 2, Sometimes = 3, Often = 4, Very Often = 5, were used to measure eight related stress related factors. Total score is derived from numbers answered to all the eight questions and interpreted by the workplace stress scale grading format.

3.8 Measurement of Physical activity

The International physical activity questionnaire – short form uses 7 questions to evaluate the participants 7-day recall of physical activity. The results derived from answered questions are interpreted based on the IPAQ scoring format which will be fully discussed in the analysis section.

3.8.1 Measurement of psychological wellbeing

The shortened version of the Ryff 18-item questionnaire based on a 7-point Likert scale was used. This is a 7-point rating scale ranging from Strongly Agree=7, Somewhat Agree=6, A Little Agree=5, Neither Agree nor Disagree=4, A Little Disagree=3, Somewhat Disagree=2, Strongly Disagree =1

The factors measured include autonomy, environmental acceptance, personal growth, positive relations, purpose in life and self-acceptance.

Some of the items require reverse scoring using the following method:

(Number of points on the scale) +1) - (Answer from the participant)

For example, if the participant answers 4 on question 2, the answer recorded will be

(7+1)-2 = 6.

3.9 DATA ANALYSIS

Data was analysed using descriptive statistics such as mean, median and mode, inferential and correlational statistics. For the demographic section of the study, descriptive statistics helped provide insight into the diversity of participants gender, height, weight and age.

Pertaining to inferential statistics, this was used to evaluate the variables namely, physical activity, psychological wellbeing and job-stress of the office employees working remotely.

For the purpose of this research, data was collected through the use of Microsoft excel and analysed by IBM SPSS Statistics 28.0.1. This statistical analytic tool was chosen to meet the objectives of this study because it provides a clear evaluation of the physical activity, psychological wellbeing and job stress levels of remote office employees. Pearson's correlation was employed to determine if there is any significant relationship between physical activity and job stress, physical activity and psychological wellbeing. Information derived from this study will then be compared with the standard levels of physical activity, psychological wellbeing and job stress. Inferences from the data analysed can help determine if there are any deviations from the recommended levels of job stress, physical activity and psychological wellbeing levels amongst office employees working remotely in Dublin, Ireland. Any significant changes in the above parameters could be noted via comparison with the scoring system of the International Physical activity questionnaire, the workplace stress scale, and the 18-item Ryff Psychological wellbeing scale. Comparison and measurement of the scoring system was included in the description of the research instrument sections and findings chapter of this study (Figure 1).

3.10 INTERPRETATION OF SCORES

3.10.1 IPAQ 7-ITEM SHORT FORM INSTUMENT

This questionnaire evaluates three aspects of physical activity, namely walking (days), moderate intensity activity (minutes), and vigorous intensity activity (minutes). Metabolic equivalent of task (MET) can be explained as the amount of energy expended when carrying out physical activity. The short form IPAQ questionnaire can be used in the evaluation of physical activity, through the separate summation of moderate intensity activity, vigorous intensity activity and walking using the MET formula. Total results of activity level are calculated by summating the scores of the three aspects, moderate intensity, vigorous intensity and time spent of walking (Ainsworth *et al*., 2000). Firstly, each domain's score is calculated using the formula below:

Expressed as MET-min per week: MET level x minutes of activity/day x days per week

Walking MET-minutes/week = 3.3 x walking minutes x walking days

Moderate MET-minutes/week = 4.0 x moderate-intensity activity minutes x moderate days
Vigorous MET-minutes/week = 8.0 x vigorous-intensity activity minutes x vigorous-intensity days

Sample Calculation

MET levels MET minutes/week for 30 min/day, 5 days

Walking = 3.3 x30 x5 = 495 MET-minutes/week

Moderate Intensity = 4.0x30x5 = 600 MET-minutes/week

Vigorous Intensity = 8.0x30x 5 = 1,200 MET-minutes/week

The total value of physical activity is calculated by the summation of the three domains: moderate intensity, low intensity and walking.

Total MET-minutes/week = Walk (METs x min x days) + Mod (METs x min x days) + Vig

(METs x min x days)

TOTAL = 2,295 MET-minutes/week

3.10.2 Levels of Physical activity.

High level of physical activity

It can be in interpreted as 7 days or more of any combination of walking, vigorous intensity and moderate intensity activity that achieves a minimum total of at least 3000 MET minutes/week (Ara, 2005).

Moderate level of physical activity

It can be in interpreted as 5 days or more of any combination of walking, vigorous intensity and moderate intensity activity that achieves a total of at least 3000 MET minutes/week (Ara, 2005)

Low level Physical Activity

It can be interpreted as activity levels that fall between a total of 600-2900 METminutes/ week, with less than 5 days of any combination of walking, vigorous intensity and moderate intensity activity

3.11 SCORING OF RYFF 18-item shortened form questionnaire

Results on job stress from the RYFF short form questionnaire is not defined by cut-off points. Distributional information obtained from the data is used to translate the wellbeing of the participants. For example, high wellbeing can refer to score in the top 25 percent of the distribution and low wellbeing refer to the bottom 25 percent of the distribution (Ryff, 2014).

3.12 SCORING OF THE WORKPLACE STRESS SCALE

To calculate the score of the workplace stress scale, all 8 questions are summed up and interpreted as follows:

- Total score of 15 or lower signifies a relatively calm level of stress

- Total score 16 to 20 equates to a fairly low level of stress.
- Total score 21-25 indicates moderate stress.
- Total score 26-30 indicates a severe stress level.
- Total score 31- 40 indicates potentially dangerous stress levels

3.13 POPULATION AND SAMPLING

The overall focus of the study is to determine the levels of physical activity, psychological wellbeing, and job stress in a population of office employees working remotely. Non-probability sampling technique in the form of purposive sampling and snowball method were used for this research. Purposive sampling also known as judgemental sampling, involves the selection of participants based primarily on the ability of the participants to elucidate a particular phenomenon or concept.

This form of sampling served as an advantage because the researcher required only office employees that started working remotely during the COVID-19 pandemic. Choosing purposive sampling provided a significant level of flexibility in term of research design, which permitted the adaptation of specific techniques utilised in the achievement of the end result of the study.

However, this form of sampling also necessitates the use of more sophisticated evidence-based procedures to demonstrate the applicability of the data gathered, due to the possibility of researcher bias (Saunders *et al*., 2016).

Snowball sampling was also used to identify the desired participants required for the study, which made it easier for the researcher to recruit further participants for the study.

3.13.1 PARTICIPANTS

Only office employees that transitioned from working in-office to remote working in Ireland were allowed to participate in this study. This study consisted of a total of 70 full time and part-time remote office employees. The participants included male, female participants with age ranging from 19-65 years.

The proper method for determining the sample size for survey research is to use Yamane (1967) formula for the known size of the population and Cochran (1977) formula for unknown

population size. However, for the purpose of this study, the sample size study was used (Slater and Shen, 2022).

3.13.2 ETHICAL CONSIDERATION

Prior to the commencement of the study, measures to ensure confidentiality, anonymity and a high degree of privacy was made to comply with Ireland's Protection Act 2018 (DPA, 2018). All participants who completed the questionnaire online were informed of the type, purpose, and usage of the collected data. The timeframe of the questionnaire was equally communicated, as well as the understanding that participation is strictly voluntary. No identifiable data, such as email addresses or IP addresses linking the participant to study was stored.

CHAPTER 4: ANALYSIS AND FINDINGS

4.1 Introduction.

This chapter will present findings of data obtained from the survey sent to office employees working remotely in different professions in Dublin. It outlines the participants demographics such as their age, gender, weight and height which is important in understanding the inclusiveness of the workforce, by utilising descriptive statistics. Pearson's correlational statistics was used to test the hypothesis, which is useful in making inferences about the population.

The preferred target sample for the purpose of this research was 84 participants, however due to limitation previously mentioned, the sample utilised was 70 participants.

DEMOGRAPHICS OF THE PARTICIPANTS

With the purpose of achieving the objectives of this research, description of the background of participants is important. The participant's background, using descriptive statistics provides insight into the diversity of office employees working remotely Dublin. As a result, the first four questions of the questionnaire consisted of variables such as gender, age, weight and height.

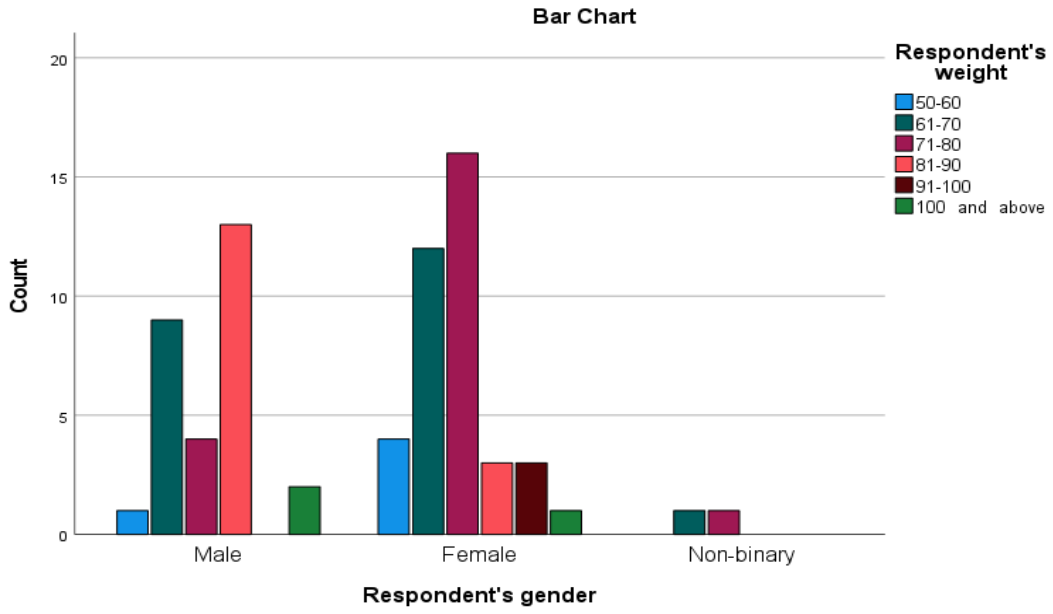

Figure 4. 1: Gender of participants.

Gender: The sample for the study was composed of 70 office employees, currently working remotely in Ireland. The sample consisted of mixed genders, with the highest number of participants represented by females (39), males were represented by 29 participants and 2 were recorded as non-binary. The close equality in number of male and female participants could suggest that the method of purposive sampling and snowballing prevented bias.
The question of gender was close ended, with the option of 'non-binary' and 'prefer not to say', This allowed the option of not disclosing their gender if preferred.

Age: The age range of participants required for this study was from 19-25 years due to consent purposes. 40 of the participants were categorised into the age range of 25-34 years while 12 0f participant were categorised in the range of 45-54 years. This could suggest that the majority of employees engaged in remote working currently are young adults. There were no participants that were aged 55 years and below.

Weight: Most of the participants were under the weight range of 61-70kg and the lowest number of participants were categorised between 91-100kg.

Table 4. 1: Gender distribution of participants.

		Count
Respondent's gender	Male	29
	Female	39
	Non-binary	2
	Prefer not to say	0

Table 4. 2: Height distribution participants

Respondent's height	less than 1.49	Count	0
	1.50-1.59	Count	9
	1.60-1.69	Count	12

	1.70-1.79	Count	25
	1.80 and above	Count	16
	Not sure/ don't know	Count	2

Table 4. 3: Weight distribution of participants

Respondent's weight						
less than 50	50-60	61-70	71-80	81-90	91-100	100 and above
Count	Count	Count	Count	Count	Count	Count
0	5	22	21	16	3	3

Table 4. 4: Population descriptive statistics showing the total number of participants

	N	Mean	Std. Deviation	Variance
Respondent's gender	70	1.614	.542	.294
Valid N (listwise)	70			

Std. Deviation and Variance use N rather than N-1 in denominators.

Table 4. 5: Participant's gender and weight

*Respondent's gender * Respondent's weight Crosstabulation*

Count

		Respondent's weight						
		50-60	61-70	71-80	81-90	91-100	100 and above	Total
Respondent's gender	Male	1	9	4	13	0	2	29
	Female	4	12	16	3	3	1	39
	Non-binary	0	1	1	0	0	0	2
Total		5	22	21	16	3	3	70

Table 4. 6: Age of participants

		Count
Respondent's age	19-24	12
	25-34	40
	35-44	12
	45-54	6
	55-64	0
	65 and above	0

2. Physical Activity levels of remote office workers

The physical activity levels of remote working office employees was assessed using the IPAQ 7-item short form questionnaire. Number of days and time spent on walking, moderate intensity activities and vigorous intensity activities. The total score of each participant was determined the level of physical activity of the sample. From the results, 62.1% of the participants recorded of the male participants reported a high level of physical activity, and 13.8% of the males show a low level of physical activity.

For the females, and 46.2 % showed a moderate level of physical activity,33.3 % of the sample recorded a low level of physical activity and 20.5 % of females showed a high level of physical

activity. These results show a higher percentage of male participants showed a high level of PA and a lower percentage showed lower levels of physical activity.

The results show similar percentage values for low levels and high levels of PA for female. This result fulfils the first objective of the study.

			TOTALMETCO			
			High	Moderate	Low	Total
Respondent's gender	Male	Count	18	7	4	29
		% within Respondent's gender	62.1%	24.1%	13.8%	100.0%
		% within TOTALMETCO	66.7%	26.9%	23.5%	41.4%
		% of Total	25.7%	10.0%	5.7%	41.4%
	Female	Count	8	18	13	39
		% within Respondent's gender	20.5%	46.2%	33.3%	100.0%
		% within TOTALMETCO	29.6%	69.2%	76.5%	55.7%
		% of Total	11.4%	25.7%	18.6%	55.7%
	Non-binary	Count	1	1	0	2
		% within Respondent's gender	50.0%	50.0%	0.0%	100.0%
		% within TOTALMETCO	3.7%	3.8%	0.0%	2.9%
		% of Total	1.4%	1.4%	0.0%	2.9%
Total		Count	27	26	17	70
		% within Respondent's gender	38.6%	37.1%	24.3%	100.0%
		% within TOTALMETCO	100.0%	100.0%	100.0%	100.0%
		% of Total	38.6%	37.1%	24.3%	100.0%

Figure 4. 2: Physical activity levels

Sitting time of participants

13% of the male sample showed a sitting time of less than 1 hour and 55% showed a sitting time of more than 6 hours. However, the major percentage of the female population (41.5%) showed a sitting time of greater than 6 hours.

			SittinghrsCode			
			<1	1-5	6-10	Total
Respondent's gender	Male	Count	4	9	16	29
		% within Respondent's gender	13.8%	31.0%	55.2%	100.0%
		% within SittinghrsCode	33.3%	37.5%	47.1%	41.4%
		% of Total	5.7%	12.9%	22.9%	41.4%
	Female	Count	8	15	16	39
		% within Respondent's gender	20.5%	38.5%	41.0%	100.0%
		% within SittinghrsCode	66.7%	62.5%	47.1%	55.7%
		% of Total	11.4%	21.4%	22.9%	55.7%
	Non-binary	Count	0	0	2	2
		% within Respondent's gender	0.0%	0.0%	100.0%	100.0%
		% within SittinghrsCode	0.0%	0.0%	5.9%	2.9%
		% of Total	0.0%	0.0%	2.9%	2.9%
Total		Count	12	24	34	70
		% within Respondent's gender	17.1%	34.3%	48.6%	100.0%
		% within SittinghrsCode	100.0%	100.0%	100.0%	100.0%
		% of Total	17.1%	34.3%	48.6%	100.0%

Figure 4. 3: Sitting time of participants

Job stress levels

Most of the male participants (65%) recorded job stress levels within the range of moderate stress levels and zero levels for high stress. 48.7 % of females also recorded moderate stress levels, a lesser percentage of 28.2 % recorded fairly low stress levels.

			TotalWrkStrCode					
			>15	16-20	21-25	26-30	31-40	Total
Respondent's gender	Male	Count	0	7	19	3	0	29
		% within Respondent's gender	0.0%	24.1%	65.5%	10.3%	0.0%	100.0%
		% within TotalWrkStrCode	0.0%	38.9%	48.7%	33.3%	0.0%	41.4%
		% of Total	0.0%	10.0%	27.1%	4.3%	0.0%	41.4%
	Female	Count	2	11	19	5	2	39
		% within Respondent's gender	5.1%	28.2%	48.7%	12.8%	5.1%	100.0%
		% within TotalWrkStrCode	100.0%	61.1%	48.7%	55.6%	100.0%	55.7%
		% of Total	2.9%	15.7%	27.1%	7.1%	2.9%	55.7%
	Non-binary	Count	0	0	1	1	0	2
		% within Respondent's gender	0.0%	0.0%	50.0%	50.0%	0.0%	100.0%
		% within TotalWrkStrCode	0.0%	0.0%	2.6%	11.1%	0.0%	2.9%
		% of Total	0.0%	0.0%	1.4%	1.4%	0.0%	2.9%
Total		Count	2	18	39	9	2	70
		% within Respondent's gender	2.9%	25.7%	55.7%	12.9%	2.9%	100.0%
		% within TotalWrkStrCode	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	2.9%	25.7%	55.7%	12.9%	2.9%	100.0%

Figure 4. 4:Job stress levels

Psychological well-being levels

			TotalPsychCod			
			<85.75 Low Wellbeing	85.75-102.25 good Wellbeing	> 102.25 High Wellbeing	Total
Respondent's gender	Male	Count	7	13	9	29
		% within Respondent's gender	24.1%	44.8%	31.0%	100.0%
		% within TotalPsychCod	29.2%	44.8%	52.9%	41.4%
		% of Total	10.0%	18.6%	12.9%	41.4%
	Female	Count	17	14	8	39
		% within Respondent's gender	43.6%	35.9%	20.5%	100.0%
		% within TotalPsychCod	70.8%	48.3%	47.1%	55.7%
		% of Total	24.3%	20.0%	11.4%	55.7%
	Non-binary	Count	0	2	0	2
		% within Respondent's gender	0.0%	100.0%	0.0%	100.0%
		% within TotalPsychCod	0.0%	6.9%	0.0%	2.9%
		% of Total	0.0%	2.9%	0.0%	2.9%
Total		Count	24	29	17	70
		% within Respondent's gender	34.3%	41.4%	24.3%	100.0%
		% within TotalPsychCod	100.0%	100.0%	100.0%	100.0%
		% of Total	34.3%	41.4%	24.3%	100.0%

Figure 4. 5: Psychological wellbeing levels

The major percentage of the male gender reported good psychological wellbeing levels (44.8%), 31% showed high psychological wellbeing levels, and 24.1 % showed low wellbeing levels. In contrast, the female reported different scores, with the highest percentage of female (43.6 %) reporting low wellbeing level, while 20.5 % shows low psychological wellbeing levels.

Relationship between psychological wellbeing and job stress

		METVig	METMod	METWalk	TOTALMET	SittingHrs	Autonomy	EnvMastery	PersGrowth	PRO	PIL	SelfAccep	TotalPsych	TotalWrkStress
N	Valid	70	70	65	70	70	70	70	70	70	70	70	70	70
	Missing	0	0	5	0	0	0	0	0	0	0	0	0	0
Mean		1402.8571	817.4857	997.4123	3146.5114	5.0286	15.7714	14.5857	18.2000	15.0857	15.4429	17.0571	92.7714	22.7000
Median		260.0000	240.0000	594.0000	1675.0000	5.0000	15.0000	15.0000	19.0000	15.0000	16.0000	18.0000	91.5000	23.0000
Std. Deviation		2103.51613	1259.49540	1106.51832	3547.92819	3.01672	2.90513	3.13231	2.70051	3.62656	3.38212	3.57481	11.69562	4.01934
Minimum		.00	.00	.00	.00	.00	8.00	8.00	12.00	8.00	7.00	8.00	60.00	7.00
Maximum		10080.00	5040.00	4158.00	19278.00	10.00	21.00	21.00	21.00	21.00	21.00	21.00	118.00	33.00

Figure 10: Results of Pearson's Correlation between Physical activity and psychological wellbeing.

From the results of the study, there was no significant relationship between physical difference between physical activity and psychological wellbeing.

Relationship between physical activity and Job stress

			TOTALMET	TotalPsych	TotalWrkStress
Spearman's rho	TOTALMET	Correlation Coefficient	1.000	.110	-.196
		Sig. (2-tailed)	.	.367	.104
		N	70	70	70
	TotalPsych	Correlation Coefficient	.110	1.000	-.091
		Sig. (2-tailed)	.367	.	.454
		N	70	70	70
	TotalWrkStress	Correlation Coefficient	-.196	-.091	1.000
		Sig. (2-tailed)	.104	.454	.
		N	70	70	70

Figure 10: Results of Pearson's Correlation between Physical activity and job-stress.

From the results of the study, there was no significant relationship between physical activity and psychological job-stress.

Reliability

This section tests the reliability of the scales used for measuring physical activity, psychological wellbeing and job stress. The IPAQ-7 item short form questionnaire, Ryff 18-item short form questionnaire and the workplace stress scale were use in a survey of the population.

Chronbach alpha value for the Workplace stress scale

Case Processing Summary

		N	%
Cases	Valid	57	81.4
	Excluded[a]	13	18.6

Total	70	100.0

Reliability Statistics

Cronbach's Alpha	N of Items
.348	7

Chronbach alpha for Ryff 18-item short questionnaire

Reliability Statistics

Cronbach's Alpha	N of Items
.751	18

Chronbach alpha for International Physical activity questionnaire

Reliability Statistics

Cronbach's Alpha	N of Items
.751	18

CHAPTER 5

SUMMARY, CONCLUSION, RECOMMENDATION AND PERSONAL LEARNING STATEMENT.

5.1 Introduction

The findings of this research will be addressed in this chapter. Results obtained from the primary data will be compared with research obtained from evidence identified in the literature review. This will assist in determining any differences or similarities in the results from this study as compared with that of the secondary data. In case, the inferences will be drawn on the level of physical activity, psychological wellbeing and job stress levels of office employees working remotely in Dublin, Ireland.

The aim of this research was to evaluate the physical activity levels, psychological wellbeing and job-stress of office employees working remotely during the COVID-19 pandemic. The objectives of this study were the following:

5.2 Research Objectives

This research addressed the following objectives:

i. To evaluate the physical activity levels of office employees working remotely in Ireland during the COVID-19 pandemic.
ii. To evaluate the psychological activity levels of office employees working remotely in Ireland during the COVID-19 pandemic.
iii. To evaluate job-stress levels of office employees working remotely in Ireland during the COVID-19 pandemic.
iv. To evaluate the relationship between physical activity levels and psychological wellbeing of office employees working from home in Ireland during the COVID-19 pandemic.
v. To evaluate the relationship between physical activity levels and occupational stress of office employees working remotely in Ireland during the COVID-19 pandemic.

The following section will discuss the findings of this research and how it compares with what current literature's say.

5.3 Discussion

The current literature suggests employees face health and wellbeing challenges a due to the overnight switch of employees to remote working, as a result of the sudden onset of the COVID-19 pandemic. Some of the identified challenges is an increase in the job-stress, psychological wellbeing and physical activity levels of remote workers. This finding has been investigated by a similar study conducted in India (Prasad *et al*., 2020). Results from the research by Prasad indicated that psychological wellbeing factors are statistical significant in the male population (Prasad *et al*., 2020). This finding is in line with the findings of this research, which showed that a higher percentage of males experienced good levels of psychological wellbeing. This is in contrast with a study investigating workplace performance and psychological wellbeing factors (Green and Tappin, 2020).

The second key finding of this study showed a moderate level of Physical activity for both male and female participants. However, this result is contrary to the decreased level of physical activity observed in participants in of a longitudinal study investigating Physical activity levels (Rapisarda *et al*., 2021). However, the findings observed in the research of changes in workers behaviour in relation to sedentary time and physical activity also showed reduced participation in physical activity. A study relating to the physical activity of German adults also suggested a decrease in Physical activity level (Fuzeki *et al*., 2021). These findings are not supported by the lack of change in the physical activity of Swiss workers engaged in remote working (Aegerter, 2021).

The third main finding of this study reported high levels of job stress in the majority of women working remotely, while men were shown to experience moderate levels of stress. These findings are in line with the findings of moderate stress levels of academic staff in Northern Ireland but reported results of poor wellbeing in the participants.

5.4 Recommendations

From the literature review conducted and the findings of the research investigating physical activity, psychological wellbeing, job -stress, it is evident that there is a high level of disparity in relation of these variables in relation to remote working. More research regarding the significance of remote working on the physical health and wellbeing of the remote office employ will help design and implement employee wellbeing initiatives to tackle any observed challenges and benefits. The investigation of physical activity, job stress and psychological wellbeing in a larger sample size of different professions will provide insight into the awareness of challenges and benefits associated with remote working

5.5 Conclusion

This research explored the physical activity, psychological wellbeing and job-stress a of the office employee working remotely in Dublin Ireland. The study assessed levels of participation in physical activity, job-stress and psychological wellbeing, and whether they reported a decrease or increase in these variables. The researcher compared the findings of this study with the current literature and found significant differences. Future research could focus on understanding the development of employee wellbeing initiatives for the remote office worker, which will attend to any challenges associated with working remotely. Home workplace ergonomic corrections, physical activity work time and avoiding overtime at work will go a long way is managing stress levels of the remote office employee.

5.6 RESEARCH LIMITATIONS

The major limitations of this study were the time constraint as well as the difficulty in obtaining the right construct. Participants were less inclined to fill out the long form of the questionnaire in the initial pilot study. Making the questionnaire simple enough for the participants should be made use of in future research particularly in relation to the 'riff' 84 item questionnaire for assessing psychological wellbeing, which will make participants fill the questionnaire and thus lead to a more accurate result. Due diligence was also observed by contacting the original author of the questionnaire.

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APPENDICS

Appendices A

PHYSICAL ACTIVITY, PSYCHOLOGICAL WELLBEING AND JOB STRESS RESEARCH SURVEY QUESTIONNAIRE-
(IPAQ SHORT FORM 7-ITEM QUESTIONNAIRE, PSYCHOLOGICAL GENERAL WELLBEING QUESTIONNAIRE, WORKPLACE STRESS SCALE)

Physical activity, psychological wellbeing and job stress of office workers working from home during the covid-19 pandemic in Ireland-a subjective study

I would like to invite you to participate in a research study which aims to examine the level of physical activity, psychological wellbeing and work-stress of office workers working remotely during the covid-19 pandemic in Ireland.

My name is Mayowa Olufon, and I am currently a master's student studying International Business in the National College of Ireland, Dublin. This study invites office employees working remotely in Ireland to participate.

The questions will ask you about the time you spent being physically active, your psychological wellbeing and job stress levels while working from home. Your answers hope to provide insight into developing beneficial employee wellbeing solutions.

Appendices B

SECTION 1: DEMOGRAPHICS

1. Age
    - 19-24
    - 25-34
    - 35-44
    - 45-54
    - 55-64
    - 65 and above

2. Gender
    - Male
    - Female
    - Transgender
    - Gender neutral
    - Prefer not say

3. How much do you weigh?

    - Less than 50kg
    - 50-60kg
    - 61-70kg
    - 71-80kg
    - 81-90kg
    - 91-100kg
    - 100kg and above

4. What is your height?

……

SECTION 2: PHYSICAL ACTIVITY

Think about all the vigorous activities that you did in the last 7 days. Vigorous physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

5. During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, digging, aerobics, or fast bicycling?
_____ days per week
No vigorous physical activities **Skip to question 3**

6. How much time did you usually spend doing vigorous physical activities on one of those days?
_____ hours per day
_____ minutes per day
Don't know/Not sure

Think about all the moderate activities that you did in the last 7 days. Moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

7. During the last 7 days, on how many days did you do moderate physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.
_____ days per week
No moderate physical activities **Skip to question 9**

8. How much time did you usually spend doing moderate physical activities on one of those days?
_____ hours per day
_____ minutes per day
Don't know/Not sure

Think about the time you spent walking in the last 7 days. This includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, sport, exercise, or leisure.

9. During the last 7 days, on how many days did you walk for at least 10 minutes at a time?

_____ days per week

No walking **Skip to question 11**

10. How much time did you usually spend walking on one of those days?

_____ hours per day

_____ minutes per day

Don't know/Not sure

The last question is about the time you spent sitting on weekdays during the last 7 days. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

11. During the last 7 days, how much time did you spend sitting on a week day?

_____ hours per day

_____ minutes per day

Don't know/Not sure

SECTION 3 PSYCHOLOGICAL WELLBEING

Instructions: Circle one response below each statement to indicate how much you agree or disagree.

12. I like most parts of my personality.

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree

13. When I look at the story of my life, I am pleased with how things have turned out so far."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree

14. Some people wander aimlessly through life, but I am not one of them."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree

15. "The demands of everyday life often get me down."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree

16. "In many ways I feel disappointed about my achievements in life."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree

17. "Maintaining close relationships has been difficult and frustrating for me."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree

18. "I live life one day at a time and don't really think about the future."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree

19. "In general, I feel I am in charge of the situation in which I live."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree

20. "I am good at managing the responsibilities of daily life."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree	

22. “I sometimes feel as if I've done all there is to do in life.”

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree	

23. “For me, life has been a continuous process of learning, changing, and growth.”

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree	

24. “I think it is important to have new experiences that challenge how I think about myself and the world.”

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree	

25. “People would describe me as a giving person, willing to share my time with others.”

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree	

26. “I gave up trying to make big improvements or changes in my life a long time ago”

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree	

27. “I tend to be influenced by people with strong opinions”

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree	

28. “I have not experienced many warm and trusting relationships with others.”

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree	

29. “I have confidence in my own opinions, even if they are different from the way most

other people think."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree

30. "I judge myself by what I think is important, not by the values of what others think is important."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree

SECTION 4 JOB STRESS

Directions: Thinking about your current job, how often does each of the following statements describe how you feel?

1-Never 2-Rarely 3-Sometimes 4-Often 5-Very Often

31. Conditions at work are unpleasant or sometimes even unsafe.

1-Never 2-Rarely 3-Sometimes 4-Often 5-Very Often

32. I feel that my job is negatively affecting my physical or emotional well being

1-Never 2-Rarely 3-Sometimes 4-Often 5-Very Often

33. I have too much work to do and/or too many unreasonable deadlines

1-Never 2-Rarely 3-Sometimes 4-Often 5-Very Often

34. I find it difficult to express my opinions or feelings about my job conditions to my superiors.

1-Never 2-Rarely 3-Sometimes 4-Often 5-Very Often

35. I feel that job pressures interfere with my family or personal life.

1-Never 2-Rarely 3-Sometimes 4-Often 5-Very Often

40. I have adequate control or input over my work duties.

1-Never 2-Rarely 3-Sometimes 4-Often 5-Very Often

41. I receive appropriate recognition or rewards for good performance.

1-Never 2-Rarely 3-Sometimes 4-Often 5-Very Often

42. I am able to utilize my skills and talents to the fullest extent at work.

1-Never 2-Rarely 3-Sometimes 4-Often 5-Very Often