Exploring occupational-related fatigue strategies as perceived by middle managers in Gauteng

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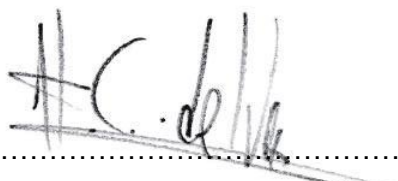
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DECLARATION

I, Hendrik Christoffel de Wet, hereby declare that this mini-dissertation, submitted in partial fulfilment of the requirements for the degree Master of Business Administration at the faculty of Economics and Management Science at the North-West University, is my original work and has not been submitted to any institution of Higher Education. All the sources used for this study are cited and referenced in the reference list.

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ABSTRACT

This study aimed to identify specific factors that may cause occupational related fatigue (ORF) among middle managers in professional careers within a South African metropolis. The problem is that ORF among middle managers in professional careers in South African organisations is under-researched with limited available information regarding the phenomenon's prevalence and preventative strategies to justify the development of ORF management programmes for middle managers. Furthermore, this study aimed to develop organisational strategies that could prevent or provide relief regarding ORF among professional middle managers in a cost-effective and reasonably practicable manner.

The primary objective of this study was to explore and describe the factors contributing to and the strategies preventing ORF among middle managers in professional careers within the consulting sector of the Tshwane metropolis. Various definitions of fatigue in the workplace as well as the limited research that relates to white-collar workers and ORF were outlined. The possible causes, effects and potential management strategies were identified from literature.

A qualitative research approach was adopted in order to explore and describe the ORF factors as experienced by middle managers as individuals and/or groups. Non-probability snowball sampling was used during this study. 13 middle managers were interviewed during three online focus group discussions which acted as the primary data collection method to document the diverse experiences of participants and to seek a deeper understanding of the phenomenon amongst middle managers in a South African metropolis. This process enabled data collection on how ORF is experienced in the office environment and to identify possible mitigating strategies. The fundamental limitation of the study was the small sample size of 13 middle managers.

The most prevalent themes that relate to the participants' perception and experiences of ORF causes and mitigation strategies were identified after which it was evaluated whether these themes are supported by literature, using data triangulation.

The main findings of ORF in answering the research questions are as follows:

ORF among middle management are perceived as having an adverse effect on their mental health; resulting in reduced productivity, resulting in increased conflict and irritability and which is not alleviated by sleep. Participants also found the phenomenon as complex and found it difficult to clearly describe. Participants acknowledged that ORF adversely affects their motivational levels which also may result in failures in their ethical evaluation.

Long work periods and high workload; unclear work expectations; lack of support; inactivity; and inadequate remuneration were identified as contributing factors which increase the risk for the development of ORF.

It has been identified that the defining of clear roles and responsibilities, the provision of training, communication, physical activity, support and compassion, work-life balance and monitoring of fatigue levels may be implemented to reduce the occurrence of ORF.

This study was concluded by highlighting recommendations and managerial implications. The following specific recommendations were made in order to reduce the prevalence of ORF in middle management: Defining clear roles and responsibilities for middle management positions versus other positions in lower and higher management; reducing periods of high workload and long work hours as far as practicable; promotion of physical activity during and after work hours among middle management; promotion of work-life balance practices among middle management; provision of training on the importance of physical activity, work-life balance, and other skills required for persons in middle management positions; and providing better support to middle managers by means of feedback sessions between themselves and senior management.

Key words: management, middle managers, occupation-related fatigue, stress, support, training, physical activity, roles and responsibilities.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS

BCEA   Basic Conditions of Employment Act 75 of 1997

FG   Focus Group

ORF   Occupational-related Fatigue

CHAPTER 1   INTRODUCTION

1.1   Introduction

Occupational-related fatigue (ORF) is regarded as a threat in the office environment that affects all employee levels regardless of position, skill, and educational level. Furthermore, ORF may influence an employee's physical and mental capabilities required to carry out work-related tasks (Pasupathy & Barker, 2012). ORF is an office environment condition in the same way as, for example, silicosis is in the mining industry. It is a source of concern that causes absenteeism in the workplace, which results in reduced productivity and revenue (Health and Safety Executive, 2019), as well as stress, depression, and anxiety disorders (IOL, 2016).

Employees affected by ORF report reduced cognitive performance, which results in reduced performance in terms of attention, vigilance, memory increased errors and, as a result, can lose up to 5,6 hours of productive time per workweek (Muller, 2019). These occupational-related diseases are potentially costing the South African economy an estimated R40,6 billion per annum, which is equal to 2,2 per cent of gross domestic product in total (IOL, 2016). Moving to the United States of America, ORF accounts for an estimated $136 billion per annum of which 84 per cent is due to reduced productivity and performance (Alsco, 2015). ORF contributes significantly towards expenses accumulated through reduced productivity and performance, and the implementation of a successful ORF management programme may contribute to the success of an organisation (Alsco, 2015).

The implementation of ORF management policies may treat and prevent the condition in an organisation. These policies can include a combination of preventive and operational strategies and contain the active participation of all levels within an organisation (Alsco, 2015). It is essential to develop a long-term management plan to prevent and treat ORF effectively. This plan should include, for example, reviewing the organisational ergonomics, employee workload and work-life balance programmes to ensure that an organisation evolves continually to maintain a healthy balance between work responsibilities and personal life (Alsco, 2015). Besides, the identification of factors contributing to ORF may result in the implementation of cost-effective practices and policies. Should 'inhouse' fatigue management, wellness programmes and work-life balance policies be implemented correctly, they should reduce the adverse effects associated with ORF.

The purpose of this study is, first, to explore and determine the prevalence and causes of ORF among middle managers in professional careers within the consulting sector of the Tshwane metropolis and, second, to identify potential organisational strategies that may be implemented to manage ORF in middle managers more effectively.

1.2 Problem statement

Capable employees who are positively engaged with their work are primary drivers of job quality and job satisfaction in the work environment as proven in extensive studies in the United Kingdom. ORF can have a significant effect on employee job satisfaction and happiness (CIPD Community, 2018). Fatigue management research has mainly been done among blue-collar but seldom in white-collar workers, except within the domain of health professionals where much research has been done, as indicated by Google Scholar hits.

Fatigue is a significant problem in modern societies and workplaces, mainly because of high workplace demands, long duty periods, disrupted circadian rhythms, social and societal demands, and sleep deprivation (Sadeghniiat-Haghighi & Yazdi, 2015). The demanding work context of professional employees especially creates a potential occupational risk that results in illness, absenteeism, and reduced productivity and revenue. These problems are potentially the conditions experienced by professionals in the City of Tshwane Metropolitan Municipality in Gauteng, South Africa, which cost the South African economy billions of rands.

Middle management is viewed as the most stressed and overworked occupational category when compared with higher and lower professional groups. Middle managers are more likely to believe that their mental health is affected by their work and showed worse physical health than their colleagues (CIPD Community, 2018). The problem is that ORF among middle managers in professional careers in South African organisations is under-researched; therefore, limited information is available regarding its prevalence and preventative strategies to justify the development of ORF management programmes for middle managers.

1.3 Rationale and significance of the study

This study relates to ORF among middle managers in professional careers within the private sector with a specific focus on factors contributing to and organisational strategies for reducing the prevalence of ORF. This study will benefit organisations employing professional persons and, if ORF is managed well, it will contribute positively to various aspects within organisations.

1.4 Aim and objectives of the study

This study aims to contribute to the scientific body of knowledge of ORF and management by identifying specific factors that may cause ORF among middle managers in professional careers within a metropolis such as Tshwane, Gauteng. This study further seeks to develop organisational strategies that could prevent or provide relief regarding ORF among professional middle managers in a cost-effective and reasonably practicable manner.

The primary objective of this study is to explore and describe the factors contributing to and the strategies preventing ORF among middle managers in professional careers within the consulting sector of the Tshwane metropolis. The following sub-objectives aim to achieve the primary objective of this study:

- Explore and identify the perception of middle managers in professional careers with regard to ORF in the workplace;
- Identify and describe the factors contributing to ORF among professional middle managers in the office environment; and
- Identify and describe organisational strategies that may result in the reduction of ORF among middle managers in professional careers.

1.5   Research questions

The following research questions are aligned with the research objectives, which seek to provide an answer in solving the research problem:

- How is ORF in the workplace perceived by middle managers in professional careers?
- What are the ORF-related factors experienced by middle managers in professional careers?
- What are the proposed organisational strategies for reducing the prevalence of ORF among middle managers?

1.6   Literature review

ORF is one of the most overlooked and underestimated health conditions in the workplace due to the lack of awareness among the labour force (Muller, 2019). ORF is a significant problem in the modern environment due to several causes, which include high job demands, work period length, circadian rhythm disruption, and accumulative sleep deprivation (Muller, 2019). ORF arises because of excessive working time, poorly designed shift patterns, and a high level of workload (Health and Safety Executive, 2020). Furthermore, ORF results in reduced mental and physical performance, slower reaction time, reduced ability to process information, memory lapses, absent-mindedness, decreased awareness, lack of attention, and can result in errors, accidents, ill-health, and reduced productivity (Health and Safety Executive, 2020).

According to Alsco (2015), understanding the underlying causes of ORF is essential to prevent and treat ORF effectively. As a result, the following work-related factors are identified that may result in the development of ORF: long work hours, long hours of physical or mental activity, inadequate break time between activities, insufficient rest, excessive stress, and unsatisfactory working conditions.

Middle management is considered to be a more stressed and overworked occupational category than higher and lower professional groups with these high levels of stress and workload occurring despite the relatively high level of job satisfaction among this group of occupations (Quy, 2001). However, middle managers are more likely to believe that their mental health is affected by their work and further are physically less healthy than their colleagues (CIPD Community, 2018). In addition to physical health, middle managers experience higher levels of depression and anxiety than employees who occupy positions nearest to both ends of the employment hierarchy (Setj *et al.*, 2015). Health and well-being in the workplace are some of the primary drivers of job quality and satisfaction in the work environment in the United Kingdom as it can have a significant effect on job satisfaction and happiness (CIPD Community, 2018).

A contributing factor to ORF amongst middle managers may be the complicated relationship with power in the business environment. Middle managers possess a fair amount of power in their day-to-day work life, which is characterised by repeatedly alternating between interacting with higher and lower-level colleagues, and deferential low-power and assertive high-power behavioural styles, respectively (Anicich & Hirsh, 2017).

High levels of ORF is a risk factor for many health problems, including hypertension and heart disease (Anicich & Hirsh, 2017). Besides, middle managers face psychological pressure in the work environment, which affect their work performance, physical and emotional health adversely (Anicich & Hirsh, 2017). According to (Alsco, 2015), the health status of employees further has a direct impact on employees' fatigue levels. Numerous existing health conditions may aggravate the sensation of fatigue in the human body, including vitamin deficiencies, arthritis, heart problems, diabetes, and cancer.

Undiagnosed and untreated ORF may lead to numerous undesirable effects among middle managers, employees, and the company of employment itself. Although companies attempt to manage ORF, there is a need to investigate if and what environmental factors contribute to ORF among middle managers. Middle management has been subjected to increased monitoring and accountability and increased job insecurity in the work environment (Preston & Loan-Clarke, 2000).

The consequences of low work-life balance include stress, stress-related illness, violence, and a reduced life and job satisfaction (Dawson *et al.*, 2012). Such outcomes have been proven in research to result in increased absenteeism, turnover rates, and healthcare costs as well as reduced productivity, employee satisfaction, and loyalty – all of which may affect organisational performance and profits negatively.

According to Rodrigues (2011), it is apparent that it is difficult for middle managers to separate their work from other aspects of their personal lives. The conflict between their work and personal experience brings with its frustration, stress, and fatigue as respondents are often unable to control the workplace factors intruding on their own lives. Also, technological advances such as laptops, computers, and mobile phones in conjunction with increased organisational expectations mean that these middle managers see more and more of their 'own time' being engulfed by work. Senior managers should provide support for middle managers' efforts to create a balance between their work and personal lives, which may, in turn, assist organisations in achieving their long-term goals. Globalisation and accelerated technological developments contribute to the increased prevalence of ORF (Macias-Velasquez *et al.*, 2019). As part of an employer's corporate social responsibility, business organisations should address global health challenges within the framework of their sustainable development and long-term strategies (Macassa *et al.*, 2017).

The preceding sections established that environmental factors are causing ORF among middle managers in professional careers within various industries. The far-reaching implications of ORF among middle managers and their significance to organisations justify the development of ORF management programmes among middle managers.

The purpose of this study is to explore and determine the prevalence and causes of ORF among middle managers in professional careers within the consulting sector and to develop strategies for managing ORF in middle managers effectively.

1.7   Definitions and key concepts

i)   *Middle manager*

A middle manager is an employee who is two levels below the chief executive officer and one level above line workers and professionals (Quy, 2001).

ii)   *Types of occupational-related fatigue*

According to Alsco (2015), there are two types of ORF:

- Acute fatigue – resulting from short-term sleep loss, heavy physical or mental work. Acute fatigue is of short duration and is treated by sleep and relaxation; and
- Chronic fatigue – a constant, severe state of tiredness that is not relieved by rest nor sleep. Chronic fatigue can last more than six months and interferes with certain activities.

1.8   Research paradigm, methods, and methodologies

In order to engage with participants on a higher level than data gathering, the researcher applied the fundamentals of qualitative research methodologies. This exploratory qualitative research study allowed the researcher to scrutinise people's experiences by using specific research methods such as focus groups, content analysis, visual methods, and life histories (Hennink *et al.*, 2020).

1.8.1   Research paradigm

The paradigmatic perspective describes models about the nature of knowledge and being (Maree, 2007). Moreover, the paradigm addresses critical assumptions about what humans perceive as being the truth, which is referred to as ontology, and what humans imply as knowledge, which is referred to as epistemology (Rubin & Babbie, 2010) in an attempt to make sense of the knowledge and actions, humans utilise interpretivism or the interpretative branch of qualitative research (Walsham, 2006). This study employed an interpretive and descriptive research perspective embedded in a qualitative approach.

1.8.2   Research methodology

Brink *et al*. (2006) refer to research as a scientific process that is followed in a systemic and diligent method in search of discovery and enquiry to increase the knowledge in a specific field/subject. The research methodology in this study consisted of various elements, namely sampling, data collection, ethical considerations, data analysis, and issues relating to literature control. Research is the pursuit of solutions to specific unanswered questions that depend on human efforts. Furthermore, research is the process of arriving at dependable solutions to a problem through the planned and systematic collection, analysis, and interpretation of data, which is an essential process for advancing knowledge (Singh, 2006).

This study involved the collection, processing, and analysing of non-numerical data, including opinions on productivity in the workplace, ORF, employee satisfaction and levels of ORF. Data collected were in the form of open-ended surveys, ideas, perceptions, and thoughts (Bell *et al*., 2018).

The value of qualitative research methodologies, in contrast to quantitative research methodologies, lies in the potential to offer insights into the question of 'why' people engage in particular behaviours (Rosenthal, 2016). As a result, this study aimed to follow a qualitative, exploratory methodology through focus group discussions during which the researcher and several participants met to discuss the research topic (Mack *et al*., 2005). Mack *et al*. (2005) state

that focus groups are useful for capturing social norms and the variety of opinions of views of a population.

1.8.3   Research design

This study followed a qualitative exploratory research approach. It aimed to describe ORF, identify work-related factors contributing to the development thereof, and propose organisational strategies to reduce the prevalence of ORF among middle managers in professional careers.

1.8.4   Demarcation/delimitation of the study

This study applied to participants (middle managers in professional occupations) working and residing in the Tshwane metropolitan area, Gauteng, Republic of South Africa, and focused on the private sector and ORF. In addition, this study aimed to explore ORF among middle managers in the Tshwane metropolitan area, Gauteng, to provide a better understanding of ORF. The Tshwane metropolitan area was selected due to the high concentration of professional occupations in this area when compared with other geographical areas in Gauteng. However, this study did not aim to give final nor conclusive answers to the research questions due to the nature of the research being an exploratory research style.

1.8.5   Population

Research population refers to a group of people who meets the designated set of criteria applicable to the research with susceptible populations referring to the portion of the target population to which the researcher has access to (Burns & Grove, 2005).

This study aimed to understand the phenomenon in its entirety and not to focus on specific concepts. As a result, the information was collected without formally structured instruments. Furthermore, subjectivity was essential for understanding the human experience of ORF in middle management positions (Brink *et al.*, 2006).

The scope of this study applied to participants who met the following criteria:

- Reside in the Tshwane metropolitan area, Gauteng, South Africa;
- Employed in the Tshwane metropolitan area, Gauteng, South Africa;
- Employed in the private sector;
- Pursue a professional career;
- Middle management position within his/her organisation;
- Willing the share his/her knowledge, experience and perceptions with the researcher;
- Willing to participate in online focus group discussions as scheduled; and

- Be proficient in English or Afrikaans.

1.8.6 Sample method/technique and sample size

In research terms, a sample refers to a group of people, objects or items taken from a larger population for measurement. The sample should be representative of the community to enable the generalisation of research findings. We can generalise the results from the research sample to the population (Tuckett, 2004).

This sampling methodology is considered to be non-probability snowball sampling (Rubin & Babbie, 2010) which refers to a technique that uses existing participants to recruit additional participants who meet the inclusion criteria.

1.8.7 Data collection instrument and process

The research aimed to use qualitative research techniques to gather data through structured focus group sessions from participants who met the inclusion criteria. Data collection took place in the form of online focus groups with between three and four participants due to the SARS-CoV-2 pandemic, state of disaster and lockdown regulations in place in the Republic of South Africa at the time of data collection for this research study. Larger focus groups are difficult to control and limit each person's opportunity to share insights and observations. Furthermore, group dynamics change when participants want to but are not able to describe their experiences with smaller focus groups limiting the entire range of experiences due to fewer participants in the group (Krueger & Casey, 2014).

Four online focus groups were initially scheduled, depending on the saturation of data obtained (Krueger & Casey, 2014). Data saturation refers to the point in the data collection process when new information is no longer obtained, which acts as a signal to the researcher that further data collection would yield similar results (Faulkner & Trotter, 2017).

The researcher analysed historical information in an organised and intuitive fashion (Brink *et al.*, 2006) and considered the following aspects during the compilation of the focus group interview guide. As a result, the researcher:

- Structured the questions as short and concisely as possible;
- Structured the queries to only focus on one aspect being studied per subject;
- Structured the questions to be worded unambiguously;
- Used open-ended questions and sentence completion types of questionnaires; and

- Structured questions in a manner that is non-threatening and non-embarrassing to the participants.

The researcher used the following four types of focus group questions during the interview sessions:

- Engagement questions that acted as opening questions to introduce participants to the group and make the participants and the researcher feel comfortable with one another;
- Exploration questions that focused on the topic at hand;
- Follow-up questions that scrutinised issues discussed and topics requiring additional elaboration; and
- Exit questions that acted as closing out inquiries to determine whether participants wanted to include or add anything else.

A focus group interview guide was used to guide the data collection process (ANNEXURE E). The researcher led the discussion by asking the participants open-ended questions that required an in-depth response rather than a single phrase or a simple 'yes' or 'no' answer (Mack *et al.*, 2005). The researcher took notes during the discussion in order to supplement the audio data with non-verbal data to clarify and add contextual details to what participants had non-verbally communicated to the researcher. Focus group discussions were audio- and video-recorded, which supplemented the discussion notes, thereby ensuring adequate documentation of verbal and non-verbal interaction between participants and the researcher.

The focus group data consisted of the following:

- Audio and video recordings;
- Transcripts of the audio recordings;
- The researcher's notes from the discussion; and
- Notes from the debriefing sessions held after the focus group.

It was essential that all focus group members participated actively to gather the appropriate data for this study. The focus group discussion was conducted by the researcher who acted as both the moderator of the discussion and the note-taker.

The moderator's responsibilities (as fulfilled by the researcher) were leading the focus group discussion, posing all questions specified in the focus group question guide, keeping the discussion on track, and encouraging all participants to contribute (Mack *et al.*, 2005).

The note-taker's responsibility (as fulfilled by the researcher) was to take detailed notes of the focus group discussions, which served as supplementary documentation for the discussions. The note-taker was further responsible for tasks relating to audio-recording as well as facilitating logistical activities such as arrivals, departures, and withdrawals (Mack *et al.*, 2005).

The researcher coded the transcripts according to the participants' responses to each question and the most dominant themes emerging across the set of focus group discussions during the data analysis phase of this research process.

1.8.8   Data coding and analysis

A thematic analysis approach was used to analyse the focus group transcripts and collected data. According to Krippendorff (2018), the thematic analysis approach is used to discover, examine, and report patterns within data. Thematic analysis consists of the following five phases (Virginia & Clarke, 2006):

- Phase 1: Familiarisation of data;
- Phase 2: Coding;
- Phase 3: Searching for themes;
- Phase 4: Reviewing themes; and
- Phase 5: Producing the meaning of the themes.

1.9   Ethical consideration

Ethics in research refers to norms for conduct that distinguish between acceptable and unacceptable behaviour (Resnik, 2011). Additionally, acceptable behaviour refers to honesty, objectivity, integrity, carefulness, openness, respect for intellectual property, confidentiality, responsible publication, responsible mentoring, respect for colleagues, social responsibility, non-discrimination, competence, legality, and human subject protection (Resnik, 2011).

During the qualitative research process, the researcher interacted closely with the selected participants. Therefore, ethical aspects were considered carefully. Ethical considerations in qualitative research aim to ensure that nobody is harmed in any way or suffers adverse consequences from the research process. The researcher obtained a written declaration from participants, stating that all predetermined factors have been met (Bell *et al.*, 2018). A researcher has an obligation to the scientific community to respect the rights, needs, values and desires of participants, and part of doing this entailed adhering strictly to the following aspects:

- Obtaining informed consent from participants;

- Zero harm and risk;
- Honesty and truth; and
- Privacy, confidentiality, and anonymity.

Before conducting this research, the researcher obtained informed consent from the Ethics Committee of the North-West University, South Africa. Also, participants in this research were required to read the informed consent form. Signing and dating this form acted as physical proof that participants contributed to this study voluntarily. Participants contributed based on informed consent, which involved the researcher providing a sufficient body of information and assurances about taking part. This process allowed individuals to understand the implications of participation and to reach a fully informed, considered, and freely given decision about whether to participate, without the exercise of any pressure or coercion.

The researcher communicated all information relating to this study honestly and transparently. In addition, the researcher avoided communicating misleading information and representing data in a biased manner. The researcher emphasised that participation in this study was strictly voluntary, and participants had the right to withdraw from the study at any stage if they wished to do so. As a result, if participants did not want to remain for the duration of the discussion, for any reason, they would be reminded of the confidentiality agreement and thanked for their participation during the focus group discussions. However, no participant indicated that he/she did not wish to remain for the duration of the discussion. Furthermore, should the focus group discussion had been interrupted by someone outside the group, the researcher would take the necessary steps in order to protect participants' anonymity, including the temporarily stopping of the discussion and explanation of the private nature of the discussion to the person(s) responsible for the interruption. However, focus group discussions were not interrupted by someone outside the group.

The researcher provided all participants of the focus group discussions with the contact information of the study officials should they require additional/specific information that relates to the research project, their anonymity and confidentiality.

The researcher followed this process of obtaining written permission and informed consent from the participants as a means of maintaining the integrity of the researcher, his supervisor, and the research process.

The researcher ensured confidentiality and anonymity through the following processes:

- The researcher respected the participants and the organisations' privacy during this research;
- The researcher assigned substitution names (focus group number/participant number) to each of the participants. Also, the field notes referred to the substitution names instead of the

11

participants' actual names to ensure that the anonymity of participants was never compromised (Mack *et al.*, 2005);

- Although the researcher assured participants that all information shared during the focus group discussion would be treated confidentially, the researcher could not guarantee that members of the focus group would maintain a similar level of anonymity and confidentiality. As a result, mitigation of the risk of the possible breach for respect and anonymity among the participants included training, education and informing focus group participants at the commencement and conclusion of the sessions of their responsibility to ensure privacy and anonymity of their fellow participants (Mack *et al.*, 2005);

- Should participants of the focus groups have required additional/specific information related to the research project, they would be able to contact the study officials with the contact details of the study officials available on the consent form (Mack *et al.*, 2005); and

- Should participants, after the assurances mentioned above, have felt uncomfortable and wished to withdraw from the focus group discussion, the researcher would respectfully acknowledged and supported their right to do so and thank them for their time and effort. The researcher would then redirect the focus group back to the discussion, taking care to avoid personal commentary (Mack *et al.*, 2005). However, no participant indicated that they wished to withdraw from the focus group discussion.

The researcher followed the following steps to ensure confidentiality:

- The researcher ensured an adequate level of privacy of the research data; and
- The privacy and anonymity of participants were of paramount importance.

In addition to the above-mentioned, the researcher considered the following moral aspects during this research project:

- Not to subject the participants to any harm in any way;
- Prioritise respect for the dignity of all participants;
- Avoid the deception or exaggeration of research aims and objectives;
- Ensure that any affiliations, sources of funding as well as a possible conflict of interest were declared;
- Avoid the use of offensive, discriminatory, or another unacceptable language during the formulation of the focus group questions;
- Acknowledge the work of other authors used in any part of the dissertation through the Harvard referencing system;
- Maintain high levels of objectivity in discussions and analysis throughout the research process;

- Adhere to the Protection of Personal Information Act 04 of 2013 at all times during the research process;
- Adhere to the Copyright Amendment Act 98 of 1978 at all times during the research process;
- Communicate the results of the study to the focus group participants upon completion of the research;
- Not permit outside observers in the focus group discussion as they may breach the anonymity and confidential agreement between the participant and the researcher and also inhibit participants from speaking freely;
- Research data will remain the property of the North-West University of South Africa; and
- Inform participants of the objectives, anticipated risks and benefits of this study in easily understandable language.

1.10 Limitation of the research

Limitations refer to characteristics that limit the scope of the study. Numerous limitations were identified, which are listed below (Simon, 2011):

- The fundamental limitation of the study was the small sample size of 13 middle managers, which permitted the researcher to focus on participant feelings during the research process (Bricki & Green, 2007);
- This study focused on middle managers. Therefore, the findings cannot be generalised to any other occupational group in an organisation;
- This study focused on the consulting sector. Therefore, the findings cannot be generalised to any other industry other than consulting; and
- This study focused on role conflict, roles and responsibilities, organisational ergonomics and employee assistance programmes and their relation to ORF. This study will exclude all other factors influencing ORF in the workplace.

1.11 The organisation of chapters in the study

This section outlines the organisation of the chapters of this study with the intention of providing the reader with a chronological overview of the approach that was followed during the research process.

Chapter 1 provided the reader with a broad overview of the study, discussed the means of data collection, and outlined the problem statement, aims and objectives, and research questions.

Chapter 2 provides the reader with an in-depth literature review with the aim of proving that the researcher has read and researched the topic thoroughly. The chapter further provides the reader with an overview of the most critical literature concepts that relate to the research topic.

Chapter 3 provides the reader with an in-depth overview of the research methodology that was followed in order to answer the research questions and research objectives.

Chapter 4 provides the reader with the context of analysis and interpretation of the qualitative data obtained during the data collection phase of this study.

Chapter 5 concludes the study and provides clarity on the research questions and highlights the recommendations.

CHAPTER 2   LITERATURE REVIEW

2.1   Introduction

This chapter identifies existing research on ORF and provides the reader with an analysis of current information that is relevant to the research topic. In addition, this chapter proves that the researcher has read broadly on the research topic and related content.

According to Gravetter and Forzano (2018), a literature review is conducted to obtain insight and perspective on the phenomenon being studied, which in this study is fatigue. The literature review guided the researcher in formulating a clearly defined problem and research objectives – all of which enabled the researcher to understand and identify mitigating strategies.

2.2   Middle management responsibilities

Middle management is considered as the link between senior leaders and junior or frontline staff and who have a potentially powerful influence on most organisational activities. Middle managers have the following functions or roles in organisations (Hitesh, 2019):

- Creating a friendly work environment;
- Inspiring and motivating support teams to increase efficiency and productivity;
- Creating strategies that may improve the productivity of employees and organisations; and
- Evaluating junior managers.

In addition, Derby (2012) emphasises the responsibility of middle managers in the following organisational functions:

- Maintaining the integrity of products and services;
- Maintaining a working system;
- Establishing and maintaining a cross-functional network for problem-solving;
- Establishing structures for employees to perform their work;
- Promoting a teamwork environment; and
- Promoting self-development of employees.

Derby (2012) and Hitesh (2019) emphasise the importance of middle managers in any organisation to maintain a healthy and productive work environment, which may determine the success of any project that the organisation approaches.

2.3 Occupational-related fatigue

Grandjean (1979) states that fatigue is a general condition that is familiar to all of us in our everyday lives and refers to it as a functional state with numerous intermediate conditions between alertness and sleep. Fatigue further indicates a general sensation of weariness, with specific work activities being inhibited or impaired, but not crippled. It is recognised that the term 'fatigue' is used in a wide variety of everyday applications, which resulted in the meaning of the phrase becoming chaotic, although the distinction between physical and mental fatigue is reasonable (Grandjean, 1979).

Fatigue is associated with reduced levels of efficiency in the workplace. Shen *et al.* (2006) note that sleeplessness and fatigue are both distinct and interrelated phenomenon that are used interchangeably. Chauhan and Thakur (2018) acknowledge that fatigue is a significant problem on an individual, organisational, and societal level while Caldwell *et al.* (2019) consider fatigue to be a side effect of modern industrial society. Dubin *et al.* (2020) regard fatigue as a deceptive health condition with most employees having the perception that ORF is effectively manageable as part of their daily routine. However, Ricci *et al.* (2007) observe that ORF occurs in conjunction with other health-related conditions, which complicates the self-management thereof. According to Barret (2018), tiredness, weariness, sleepiness; irritability; reduced alertness, concentration, or memory; increased mistakes or lapses in judgement; headaches; and increased susceptibility to illnesses may be warning signs of fatigue developing among employees. ORF, however, lacks a clear, concise, and scientifically recognised definition with various definitions outlined in Table 2-1 below.

Table 2-1   Definitions of occupational-related fatigue

Definition number	Definition
Definition 01	Ishii *et al.* (2014) define fatigue as a reduced ability and efficiency of both mental and physical activities as a result of excessive mental and physical activities.
Definition 02	"Fatigue is the state of feeling very tired, weary or sleepy resulting from insufficient sleep, prolonged mental or physical work, or extended periods of stress or anxiety. Boring or repetitive tasks can intensify feelings of fatigue. Fatigue can be described as either acute or chronic" (Canadian Centre for Occupational Health and Safety, 2017).
Definition 03	Barker and Nussbaum (2011) define ORF as a multi-dimensional state among employees who are exposed to demands through their work tasks, environment, and schedules, which interfere with their physical and cognitive abilities to function at standard capacity.

2.4   Limited research and implications

Fatigue is a complex phenomenon with numerous conceptualisations and definitions with the countermeasures and management strategies remaining subjective (Shen *et al.*, 2006). Newton *et al.* (2011) and Swart and Sinclair (2015) acknowledge that the origins of fatigue are undetermined, and that the absence of an internationally acknowledged definition thereof affects the diagnosis and management of the condition adversely. However, although Porrello *et al.* (2018) recognise that our understanding of ORF is improving, they admitted that the effectiveness of the management and countermeasures thereof lack scientific appraisal.

Zhu *et al.* (2017) consider fatigue to be a complex, multi-dimensional phenomenon that is task- and occupation-specific with limited knowledge available, which affects the measurement and management thereof adversely among middle managers. Furthermore, DeLuca (2007) indicates that scientists lack a clear understanding of ORF with limited research available on ORF among middle managers specifically, since studies conducted on ORF focused primarily on shift work, circadian rhythms, and shift scheduling. These factors form the basis of fatigue risk management programmes (Bae & Fabry, 2014), thus limited ORF management strategies are applicable to middle managers.

Ahmed *et al.* (2016) note that a limited number of studies have investigated the impact of demanding emotional professions on employees and their families. The consequence is a narrow understanding of the impact of demanding mental jobs on ORF. This suggests that the absence of a recognised definition and lack of research focusing on ORF among middle managers affect our understanding of the impact on middle managers and their families, which further influence the development and management strategies thereof.

2.5   Causes of fatigue

This section outlines the causes of ORF to assist in the design of management programmes among middle managers staff with the aim being to reduce the prevalence of ORF. Ismail *et al.* (2019) and Maynard *et al.* (2020) highlight the multifaceted nature of factors that result in the onset of ORF, which are outlined in this section.

Grandjean (1979) argues that weariness and fatigue might be considered as nature's protective mechanism, which discourages humans from overstraining themselves and allowing time for recuperation in the process. This argument is supported by Boksem and Tops (2008), suggesting that the sensation of fatigue occurs in order to abandon a behaviour when energetical costs exceed the perceived rewards of the behaviour or activity. In addition, Hobbs *et al.* (2011) state that both work-related and personal factors contribute to fatigue prevalence in the workplace.

2.5.1 Monotonous activities

Monotonous activities result in the development of mental fatigue, which is associated with a reduced cognitive performance occurring within 10 minutes among employees participating in these activities. The reduction in cognitive performance and elapse of time during the monotonous activity are directly proportional to each other (Boksem & Tops, 2005; Bonnefond et al., 2010; Jensen, 2003; Kato et al., 2009). This suggests that monotonous activities in the workplace may increase the risk of developing ORF.

2.5.2 Work time and workload

Barker and Nussbaum (2011) argue that long work periods are associated with higher levels of fatigue among employees. This argument is supported by Querstret *et al.* (2020) who acknowledge the adverse impact of extended and irregular work periods on the quality of sleep and sleeplessness, which ultimately leads to an increased risk of developing ORF. Sadeghniiat-Haghighi and Yazdi (2015) also recognise the significance of ORF as a problem in the modern environment that may be ascribed to high workplace demands and extended work periods, among others. Although Ahmed et al. (2014) suggest that a high workload and extended work periods are associated with an increased risk for the development of ORF, they emphasise that the functional relationship between high workplace demands and extended work periods and ORF is unclear. Helkavaara (2013) considers high workplace demand as a factor affecting ORF and employee well-being regardless of gender differences. In addition, Santos *et al.* (2016) notice that the prevalence of ORF is directly proportional to the hours of overtime worked, which suggests that extended work periods are associated with the development of ORF. Santos *et al.* (2016) point out that the prevalence of ORF increases among employees closer to the end of a regular workday. In addition, Ilies *et al.* (2015) acknowledge that high levels of workload affect work-family conflict.

Furthermore, the Republic of South Africa regulates the working time of employees in various sections in the Basic Conditions of Employment Act 75 of 1997 (BCEA), including, but not limited to section 7, section 9, section 10, and section 70. Section 7 requires every employer to regulate the working time of all employees and to consider their health and safety. Furthermore, concerning regular work hours, section 9 prohibits an employer from requiring an employee to work more than 45 hours in any week or nine hours in any day if the employee works five days or fewer per week, inclusive. Alternatively, section 9 further prohibits an employer from requiring an employee to work more than eight hours in any day if the employee works more than five days per week. In addition to sections 7 and 9, section 10 prohibits an employer from requiring an

employee to work more than ten hours' overtime per week and also prohibits an employer requiring an employee to work more than 12 hours continuously on any day.

Sections 7, 9, and 10 of the BCEA compel organisations to regulate the hours of work of their employees properly. Section 70, however, prohibits a labour inspector from issuing a compliance order as a result of a failure to comply with the BCEA if an employee earns more than the threshold, which was set at R205 433,30 per annum with effect from 01 July 2014 as prescribed by the Minister in terms of section 6(3) of the BCEA. The result is that employers are not compelled to regulate the work time of employees earning in excess of R205 433,30 per annum, which may potentially include middle managers.

2.5.3 The environmental work factors

Barker and Nussbaum (2011) suggest that environmental work factors such as office temperatures and workplace illumination levels affect the prevalence of ORF. This argument is supported by Norback *et al.* (1990) who indicate, through self-administered questionaries as well as environmental factor workplace measurement programmes, a positive relationship between symptoms such as headaches, fatigue experienced in the workplace and sick building syndrome. Furthermore, Nelson *et al.* (1984) conclude that a warm office environment increases the risk of the development of ORF.

2.5.4 Lack of sleep

Caldwell *et al.* (2019) consider insufficient sleep time and disrupted sleep patterns as two substantial causes of fatigue prevalence among employees, with Chauhan and Thakur (2018) and Sadeghniiat-Haghighi and Yazdi (2015) recognising disrupted circadian rhythms and cumulative sleep debt as the primary causes of ORF developing in the workplace. A disrupted sleep circadian rhythm is also identified by Maynard *et al.* (2020) as a significant contributing factor to the development of ORF amongst construction workers.

2.5.5 Inactivity among employees

Newton *et al.* (2011) ascribe a lack of physical activity as a contributing factor to administrative workers developing ORF. This argument is supported by Van der Ploeg *et al.* (2013) who acknowledge the significant increase (4,7 hours) in weekly sedentary work-related tasks observed between 1975 and 2005 in the Netherlands with Mar (2010) noticing an increase in mentally demanding and sedentary jobs form 18 per cent to 60 per cent during the twentieth century. Ahmed *et al.* (2016) ascribe the possibility of the increased prevalence of ORF due to the growing imbalance in the use of the body's physical and mental resources. Ahmed *et al.* (2016) further

recognise that there is an increasing number of mentally demanding jobs in the modern era, which contributes to the increasing imbalance in the use of body resources and, ultimately, increases the risk of developing ORF.

2.5.6 Organisational factors

Lerman *et al.* (2012) note that numerous organisational factors may contribute to ORF with Kashyap and Sinha (2010) identifying workplace conflict, poor relations, and organisational politics as contributing factors. This argument is supported by Ismail *et al.* (2019) who recognise that occurrences such as work-family conflict, sexual harassment, physical violence, and workplace bullying may be significant contributors to the development of ORF. Besides, Chen *et al.* (2020), through a process of regression analysis, identified numerous factors influencing fatigue among employees, including workplace satisfaction, occupational-related injuries, adverse life events, and employment type. Furthermore, Arnold (1999) identifies the number of employees employed by the organisation; nature of the business; nature and extent of supervision; remuneration practices; fatigue awareness among staff; and employees' perceived work quality as factors that may affect the risk of developing ORF. Inadequate line manager support was identified by Hunsaker *et al.* (2015) as a precursor for developing ORF. Juevesa *et al.* (2020) acknowledge unclear work expectations as a significant contributing factor to fatigue in the workplace. Furthermore, Lock *et al.* (2018) recognise that inadequate remuneration may affect the levels of fatigue perceived in the workplace.

2.5.7 Personal traits suspectable to occupational-related fatigue

People with the following personal characteristics are considered to be at a higher risk of developing ORF in the workplace than people with personal characteristics not listed below:

- High perfectionism (White & Schweitzer, 2000) which refers to a personality style characterised by a person's concern with striving for flawlessness and perfection and is also accompanied by critical self-evaluations and concerns regarding others' evaluations;
- High neuroticism (Prins *et al.*, 2006) which refers to a personality style which are very emotionally reactive, meaning that they will have an emotional response to events that would not affect most people; and
- Low extraversion (Prins *et al.*, 2006) which refers to a personality style which are predominantly interested in one's own mental self and are also typically perceived as reserved and reflective.

2.5.8 Underlying medical conditions

Finally, ORF may be an indication of underlying medical conditions if it occurs for a prolonged period, is severe, becomes progressive, or occurs without provocation (U.S. National Library of Medicine, 2020).

The high number of potential causes of ORF suggests and supports Sadeghniiat-Haghighi and Yazdi (2015) argument that the prevalence of ORF is not the result of experiencing mere one of the causes thereof, and instead suggests that it is the result of experiencing causes of ORF collectively and over an extended period.

2.6 Effects of fatigue

The section outlines the possible impact that ORF may have on employees and employers in order to quantify the monetary implication thereof.

2.6.1 Employee efficiency

Grandjean (1979) recognises that fatigue in the workplace reduces employee efficiency, an argument that is supported by Barker and Nussbaum (2011) who find that the level of employee fatigue and perceived work performance are inversely related to each other. Furthermore, Aasman *et al.* (1988) conclude that high workload has the potential to result in less efficient mental performance with (Kluge *et al.*, 2000) finding that mental fatigue is associated with an increased number of work errors. Also, Boksem and Tops (2005) establish that goal-directed work activities are affected adversely as a result of mental fatigue with Steege *et al.* (2017) emphasising that an elevated level of ORF increases decision-making time. This suggests that workplace efficiency is affected adversely by ORF – a factor that may influence company revenue in the long term. In addition, reduced levels of efficiency result in extended work periods, which in turn increase the risk of developing ORF.

Guastello *et al.* (2013) and Zarei and Gholamian (2011) identify the inverse relationship between cognitive power and fatigue when comparing fatigued with non-fatigued personnel. This argument is supported by Van Dam *et al.* (2011) who find that reduced levels of cognitive functions are associated with ORF. Bushmaker *et al.* (2019), in addition, identify a direct relationship between mistakes and levels of fatigue that may be ascribed to a reduced thoroughness as a result of ORF and that potentially affects the ethical decision-making process.

2.6.2 Physiological factors

Grandjean (1979) recognises physiological conditions such as headaches, irregular heartbeats, loss of appetite and digestive problems, among others, as factors that may be caused by ORF. In addition to the physical symptoms, Mehta and Parasuraman (2014) suggest that fatigue interferes with the prefrontal cortex and, as a result, it adversely influences the motor output that requires both physical and mental cognitive interpretation, thereby suggesting that ORF affects the physiological functions of the human body adversely. Ricci *et al.* (2007) state that in the United States of America, the annual monetary cost associated with fatigued workers is approximately $136,4 billion accumulated health cost compared with the $101,0 billion cost related to non-fatigued workers. The impact of ORF on physiological factors in the human body suggests that ORF may increase the accumulated employee health costs, which affect company revenue negatively. In addition, Muller and Apps (2019) suggest an inverse relationship between the level of fatigue and employee motivational levels.

2.6.3 Client satisfaction

Steege *et al.* (2017) recognise the negative relationship between ORF levels among employees and clientele satisfaction in service industries, which suggests that client service and satisfaction are adversely affected by elevated levels of ORF. Client dissatisfaction is a factor that may affect annual turnaround negatively, which highlights that ORF does not affect employees responsible for servicing clients because client service satisfaction and employee fatigue levels are inversely proportional.

2.6.4 Employee tenure and well-being

Steege and Rainbow (2017) identify employee tenure as a factor that is affected adversely by ORF in the workplace whereas Chen *et al.* (2020) note that workplace fatigue has the potential to affect employee well-being, including employees' work-life balance, adversely. The impact of fatigue on employee tenure and their well-being suggests that fatigued employees are more likely to seek alternative employment. Furthermore, fatigue levels experienced at work may affect employees' well-being and work-life balance negatively.

2.7 Fatigue types

This section outlines the types of fatigue experienced by employees in a workplace environment.

2.7.1 Mental fatigue

Tanaka *et al.* (2014) define mental fatigue as a psychological state that is caused by prolonged periods of demanding cognitive activity and further state that mental fatigue may manifest in the form of reduced efficiency in mental or cognitive performance. This is supported by Sartang *et al.* (2019), who recognise that the level of resources required to meet performance criteria is influenced by mental fatigue.

2.7.2 Physical fatigue

Grandjean (1979) acknowledges that physical fatigue refers to muscular fatigue while Gawron *et al.* (2001) recognise a reduction in physical work capacity during physical fatigue that develops as a result of overstressed muscles and that is acutely painful.

2.8 Physiology of fatigue

Grandjean (1979) notes the two control systems in the brain with one being responsible for increasing the activation of and the other for decreasing the cerebrum activity. The reticular activating system and specific centres of the limbic system increase the activation of the cerebrum. This is supported by Tanaka *et al.* (2014) who describe that the stimulation and inhibition systems in neural pathways are responsible for regulating cognitive task performance in the brain, thereby influencing fatigue.

Grandjean (1979) observes that numerous structures in the brain and brainstem regulate the functional level of a person. Caldwell *et al.* (2019) acknowledge that ORF is a biological phenomenon that occurs as a result of numerous factors, including time away from work; time of the day; workload; health status and comorbidities; and leisure activities. Caldwell *et al.* (2019) further recognise that fatigue is the result of two major biological factors, namely the homeostatic driver for sleep and the circadian rhythm of the human body.

2.8.1 Mental and physical fatigue – different physiological functions

Grandjean (1979) confirms that mental and physical fatigue is the result of various physiological processes in the body. Tanaka *et al.* (2014) demonstrate that continuous mental activity results in changes in the prefrontal cortex, which manifest with an increased frequency in beta waves in this brain area and include sensations such as sleeplessness. However, Tanaka *et al.* (2014) emphasise that the physiological mechanisms associated with mental fatigue are not fully understood, which adversely affects the management and treatment thereof. Ishii *et al.* (2014) recognise that the neural mechanisms that relate to mental fatigue and cognitive task performance are more complex than initially thought. In a study conducted among administration

personnel, Sartang *et al.* (2019) demonstrated that the relationship between mental workload and ORF is directly proportional, with the increase in mental workload being associated with increased levels of ORF.

2.9 Management strategies

Fatigue management is an emerging approach in the fields of management science and production organisation. Butlewski *et al.* (2018) consider ORF as a manageable risk factor in the workplace. Effective management of ORF is potentially the next step to organisational excellence that enables employee well-being as part of an organisation's corporate social responsibility.

This section outlines the aspects that may be included in a fatigue risk management programme in order to prevent and treat the condition effectively in the workplace. Maynard *et al.* (2020) acknowledge that workplace fatigue is not addressed adequately, and that the effective management thereof requires a multi-dimensional approach that includes altering employee wellness programmes. Sadeghniiat-Haghighi and Yazdi (2015) consider an effective fatigue risk management programme as an approach consisting of numerous factors in order to manage ORF effectively. In support of the multi-dimensional approach, Maynard *et al.* (2020) recognise that fatigue management should include the active participation of both employees and employers on all organisational levels.

2.9.1 Work-life balance

Grandjean (1979) proposes that the adequate planning of employee work and rest periods be included in fatigue management programmes to mitigate the risk associated with ORF, thereby recognising the importance of the recuperation process to maintain a healthy and efficient workforce. The aim is to create a balance between stressors and activities in the recuperation process within a 24-hour cycle.

Peng *et al.* (2019) emphasise the importance of controlling the number of overtime hours worked with the subsequent reward thereof being essential for employee well-being. The authors further recognise that most negative effects associated with compulsory overtime might be mitigated effectively in the short term by fair compensation for the overtime worked.

Van Hooff *et al.* (2011) also highlight the importance of leisure activities in work as well as non-work environments among employees and identify the beneficial effects for those employees who engage in these activities. In addition to leisure activities, Aryee *et al.* (2012) recognise that break periods significantly reduce fatigue amongst white-collar workers and support the recovery of ORF among employees. Furthermore, Barck-Holst *et al.* (2015) perceive the beneficial effect

associated with reduced work hours on the recuperation process of ORF, such as restorative sleep on both weekends and workdays. In addition, Roberts *et al.* (1991) indicate that high job control or high job social support is required to enhance managers' intrinsic motivation in the workplace.

2.9.2 Training programmes

Wang *et al.* (2016) observe that current employee wellness programmes, including training, focus primarily on employee skills, their time management, and legislative requirements, but lack real-life examples, implementation and execution. In addition, Wang *et al.* (2016) suggest that experienced employees are not merely managing their time effectively, but have developed the required soft skills to subconsciously manage their work constraints in such a manner that it results in a reduced risk of developing ORF. Considering the aforementioned, Wang *et al.* (2016) propose that these skills be documented, which will contribute to the body of knowledge that relates to ORF in the field and assist in the inclusion of these soft skills in training programmes for prospective middle managers.

Butlewski *et al.* (2018) and Gander *et al.* (2011) emphasise the importance of both employers and employees understanding the causes and consequences of ORF in order to ensure that all role players in the work environment contribute and adhere to fatigue risk management programmes. This will assist, among others, with establishing responsible behaviour patterns amongst employees and employers through training programmes. Caldwell *et al.* (2019) point out that education programmes should form an essential part of fatigue risk management programmes in the workplace.

In addition to the overall causes and consequences of ORF, Sadeghniiat-Haghighi and Yazdi (2015) emphasise the importance of having an overall understanding of the circadian rhythms, cumulative sleep loss, and recovery periods that are required after a high-intensity work period. For both employees and employers, having an understanding will contribute to the development of effective fatigue management programmes in the workplace. This suggests that information about circadian rhythms, cumulative sleep loss and recovery periods be included in fatigue management training programmes in order to increase awareness.

2.9.3 Employee fatigue monitoring programmes

Cavuoto and Megahed (2017) propose the implementation of existing technological wearable devices on a real-time basis among employees to monitor the development of fatigue in the workplace. Zhu *et al.* (2017) establish that heart rate, sleep time and efficiency trends are considered as three of the most popular and reliable metrics for measuring ORF. This suggests

the availability of technology that will enable the real-time monitoring of employee fatigue levels, which may form part of an ORF management strategy.

2.9.4 Healthy work environment

Magnifico *et al.* (2001) and Norback *et al.* (1990) note the effect of environmental factors that influence the work environment, such as workplace illumination and temperature levels, on employee psychological wellness. Nelson *et al.* (1984) support this argument by acknowledging the substantial effect of indoor air temperature levels on employee productivity. This emphasises the importance of including a healthy work environment in an ORF management strategy.

2.9.5 Active lifestyle

Ellingson *et al.* (2014) recognise the potential beneficial effect of physical activity on energy and fatigue levels among office workers, an argument that is supported by Park *et al.* (2018) who indicate a reduced level of fatigue due to physical activity amongst older employees.

2.9.6 Psychosocial work factors

Helkavaara (2013) acknowledges the various psychosocial work factors associated with fatigue, which include job demands, organisational justice and bullying in the workplace – all of which should be considered by an organisation while developing a fatigue management strategy. This suggests that organisational justice and workplace bullying should be prevented by implementing disciplinary action against guilty parties in the workplace.

2.9.7 Implementation and shared responsibility

Gander *et al.* (2011) suggest that the development of a fatigue risk management programme without the practical implementation thereof is deemed to fail. Subsequently, they propose that the implementation of fatigue risk management programmes be handled with similar seriousness and essence as any other project with monetary value.

Finally, Gander *et al.* (2011) and Lerman *et al.* (2012) emphasise the incorporation of shared responsibility between employers and employees when designing and implementing an ORF management programme, which may include a well-established communication network between various organisational levels.

2.10 Fatigue management strategy

Gander *et al.* (2011) state that the following aims and objectives should be considered during the development of a fatigue risk management programme:

- Reduce the likelihood of employees being fatigued at work; and

- Mitigate the risk presented to fatigue-impaired employees.

Gander *et al.* (2011) furthermore propose including the following aspects in any fatigue risk management programme:

- Fatigue risk management policy;

- Education and awareness training programme;

- Fatigue reporting mechanisms with associated feedback; and

- Procedures and measures for monitoring fatigue levels among employees.

2.11 Summary of chapter

This chapter highlighted various definitions of fatigue in the workplace as well as the limited research that relates to white-collar workers and ORF. In addition, it was emphasised how the limited research on ORF negatively affects the effective management thereof in the workplace. This chapter further outlined the causes and effects of ORF as background information on the importance of management thereof. Finally, this chapter concluded by outlining potential management strategies and aspects that should be included in a fatigue risk management programme. The next chapter outlines the research methodology that was followed during this research process.

CHAPTER 3   RESEARCH METHODOLOGY

3.1   Introduction

This study aims to contribute to the scientific body of knowledge on ORF and management thereof by identifying specific factors that may cause ORF among managers in professional careers within a metropolis such as Tshwane, Gauteng. In addition, this study seeks to develop organisational strategies that could prevent or relieve ORF among middle managers in a cost-effective and reasonably practicable manner. Accordingly, a qualitative research approach was adopted to address the study's aims and objectives.

Chapter 1 clarified that ORF among middle managers in South Africa is a field of study that has not been researched comprehensively. Furthermore, Chapter 2 outlined an in-depth literature review on ORF among middle managers in professional careers and aimed to provide an in-depth understanding of the methodology applied in the study process.

The research methodology is a keystone chapter in the mini-dissertation process as the occurrence of an error or weakness in this phase may invalidate the research data and findings. Bricki and Green (2007) recognise that the research design acts as an outline of the research plan, which subjectively guides the study during the data collection and analysis phases. Babbie (2007) argues that the research process is often an indication of how the researcher thinks about the world and how information and knowledge are obtained.

This chapter provides clarity on the method followed to gather data, as well as the research methodology application that was followed during this research process with the aim being to provide a pragmatic overview. Although all effort was made to include the steps that were followed during this research process, the reader should consider that it is impossible to cover all steps and actions taken due to the broad extent of this qualitative study.

3.2   Research design

The research design outlines the systematic process of data collection and analysis, which was followed to answer the research questions and objectives of this study (Mitchell & Jolley, 2012). A qualitative research approach was adopted during this study, which according to Hoepfl (1997), seeks to understand the phenomenon to explore and describe ORF among middle managers in professional careers as well as to address the aims and objectives of the study as outlined in Chapter 1.

Creswell and Poth (2016) note that a qualitative research approach is a method of exploring and understanding the outcome of individuals or groups to social and anthropological problems. Mitchell and Jolley (2012) furthermore acknowledge that a good research design enables the researcher to avoid bias during the data collection and analysis phases of a study. Babbie (2007) suggests that various paradigms have been developed in social sciences; however, Merriam and Tisdell (2016) state that qualitative researchers do not discuss philosophical perspective and paradigms consistently.

The researcher used online focus group discussions as a data collection method to document the diverse experience of participants, which enabled him to acquire information on how ORF is experienced in the office environment and to identify possible mitigating strategies.

3.3   Research approach

ORF among middle managers is regarded as an under-researched area in South Africa. In order for the researcher to explore and describe this phenomenon more clearly, a qualitative exploratory research approach was employed. The qualitative research approach enabled the researcher to gain more insight into everyday events in participants' lives that contribute to ORF (Sandelowski, 2010). The researcher specifically explored management's perceptions on ORF, the contributing factors, and possible mitigating strategies to prevent the development thereof in order to manage the identified risks of contributing factors.

In order to obtain information on ORF from middle managers and to be able to explore and describe the phenomenon of ORF, the researcher developed a clear problem statement as outlined in Chapter 1.

Maykut and Morehouse (1994) recognise that the qualitative research approach involves a small number of participants during the data collection phase until data saturation is reached. Participants were requested to give their opinions, perceptions, causes and possible mitigating strategies on ORF. Also, the subjective experiences of participants were taken into account during the data analysis phase. The aim was to obtain as much information as possible to explore and describe the possible mitigating strategies. The phases that were followed during the research process are outlined in Table 3-1. The steps that were followed during the data coding process, which is considered to be an iterative process, are outlined in Table 3-2. All the steps, as outlined in Table 3-1 and Table 3-2, are discussed in detail throughout this chapter.

Due to the research approach followed during the study, quantifiable data would not be obtained; instead, the expectation was that the data would lead to hypothesis generation (Hoepfl, 1997).

As a result, the study did not aim to give the final and conclusive answers to the research questions due to the nature of the research being an exploratory research approach.

Table 3-1   Phases of the research process

Phase	Description
Step 01	Preparation of the fieldwork
Step 02	Data collection process
Step 03	Data analysis process (refer to Table 3-2 below for different phases)
Step 04	Results and findings (outlined in Chapter 4)
Step 05	Conclusion (outlined in Chapter 5)

Table 3-2   Steps of the data coding process

Coding Steps	Description
Phase 01	Familiarisation of the data
Phase 02	Data coding (open, axial, and selective coding)
Phase 03	Searching for themes
Phase 04	Reviewing of themes
Phase 05	Interpreting the meaning of themes

3.4   Sampling

This section outlines the study population; research setting; sample selection; and sampling process, which is applicable to this study.

3.4.1   Study population

Research population refers to a group of people who meets the designated set of criteria applicable to the research. Delport *et al.* (2011) state that the research sample is the number of participants chosen to participate in a study with susceptible populations referring to the portion of the target population to which the researcher has access to (Burns & Grove, 2005).

The scope of this study applied to participants who met the following criteria:

- Reside and be employed in the Tshwane metropolitan area, Gauteng, South Africa;
- Employed in the private sector;
- Pursue a professional career;

- Appointed in a middle management position within his/her organisation;
- Willing to share his/her knowledge, experience, and perceptions with the researcher through online focus group discussions as scheduled; and
- Be proficient in English or Afrikaans.

3.4.2   Research setting

Brüggen and Willems (2009) compared online and offline focus groups discussions and found that offline focus groups have the highest depth and are the most efficient, which leads to high-quality outcomes during the research process. This indicates that offline focus groups remain superior to online focus group discussions. However, the researchers recognise the value of spontaneous reactions of participants during online focus groups and consider it to be sufficient for research purposes. An online platform acted as the research setting due to the SARS-CoV-2 pandemic, state of disaster and lockdown regulations in place in the Republic of South Africa at the time of data collection, which was convenient to all participants. The dates of the research settings are outlined in Table 3-3 below.

Table 3-3   Dates of the research setting

Focus Group number	Date of online focus group
Focus Group 01	13 August 2020
Focus Group 02	15 August 2020
Focus Group 03	23 August 2020
Focus Group 04	25 August 2020

3.4.3   Sampling process

The sampling process used non-probability snowball sampling, which refers to a process in which participants recruit other subjects from the study population (Rubin & Babbie, 2010). This sampling process proved to be helpful as potential participants were recruited on the recommendation of previous participants, which ensured that anyone who was directed to the study met all the inclusion criteria. Also, the recruitment process continued until data saturation had been reached (Maykut & Morehouse, 1994), which occurred after the third focus group discussion.

3.4.4   Sample selection and sample size

3.4.4.1   Participant recruitment

Potential participants who met the inclusion criteria were invited to participate in the study via an e-mail (refer to Figure 3-1). This recruitment process proved to be successful as it was convenient to the researcher and participants. The invitation outlined the purpose of the study and stated that focus group discussions would take place over an online platform due to the current lockdown regulations in place at the time of the data collection phase. Furthermore, the contact details of the researcher's supervisor were provided to the participants in the event that they would require additional detail to the study. The following documentation was included in the invitation e-mail:

- Ethical approval document from the Economic and Management Sciences Research Ethics Committee (Annexure A);
- Letter of introduction and informed consent (Annexure B); and
- The interview guide (Annexure E).

After participants had been invited to the study process, informed consent was obtained, and their availability was confirmed. The participant recruitment process was finalised by providing the participants with an electronic link via e-mail to the online meeting on the scheduled date. The research sample for this study was 13 middle managers, which proved to be adequate as data saturation was reached due to the repetition of demonstrated themes during the online focus group discussions.
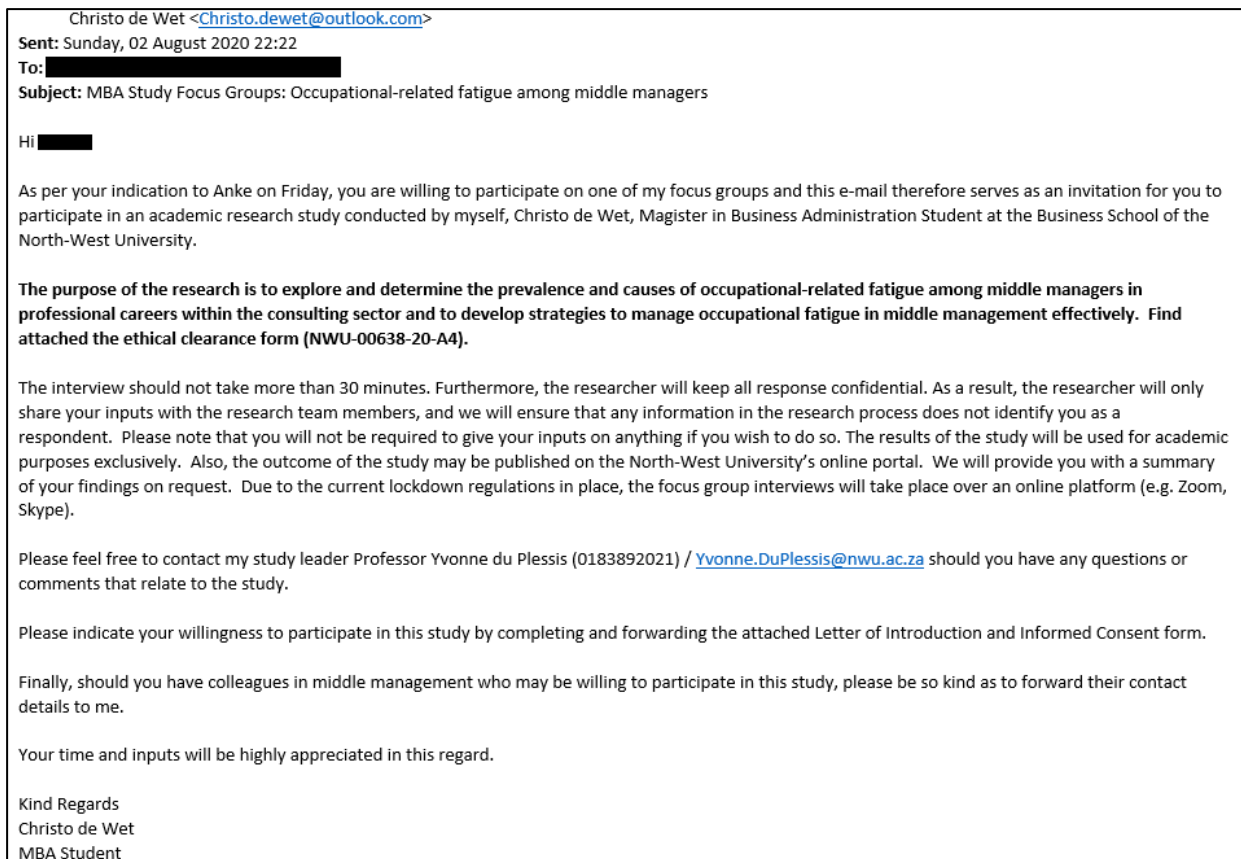
Figure 3-1   Example of the invitation e-mail sent to potential participants

3.4.4.2 Role of the researcher

The researcher conducted an in-depth literature review to obtain a sufficient understanding of ORF among management in professional careers. This in-depth literature review assisted the researcher in defining and designing a problem statement, research questions, aims, objectives and research methodology. The next step was to obtain ethical approval from the Economic and Management Sciences Research Ethics Committee to ensure that the study would be conducted ethically and in a transparent manner. Following ethical approval, the researcher recruited participants who met the inclusion criteria.

The researcher played a mediating role during focus group discussions and supplemented the transcribing data with field notes. In addition, the focus group sessions were video-recorded to ensure that non-verbal communication was included in the data collection and analysis phases. Furthermore, it was the researcher's responsibility to ensure that all participants had the opportunity to provide their opinions and perspectives on ORF. Following the online focus group discussions, the researcher was responsible for the immediate gathering, analysis, and interpretation of gathered data.

3.5 Data gathering

Quantitative and qualitative data gathering differ in the sense that the latter is less structured and adapts to the situation and objectives of the study. Furthermore, qualitative data collection enables a more personal interaction between the researcher and participants (Maykut & Morehouse, 1994). Triangulation refers to the use of multiple data or sources in qualitative research to develop a comprehensive understanding of the phenomenon included in the study (Patton, 1999). Carter *et al.* (2014) state that method triangulation is used frequently in the qualitative research approach. In order to enable triangulation, the verbal data, visual data (by observing participants during the online focus group discussions) and field notes were included in the data collection process.

Data were gathered in a manner that disrupted the lives of participants as little as possible, with the method and nature of this study being influenced by the objectives as outlined in Chapter 1 and the literature findings in Chapter 2.

Preparation enabled the researcher to be in control of the interview process, with Rubin and Babbie (2016) recognising that interview preparation empowers researchers about the topics at hand. As a result, the researcher conducted pre-interview exercises to improve instrumentality and prevent potential biases (Chenail, 2011).

Open-ended questions within online focus group discussions kept the atmosphere relaxed, which was beneficial to the study as participants shared their beliefs, perceptions, and experience with more ease (Coolican, 2014). The structure of the interview questions was informed by literature findings, with the semi-structured interviews enabling the researcher to deviate from the format of the interview guide to understand the nature of ORF among middle managers in professional careers.

The following three types of questions were used during the focus group discussions:

- Engagement questions that opened the session where the participants and the researchers got to know one another;
- Exploration and follow-up questions that focused on the topics at hand and, if required, led to discussions and follow-up questions regarding the issues that were discussed; and
- Exit questions that closed out enquiries to determine if participants wanted anything else to be included.

The researcher reviewed and assessed the questions between focus groups sessions to rephrase concepts that were discussed during previous focus group sessions.

3.5.1 Introduction to the online focus groups

Neergaard *et al.* (2009) state that focus groups are common in qualitative descriptive studies in order to gain insight into a subject, which in this case is ORF among middle managers. Also, focus groups provide richer data as members participating in sessions are prone to probe one another and, as a result, stimulate a discussion on the research topic at hand. Stewart *et al.* (2007) note that focus groups are used to obtain background information, stimulate new ideas, and generate ideas of participants that relate to the study. During this study, the focus group sessions served all these purposes outlined above.

Focus group sessions as a data collection tool have various advantages, such as being a useful and affordable data collection tool that can be used to interview participants simultaneously. Focus group sessions are further cost-effective and elucidate participants' views (Stewart *et al.*, 2007).

3.5.1.1 Number and size of focus groups

Four online focus group sessions were conducted with three sessions having three participants per session, and one session having four participants. As a result, a total of 13 middle managers participated in the discussions with some participants contributing more than others. However, none of the participants joined a focus group session on more than one occurrence. Data saturation was reached after the third focus group session with one additional session conducted to confirm the data saturation. The demographical data of participants are outlined in Table 3-4 below.

Table 3-4   Demography of participants

Participant	Profession	Residential and work location
Focus Group 01 – Participant 01	Building engineer	Tshwane metropolitan area
Focus Group 01 – Participant 02	Chemical engineer	Tshwane metropolitan area
Focus Group 01 – Participant 03	Auditor	Tshwane metropolitan area
Focus Group 02 – Participant 01	Occupational hygienist	Tshwane metropolitan area
Focus Group 02 – Participant 02	Auditor	Tshwane metropolitan area
Focus Group 02 – Participant 03	Building engineer	Tshwane metropolitan area
Focus Group 03 – Participant 01	Business consultant	Tshwane metropolitan area
Focus Group 03 – Participant 02	Auditor	Tshwane metropolitan area
Focus Group 03 – Participant 03	Attorney	Tshwane metropolitan area
Focus Group 04 – Participant 01	Attorney	Tshwane metropolitan area

Participant	Profession	Residential and work location
Focus Group 04 – Participant 02	Attorney	Tshwane metropolitan area
Focus Group 04 – Participant 03	Occupational hygienist	Tshwane metropolitan area
Focus Group 04 – Participant 04	Statistical consultant	Tshwane metropolitan area

3.5.1.2 Conducting the focus groups

For this study to be successful, participants were required to provide as much information on ORF as possible in order to compile satisfactory data. Focus group sessions were conducted in Afrikaans and English, which enabled participants to contribute to the discussion in a language comfortable to them.

Focus group discussions took place over an online platform due to the SARS-CoV-2 pandemic, state of disaster and lockdown regulations in place in the Republic of South Africa at the time of data collection phase of this research study. Field notes were taken on the non-verbal expressions of participants, which supplemented the transcripts. After the sessions, field notes were compared with the recordings to ensure that the collected data were trustworthy and a true reflection of the participants' inputs. Focus group discussions lasted between 30 minutes and 45 minutes. Screenshots taken during the focus group recordings are displayed below.

Figure 3-2   **Screenshot of focus group 01, conducted on 13 August 2020**
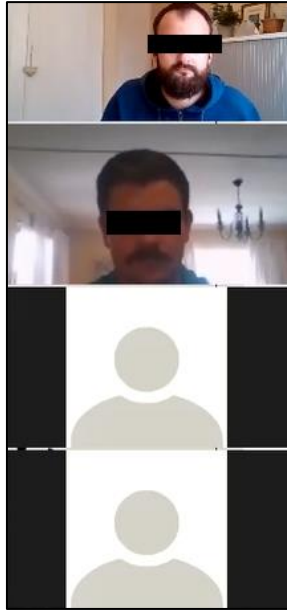
Figure 3-3   Screenshot of focus group 02, conducted on 15 August 2020
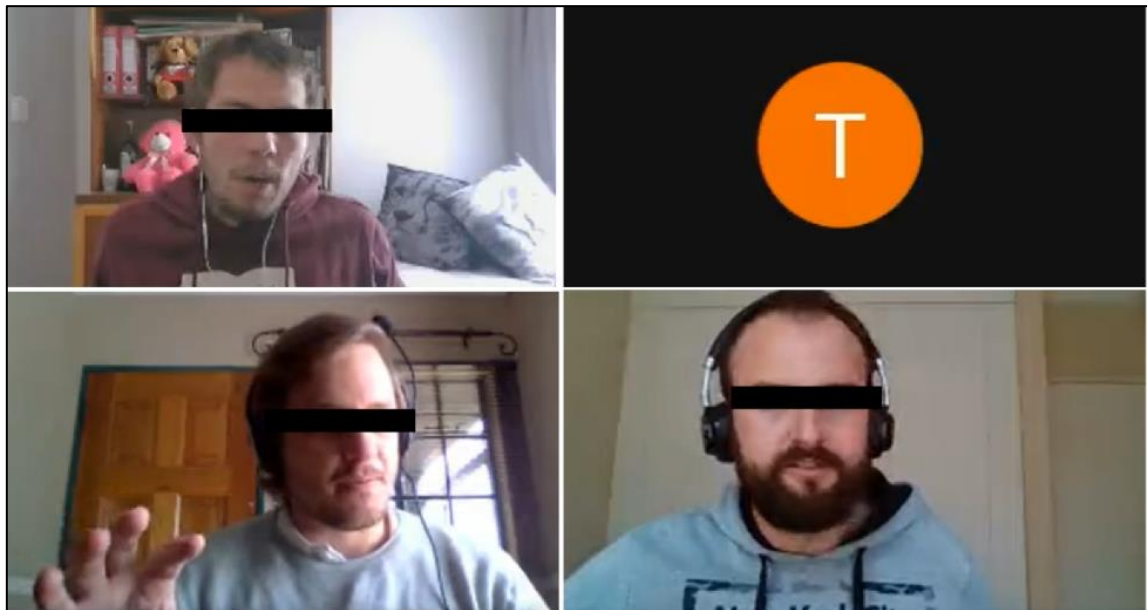
Figure 3-4   Screenshot of focus group 03, conducted on 23 August 2020

Figure 3-5   **Screenshot of focus group 04, conducted on 25 August 2020**

3.5.2   Focus group procedure

During the commencement of online focus group sessions, the researcher communicated the following aspects to participants (Krueger & Casey, 2014):

- Description of the research study;
- Persons having access to the results;
- Confidential nature of the data and results;
- How the recorded data would be used;
- The role of the researcher, being a mediator and keeping the discussion on the topic at hand;
- That participant's names would not be requested during the session;
- That, should participants know one another, they should keep all discussions confidential.

The researcher used an interview guide to guide the focus group sessions and ensure that the focus was on the required interview questions (Bourgeault *et al.*, 2010). The interview guide consisted of six open-ended questions that supported the research objectives, as outlined in Chapter 1 of the study. The interview guide consisted of the following sections:

- Seating plan, which was not used due to the focus group discussions taking place over an online platform;

- An introduction to the study where participants were welcomed and thanked. The purpose was stated, and participants were informed that they were not obliged to answer questions that they did not feel comfortable with;

- Participants were informed that the session would be anonymous and confidential, and that all information gathered would be compiled into a final report, inclusive of a summary of their comments and recommendations;

- Emphasis was placed that the final report would remain the property of the North-West University, and would be available through the institution's online platform;

- Participants were requested to respect fellow members' privacy should they know one another; and

- Participants were informed that they would be presented with three types of questions, namely:

  o Engagement questions;
  o Exploration and follow-up questions; and
  o Exit questions.

Upon conclusion of the session, a verbal summary was provided to participants to ensure that all aspects of the focus group session provided by participants were recorded accurately and understood by the researcher.

3.6   Data analysis

Qualitative data analysis is defined by Maree (2007) as "working with the data, organising, breaking into manageable units, guiding, synthesising, and searching for patterns". The qualitative data collection process produces a large volume of raw data, which required data analysis in such a manner that supported the descriptive value of the study in line with the research aims and objectives. Krippendorff (2018) recognises that iterative thematic analysis is used to discover, examine and report themes or patterns within data.
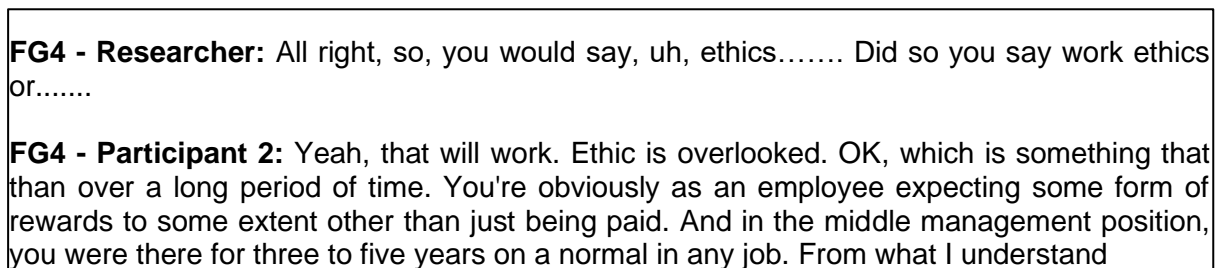
In order to preserve the original message and themes of the research during the data analysis phase, data analysis occurred in the language in which the focus group session was conducted as the researcher is proficient in Afrikaans and English. All focus group session recordings, notes and transcriptions were stored on the researcher's password-protected personal computer, which served as the first data backup. In addition, all data were imported into Atlas.ti version 8 software to commence the coding process and served as the second backup of the data.

The data analysis consisted of five phases, as outlined in Table 3-2 on page 30.

3.6.1 Phase 1: Familiarisation of the data

This phase of the analysis process commenced with the verbatim transcription of recordings by the researcher in the original language in which the focus group discussions were conducted. Transcribing the recordings in the original language contributed to keeping the true phenomenological nature of the data and enabled the researcher to refer to the raw data repeatedly. Thereafter, the researcher compared the recorded data with the transcribed data to ensure that the two data sets corresponded and supplemented the transcriptions with the non-verbal expressions of participants.

Following the completion of the verbatim transcription process, the data were arranged in a manner that enabled the researcher to review it holistically. The verbatim transcription process, reviewing thereof, and supplementation with non-verbal data enabled the researcher to become highly familiar with the data of the study and prepared the researcher for Phase 2 of the data analysis process. Refer to Figure 3-6 for a screenshot of the verbatim transcriptions compiled and used by the researcher during this research process.

FG4 - Researcher: All right, so, you would say, uh, ethics……. Did so you say work ethics or.......

FG4 - Participant 2: Yeah, that will work. Ethic is overlooked. OK, which is something that than over a long period of time. You're obviously as an employee expecting some form of rewards to some extent other than just being paid. And in the middle management position, you were there for three to five years on a normal in any job. From what I understand

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Figure 3-6   Screenshot of the verbatim transcriptions

3.6.2 Phase 2: Coding

Taylor *et al.* (1998) refer to the coding process as a method of analysing and sorting data. Merriam and Tisdell (2016) state that the researcher aims to reduce the volume of data by assigning a descriptive word or phrase to concepts expressed and communicated by participants. The approaches that were followed during the coding process are outlined in Table 3-5.

Table 3-5   Description of open coding, axial coding, and selective coding

Coding Phase	Description
Open coding	According to Babbie and Mouton (2002) and Moghaddam (2006), open coding is the initial stage of the coding process during which distinct concepts and categories are identified with the purpose being to reduce data into categories and themes.
Axial coding	According to Kaplan and Maxwell (2005), axial coding focuses on the concepts and categories identified during the open coding process and assist researchers in identifying reoccurring responses and identifying clusters and relationships in the collected data.
Selective coding	Researchers identify interconnections between the themes and identified codes during axial coding.

3.6.3   Phase 3:   Searching for themes

The following step was to cluster identified codes into possible themes to clarify the data. The researcher displayed the opinions and perceptions of participants in a holistic manner and in accordance with the objectives of the study as outlined in Chapter 1.

3.6.4   Phase 4:   Reviewing of themes

Due to the iterative nature of qualitative coding, identified themes were reviewed to ensure relevance, applicability and supplementary of the themes to the objectives of the study (Braun & Clarke, 2006). Refer to the screenshot below for Phases 2, 3 and 4 followed using Atlas.ti. version 08 software.
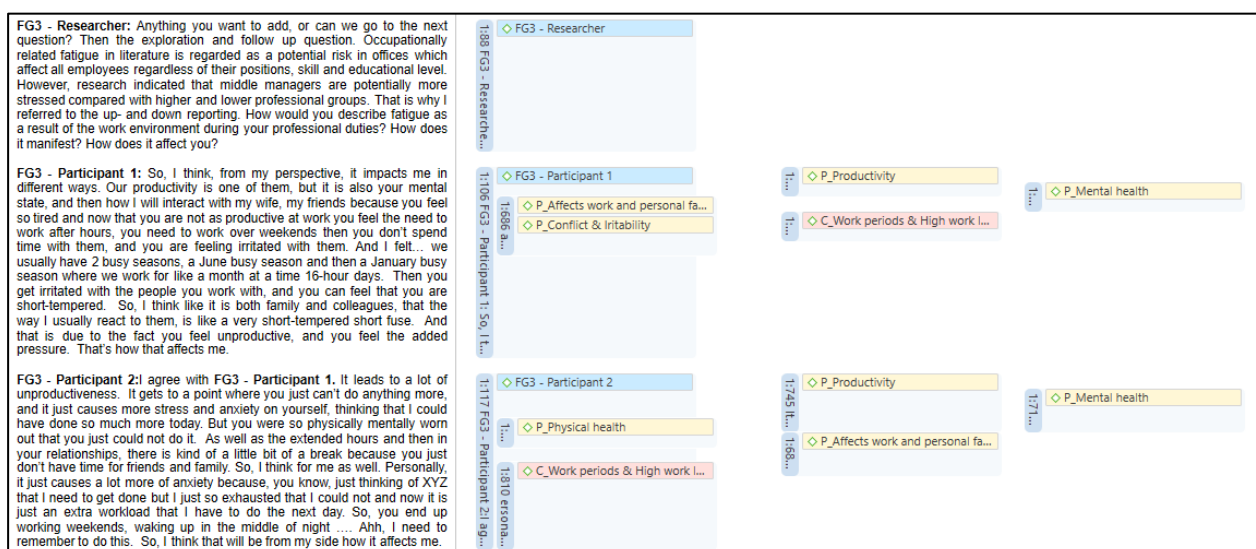
Figure 3-7   Coding, searching, and reviewing of themes for the verbatim transcripts

3.6.5   Phase 5:   Producing the meaning of themes

During the final phase of the data analysis, the researcher interpreted the data together with the identified themes. The researcher's background knowledge obtained through the literature review on ORF was relevant during the production of the theme meanings. A summary of the identified themes that relate to the perception, contributing factors and mitigation strategies of ORF are outlined in Table 3-6, Table 3-7 and Table 3-8 below.

Table 3-6   Themes that relate to the perception of ORF

Theme	Perception of ORF among middle managers
Theme 01	Complex phenomenon
Theme 02	Affects work and personal factors
Theme 03	Conflict and irritability
Theme 04	Ethics
Theme 05	Mental health
Theme 06	Motivational
Theme 07	Not alleviated by sleep
Theme 08	Physical health
Theme 09	Productivity

Table 3-7   Themes that relate to the contributing factors of ORF

Theme	Contributing factors of ORF
Theme 01	Inactivity
Theme 02	Lack of support
Theme 03	Remuneration
Theme 04	Unclear work expectations
Theme 05	Work periods and high workload

Table 3-8   Themes that relate to the management of ORF

Theme	Mitigation strategies of ORF
Theme 01	Communication
Theme 02	Monitoring
Theme 03	Physical activity
Theme 04	Remuneration

Theme	Mitigation strategies of ORF
Theme 05	Roles and responsibilities
Theme 06	Support
Theme 07	Training
Theme 08	Work-life balance

3.7 The credibility of research findings

Creswell (2009) recognised reliability and validity as fundamental aspects of the qualitative research process. Some qualitative researchers instead refer to trustworthiness as a way in which qualitative research ensure transferability, credibility, dependability, and confirmability during their study. The following steps were taken in order to ensure trustworthiness during this research study:

3.7.1 Disclosure

The data collection and analysis methods were well documented and disclosed during the research project. Documentation and disclosing of the data collection and analysis methods enabled readers to form their conclusions with regards to the validity and objectivity of these methods.

3.7.2 Auditability

All steps that were taken during the data collection and analysis process were recorded and documented, which enabled auditability of the systematic approach of the research process in concluding the research.

3.7.3 Peer debriefing

The research was undertaken under the supervision of an experienced researcher who is skilled in qualitative research methodology and contributed to the study by providing an impartial view on the data collection and analysis of the research process.

3.7.4 Corroboration

The researcher implemented corroboration as a way to limit faulty observations and conclusions. Leading questions were avoided during the compilation of the interview guide.

3.7.5   Prolonged engagement

Prolonged engagement enabled the identification of valid observations and conclusions by spending the maximum allowed time with the focus group participants.

3.7.6   Bracketing

The researcher aimed to distance himself from all beliefs and perceptions beliefs on occupational-related fatigue, and also comprehended the data using the findings obtained during the data collection and analysis phases.

3.7.7   Reliability

Reliability refers to the consistency of findings when using specific data collection techniques and analysis procedures (Saunders *et al.*, 2009). The reliability of this study was tested by scheduling a fourth online focus group discussion, although saturation had already been reached during the third online focus group discussion.

3.7.8   Validity

Saunders *et al.* (2009) acknowledge that validity refers to the extent to which findings correspond with reality. The researcher ensured validity by applying triangulation, which refers to the use of multiple data sets or sources in qualitative research to develop a comprehensive understanding of the phenomenon (Patton, 1999). Carter *et al.* (2014) state that method triangulation is used frequently in the qualitative research approach. In order to obtain method triangulation data from interviews, observations and field notes were included in the data collection process.

3.8   Ethical considerations

This section provides an overview of the ethical considerations that were taken into account during this study. Miles and Huberman (1994) recognise that ethical considerations are widely addressed in research, with Saunders and Lewis (2012) emphasising that research ethics consider the researcher's behaviour and treatment of the participants during the study, which includes their rights, needs, and values. During this study, guidelines provided by Strydom (2002) were used.

3.8.1 Ethical approval

3.8.1.1 Legal permission

The researcher had an obligation to the scientific community in respect of rights, needs, values and desires of the participants, and adhered strictly to the issues of informed consent; zero harm and risk; honesty and truth; and privacy, confidentiality, and anonymity. Prior to recruiting participants for focus group discussions, ethical approval was obtained from the Economic and Management Sciences Research Ethics Committee (Annexure A; Ethics Number: NWU-00 638 – 20 – A4). The ethical approval stated that all predetermined factors had been met in order to commence with the study.

3.8.1.2 Recruitment of participants

Refer to paragraph 3.4.4.1 of this document for detail that relates to the recruitment of participants during this study.

3.8.1.3 Informed consent

The researcher followed the process outlined below in obtaining written permission and informed consent from all participants as a means of maintaining the integrity of the researcher, his supervisor and the research process.

Participants were required to read the informed consent form. Signing and dating the form acted as physical proof of voluntary participation. The researcher provided sufficient information and assurances about taking part to allow individuals to understand the implications of participation and to reach a fully informed, considered, and freely given decision about whether or not to participate, without the exercise of any pressure coercion. The researcher communicated all information relating to this study honestly and transparently to avoid misleading information and biased representation of data. The researcher emphasised that participation in this study was strictly voluntary, and participants had the right to withdraw at any stage if they wish to do so. In addition, the researcher provided all participants of the focus group discussions with the contact information of the study officials should they require additional or specific information that relates to the research project, their anonymity and confidentiality.

Participants did not indicate that they felt uncomfortable during the focus group discussions, and no one withdrew from the discussions. In addition, the discussion was not interrupted by someone outside the group as it occurred over a secured online platform.

3.8.2   Contribution of the study

This study relates to ORF among middle managers within the private sector with a specific focus on factors contributing to organisational strategies to reduce the prevalence of ORF.

This study will benefit organisations employing professional people, with adequate management of ORF positively contributing to all aspects of the organisation. In addition, this study aims to contribute new knowledge in the field of ORF amongst white-collar middle managers in the private sector.

3.8.3   Researcher's competence

Although the researcher has acquired knowledge and experience on the research topic, the study was undertaken under the supervision of an experienced researcher who is skilled in qualitative research methodology.

3.9   Confidentiality, anonymity, storage, dissemination, and feedback of data

3.9.1   Confidentiality and anonymity

Participants were ensured that their identity, personal details, and opinions would remain confidential during and after this study. In addition, only the researcher would be able to identify the participants by means of the recruitment e-mail interactions, informed consent forms, recorded focus groups and notes taken during focus group sessions.

The researcher respected the participants and their organisations' privacy during the research process. The following steps were taken to ensure that participants' confidentiality and anonymity are protected:

- The focus group discussions were conducted over a secured online platform and, as a result, the researcher was not able to use the seating plan included in the interview guide. The researcher took screenshots of the online focus group session with the identity of participants remaining hidden and undisclosed. The field notes referred to the participant's substitution name instead of their actual name to ensure that the anonymity of participants was never compromised;

- The participants were free to withdraw from the discussions if they felt uncomfortable with any aspects, including confidentiality and anonymity. Note should be taken that participants did not withdraw from the focus group sessions during the data collection phase; and

- The contact details of the study officials and the recruitment e-mail address were available on the consent form should participants require additional or more specific information that relates to the research project.

The following steps outline the actions taken by the researcher to ensure confidentiality and anonymity of all participants of this study:

- The participants were ensured that all information shared during the focus group session was treated with confidentiality. However, the researcher could not guarantee that members of the focus group would maintain a similar level of anonymity and confidentiality. In order to mitigate this risk, participants were trained and informed of the sensitive nature of the focus group discussions and their responsibility to treat all information confidentially and anonymously;

- Participants were not subjected to harm in any way;

- Respect for the dignity of all participants was prioritised and avoided the deception or exaggeration of research aims and objectives;

- Participants were ensured that any affiliations, sources of funding, and possible conflict of interest were declared;

- The use of offensive discriminatory or unacceptable language during the formulation of the focus group questions was avoided;

- The work of other authors was acknowledged through the Harvard referencing system;

- High levels of objectivity in discussions and analysis of the data throughout the research process were maintained;

- Adherence to the Protection of Personal Information Act 04 of 2013 at all times was ensured;

- Feedback on the results and findings of this study will be provided upon request by participants;

- Outside observers in the focus group discussions were not permitted as they presented a risk of breaching the anonymity and confidentiality agreement between the participant and the researcher. In addition, outside observers presented the risk of preventing participants from speaking freely;

- The research remains the property of the North-West University of South Africa; and

- Participants were informed about the objectives, anticipated risks and benefits of the study in an easily understandable language.

3.9.2 Data storage

This section outlines the data storage protocol during and after completion of the study.

All personal data will be removed during the transcription phase and onward. Raw data will be stored on the supervisor's office computer with all electronic data being password-protected. Should the researcher require access to the data after the dissertation has been completed, permission will be obtained from the North-West University. Finally, following the data expiration of the five-year storage period, all data will be destroyed in accordance with the North-West University's regulations.

3.9.3 Data dissemination and feedback

Upon completion of the study, feedback may be provided to participants upon request and will include the research questions, aims and objectives as well as the main findings of the study.

3.10 Limitations of the methodology process

Simon (2011) states that limitations are characteristics that limit the scope of a study and delineate boundaries. The following limitations were identified during the research process:

- Small sample size;
- Online focus groups; and
- Only middle managers were included.

Bricki and Green (2007) recognise the limitations of a small sample size during the qualitative research process, which is supported by Creswell (2009) who notes that due to the small sample size, study findings cannot be generalised to an entire population, which was the case in the current study.

3.11 Conclusion

The objective of this chapter was to describe the research process followed to answer the research objectives as outlined in Chapter 1 of this dissertation. In order to describe the research process that was followed during this research approach, the sampling methodology, data gathering methodology, data analysis and ethical considerations were outlined. In the following chapter, the findings of the research process are presented and discussed.

CHAPTER 4   PRESENTATION AND DISCUSSION OF FINDINGS

4.1   Introduction

The previous chapter described the methodological process that was followed to identify themes and sub-themes in order to answer the research questions outlined in Chapter 1. This chapter presents the findings obtained by following the methodological process, as described in the previous chapter, according to themes and sub-themes that emerged following a thorough content analysis of data collected among middle managers from various organisations. Content analysis and themes were identified for each research question of this study. Participants' real names were substituted with code names to ensure their anonymity.

4.1.1   Themes identified

4.1.1.1   The perception that relates to ORF among middle managers

The occurrence frequency of identified themes that relate to middle managers' perception of ORF during the online focus group discussions is listed in descending order in Table 4-1 below. The perception of ORF was investigated to determine if middle managers would be able to describe the phenomenon with the assumption that they would be able to identify ORF within themselves and their subordinates. The perception of the phenomenon among middle managers was also investigated to determine if the target population are aware of the impact of ORF on their personal and work life and to determine their opinion on the effective management thereof.

Table 4-1   Themes that relate to the perception of ORF

Theme	Perception of ORF among middle managers
Theme 01	Mental health
Theme 02	Affects work and personal factors
Theme 03	Physical health
Theme 04	Productivity
Theme 05	Conflict and irritability
Theme 06	Complex phenomenon
Theme 07	Motivation
Theme 08	Ethics
Theme 09	Not alleviated by sleep

i) Mental health

Participants perceived that their mental health is affected adversely by ORF. In support of this, Focus Group (FG) 4 – Participant 3 expressed concern for the mental implication on his body as a result of ORF by providing the following input:

> *There is a physical and a mental one. I mean mentally, we all … Trying to just stay up to date and trying to … Keep everybody happy, and it's not. It's not the easiest thing, so it's definitely affecting me, and I realised that I spend most of my time working. It's like sad …*

The mental implication as a result of ORF was echoed by FG3 – Participant 1, who claimed that:

> *… it is also your mental state, and then how I will interact with my wife …*

Furthermore, FG1 – Participant 3 confirmed the possible mental implication as a result of ORF by the following utterance:

> *Stres is die grootste faktor wat 'n mens moeg maak. Want dit put jou emosioneel en fisies uit.*
> *[Stress is the biggest factor that makes one tired. Because it tires you out emotionally and physically.]*

The participants' views are supported by Tanaka *et al.* (2014) who acknowledge that fatigue manifests in the form of reduced mental performance. Furthermore, (Sartang *et al.*, 2019) note that mental fatigue influences the resources required to meet performance criteria. In addition, the potential mental impact of ORF on the mental health of middle managers is supported by the Health and Safety Executive (2019) that indicates an increased prevalence of depression and anxiety disorders among fatigued personnel. Middle managers are more likely to believe that their mental health is affected by their work and also showed worse physical health than their colleagues (CIPD Community, 2018). Besides, middle managers face psychological pressures in the work environment that affect their work performance, physical and emotional health adversely (Anicich & Hirsh, 2017).

ii) Affects work and personal factors

The feedback that relates to the perception that ORF affects work and personal factors was obtained during the online focus group discussions. FG3 – Participant 1 indicated that work and personal factors are affected by ORF by providing the following input:

> *… and then how I will interact with my wife, my friends because you feel so tired and now that you are not as productive at work you feel the need to work after hours, you need to work over weekends, then you don't spend time with them, and you are feeling irritated with them.*

This was confirmed by FG2 – Participant 2 who indicated a possible interlocking relationship between personal and work factors by providing the following input:

> *… die ding is dit is 'interlocking'. Dit is soos wat jy aan die begin gesê het 'what came first, the chicken or the egg'. Jou persoonlike lewe wat jou werk beïnvloed en jou werk beïnvloed jou persoonlike lewe. So dit is moeilik om die twee van mekaar te skei. Mens het goeters in jou persoonlike lewe wat jou werk definitief gaan beïnvloed.*
> *[… the thing is it's interlocking. It's like what you said at the beginning 'what came first, the chicken or the egg'. Your personal life that affects your work and your work affects your personal life. So it's hard to separate the two from each other. You have events in your personal life that will definitely influence your work.]*

The relationship between personal and work factors was echoed by FG2 – Participant 2 who indicated that ORF affects his sleep routine negatively by providing the following feedback:

> *So dit sit ongelooflik baie druk op 'n mens – dit is soos FG2 – Participant 1 gesê het – mens slaap nie. Ek het 'n eksperiment gedoen hierdie laaste week. Ek het my slaap probeer 'track'. Ek het met my 'fitness tracker' geslaap en probeer kyk hoe lyk my slaap. Diep slaap minder as 30 minute 'n aand. En dit is baie kommerwekkend. Dit het 'n 'knock-on' effek.*
> *[So it puts an incredible amount of pressure on a human being – it's like FG2 – Participant 1 said – one doesn't sleep. I've done an experiment this week. I tried to track my sleep. I slept with my fitness tracker and tried to see what my sleep looks like. Deep sleep of less than 30 minutes per evening. And that's very concerning. It has a knock-on effect.]*

This is supported by Barret (2018) and Rodrigues (2011) who suggest that middle managers find it challenging to separate work factors from their personal lives.

iii) *Physical health*

Participants perceived ORF as a concern that may affect their physical health. This concern was expressed by FG4 – Participant 2 who uttered:

> *So, I think that over a long period of time would obviously affect your stress and your physical well-being and so on and so forth.*

Moreover, FG4 – Participant 2 indicated that neck and back pain might be the result of ORF by providing the following inputs:

> *The other thing I would say is a joke would be, um, neck pain and back pain as a result of sitting like we are. Um, and not having proper economic treatment. Yeah!*

FG4 – Participant 2's views on the physical implication of ORF were echoed by FG4 – Participant 1 who uttered the following:

> *You know, obviously, as we mentioned before, physical pain, neck pain, back pain, spasms. Yeah, it's a fact.*

These statements are supported by Mehta and Parasuraman (2014) who acknowledge the interferences with the prefrontal cortex as a result of fatigue, which affects motor output adversely. This suggests that ORF may have an effect on the physiological functions of the human body. Furthermore, Anicich and Hirsh (2017) state that ORF is a risk factor for a large number of health problems, including hypertension and heart disease.

iv) *Productivity*

Participants perceived their productivity as a factor that is affected by ORF. This was confirmed by FG4 – Participant 2, who provided the following feedback during the online focus group discussions:

> *Maintain a certain level, um, before you know it, you steer off the path, and your work is becoming, um, less complete or you try and skip corners, or you try an, Well, you missed the personal aspect of the work.*

This was echoed by FG3 – Participant 2, who expressed his concern on their mental wellness and levels of productivity that are affected by ORF by providing the following inputs:

> *It leads to a lot of unproductiveness. It gets to a point where you just can't do anything more, and it just causes more stress and anxiety on yourself, thinking that I could have done so much more today.*

In addition, FG3 – Participant 2's views were echoed by FG3 – Participant 1 who uttered the following:

> *So, I think, from my perspective, it impacts me in different ways. Our productivity is one of them.*

This is supported by Barret (2018), who acknowledges that ORF might have an adverse effect on employee productivity in the workplace. Furthermore, reduced productivity is supported by the Health and Safety Executive (2019) that indicates that ORF affects workplace productivity adversely. This is a factor that is supported by Muller (2019), who claims that up to 5,6 hours of productive time is lost per workweek due to ORF.

v) *Conflict and irritability*

The following feedback that relates to participants' perceptions of ORF and potential conflict and levels of irritability was obtained from middle managers during the online focus group discussions.

FG1 – Participant 1 expressed concern for the increased levels of irritability as a result of ORF in the workplace by stating the following:

> *Met occupational fatigue, sien 'n mens ook hoe vinnig geïrriteerd raak jy. Jou humeur 'snap' onmenslik vinnig.*
> *[With occupational fatigue, one also sees how quickly you get irritated. Your temper snaps inhumanly quickly.]*

His view was echoed by FG2 – Participant 2, who stated the following:

> *So die werk word net al hoe meer en meer en ons bly maar net dieselfde hoeveelheid mense en die projekte word al hoe meer ingewikkeld en om kliënte te 'manage' is 'n issue en kliënte raak moeilik en almal is geïrriteerd en soos FG2 – Participant 1 gesê het ook – die ding van geld invorder.*
> *[So the work is becoming more and more and we are staying the same number of personnel with projects becoming more complicated and helping customers manage is an issue and customers are getting difficult and everyone is annoyed with one another and like FG2 – Participant 1 said too – money collection is also a factor.]*

This is confirmed by Barret (2018), who acknowledges that ORF occurs in conjunction with irritability, which may be a warning sign of fatigue developing among employees. In addition, Ilies *et al.* (2015) note that high levels of workload affect work-family conflict.

vi) Complex phenomenon

During the online focus group discussions, participants indicated that ORF is a complex phenomenon in the workplace. FG1 – Participant 1 perceived ORF as the following:

> *Eerste ding, ek dink nie dis nie 'n baie eenvoudige vraag nie. Want die aspekte wat dit behels is meer as wat ons kan dit beskryf.*
> *[First thing, I don't think it's not a very simple question. Because the aspects entails more than we can describe.]*

This was echoed by FG1 – Participant 2, who stated the following:

> *Ek het nie 'n goeie beskrywing van dit nie … ek sal nie sê moedeloos is die woord nie, maar dis meer die geval van jy weet nie meer wat se kant toe nie … dis moeilik om rigting te hou.*
> *[I don't have a good description of it … I won't say discouraged is the word, but it's a case of you no longer knowing what to do … it's hard to keep direction.]*

This is supported by Muller (2019), who indicates that ORF might be one of the most overlooked and underestimated workplace health conditions that result in a reduced awareness among the labour force.

vii) Motivation

Participants perceived ORF as a condition that might potentially affect their levels of motivation. FG1 – Participant 1 emphasised that he becomes demotivated as a result of ORF by providing the following input to the focus group discussion:

En dis basies die hele idee van jy word moeg, de-gemotiveerd en jy weet nie meer wat om te doen nie. So jy begin amper – ek wil dit nie 'procrastinate' noem nie – maar dit is iets wat deel is van dit.
[And that's basically the whole idea of you getting tired, de-motivated and you don't know what to do anymore. So you almost start – I don't want to call it procrastinating – but it's something that's part of it.]

FG1– Participant 3 confirmed this view by agreeing with FG1 – Participant 1 by mentioning that:

So dit kom rêrig soos FG1 – Participant 1 gesê het as die motivering nie daar is nie. En kom ons wees eerlik, meeste van ons motivering is geld; dis hoekom ons in die oggend opstaan.
[So it is as FG1 – Participant 1 said, if the motivation isn't there. And let's be honest, most of our motivation is money; that's why we get up in the morning.]

This is supported by Muller and Apps (2019) who identify an inverse relationship between employees' level of fatigue and motivation levels.

viii) Ethics

Online focus group participants expressed concern that their ethical evaluation process might be affected by ORF. FG1 – Participant 3 confirmed this concern by stating the following:

Jy raak so moeg en gatvol dat jy nie eers meer 'worry' wat jy sê nie. Ek is party dae so moeg dat ek nie daaroor om professioneel aantrek nie.
[You get so tired that you don't even worry what you're saying anymore. I'm so tired some days that I don't dress about it professionally.]

This was echoed by FG1 – Participant 2, who said:

Bietjie meer professionele oogpunt op dit vanuit die ingenieursbedryf – jy kom op 'n punt waar die werk is soveel jy kan nie tegnies deur dit kom nie. So jy teken dit af. Wel, hierdie moet uit my kantoor uit – so jy teken dit af. Wat 'n groot risiko is.
[Bit more professional point of view on it from the engineering industry – you get to a point where the workload is so high that you can't technically get through it. So you sign it off. Well, this has to get out of my office — so you sign it off. Which is a big risk.]

FG1 – Participant 2's view was acknowledged and confirmed by FG1 – Participant 1 who agreed with the risk associated with the decision-making process as a result of ORF:

… Absoluut … [… absolutely …]

Furthermore, in support of the reduced ethical decision-making process as a result of ORF, FG4 – Participant 2 uttered:

I would say what I just I was pretty tired with everything is the risk of your work or your work ethic being overlooked, um?

This is supported by Bushmaker *et al.* (2019) who identify a direct relationship between mistakes and levels of fatigue, which may be ascribed to a reduced thoroughness as a result of ORF and potentially affecting the ethical decision-making process.

ix) *Not alleviated by sleep*

Participants acknowledged that ORF is not alleviated by sleep as a remedy, with FG2 – Participant 2 stating the following:

> *Ja … en dit is 'n tipe van ek voel veral 'occupational fatigue' word 'obviously' veroorsaak deur goeters wat aangaan in jou werk maar dit is 'n tipe van 'n moeg wat slaap nie kan beter maak nie.*
> *[Yes … and it's a type of, I feel, especially occupational fatigue is obviously caused by things that are going on in your work but it's a type of a tired that sleep can't make better.]*

This was echoed by FG2 – Participant 3, who mentioned that:

> *Ek dink die 'occupational fatigue' is soos wat sy nou gesê het 'n tipe … dis 'n ander tipe moegheid.*
> *[I think the occupational fatigue is like what she's said now a type … it's a different type of fatigue.]*

This is supported by Alsco (2015), who acknowledges that chronic fatigue is a severe state of tiredness that cannot be relieved by rest or sleep and that can last more than six months.

4.1.1.2 Causes of ORF among middle managers

The occurrence frequency of identified themes that relate to the causes of ORF among middle managers during the online focus group discussions is listed in descending order in Table 4-2 below. Participants provided their inputs on the possible causes of ORF in the workplace in order to investigate the possible contributing factors to the condition.

Table 4-2   Themes that relate to the contributing factors of ORF

Theme	Contributing factors of ORF
Theme 01	Work periods and high workload
Theme 02	Unclear work expectations
Theme 03	Lack of support
Theme 04	Inactivity
Theme 05	Remuneration

According to Alsco (2015), understanding the underlying causes of ORF is essential to prevent and treat ORF effectively. As a result, the following work-related factors are identified that may result in the development of ORF: long work hours, long hours of physical or mental activity, inadequate breaks between activities, insufficient rest, excessive stress, and unsatisfactory working conditions.

i)   Work periods and high workload

Participants indicated that long work periods and high workload might contribute to the development of ORF with FG3 – Participant 3 saying the following:

> *More of you don't take the time to rest or relax. Over time you just continue working and pushing yourself to the point of where you just feel so fatigued and so tired, but by the time you get to that point, you are so burned out that you just feel even more stress trying to get out of that slump in the first place.*

This was echoed by FG1 – Participant 3, who acknowledged that long work hours contribute to the development of ORF:

> *Daar is baie dae wat ek – ek is in die oudit bedryf – daar is baie dae wat mens tot 4 uur of 5 uur in die oggend sit en werk en dan verwag hulle weer van jou om soos 6 uur by die werk op te daag en ek meen daar is 'n groot risiko van foute want jy kan 'barely' konsentreer.*
> *[There are many days that I – I'm in the audit industry – there are many days that I work up to 4 o'clock or 5 o'clock in the morning and then they expect you to show up at work like 6 o'clock and I think there's a huge risk of mistakes because you can barely concentrate.]*

This is supported by Barker and Nussbaum (2011), Querstret *et al*. (2020) and Sadeghniiat-Haghighi and Yazdi (2015) who acknowledge the adverse effects of extended and irregular work periods on the development of ORF among employees. This is further emphasised by Santos et al. (2016), who found that extended work hours are associated with an increased prevalence of ORF.

ii)   Unclear work expectations

Participants furthermore ascribed unclear work expectations as a definite contributing factor to the development of ORF. FG1– Participant 1 emphasised this by giving input as follows:

> *Maar die ander ding is, jy het 'performance management' wat moet gebeur. En ek dink 'performance management' is wat min maatskappy op die oomblik doen. Want daar moet 'set objectives' wees wat jy moet bereik om sekere goeters te bereik. Jou KPI's.[1] Op die oomblik is die KPI's so sleg opgestel, wat nie rêrig kwantitatief*

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[1] Key performance indicators.

is nie maar meer kwalitatief is. Jy het iets verbeter. Wat beteken verbeter? En hoe sit jy 'n waarde daaraan toe om 'n konkrete uitwerking te hê?
[But the other thing is, you have performance management that needs to happen. And I think limited companies are doing performance management right now. Because there must be set objectives that you must achieve to reach certain things. Your KPCs.[2] At the moment, the KPIs are set up so badly, which are not really quantitative but more qualitative. You've improved something. What does improving mean? And how do you put a value to have a concrete effect?]

This was echoed by FG2 – Participant 1, who said the following:

Dis 'n konstante antisipering van wat dit is wat gedoen moet word.
[It's a constant anticipation of what it is that needs to be done.]

Juevesa *et al.* (2020) acknowledge unclear work expectations as a significant contributing factor to fatigue in the workplace.

iii) Lack of support

Participants, furthermore, ascribed a lack of managerial support to the development of ORF. This was emphasised by FG1 – Participant 1:

Dis baie veral soos as jy nie ondersteuning het van die topbestuur af nie. As jy alles moet motiveer dan maak dit nie meer saak wat jy enigsins verander nie. Dit gaan nie jou lewe makliker maak nie; dit gaan nie iemand anders belangrik maak nie.
[This is a lot especially if you don't have support from the top management. If you have to motivate everything that has to be implemented, then it doesn't matter what you change at all. It's not going to make your life easier; it's not going to make someone else important.]

This is echoed by FG1 – Participant 3:

Jy is langer in hierdie beroep as ek. Jy weet meer as ek. So hoekom kan jy nie ook saam met ons sit en ons help nie? Of wees net ten minste daar al … soos byvoorbeeld as ons so laat werk…
[You have been in this profession longer than me. You know more than me. So why can't you sit and help us? Or just be there … like, for example, if we work so late …]

FG4 – Participant 4's inputs supported the comments of FG1 – Participant 1 and FG1 – Participant 3 by saying:

… So, for me reporting up and asking senior management or whoever. I'm not going to say any names … You can't get feedback from them, so. That's quite an issue. Like you could say you've got a lot of meetings, so we don't have a lot of meetings, but when we have meetings, people don't pitch for the meetings …

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[2] Key performance characteristics.

This is supported by Ghalwash *et al.* (2017), Ismail *et al.* (2019), Kashyap and Sinha (2010), and Lerman *et al.* (2012) who found that numerous organisational factors such as poor relations and organisational politics may contribute to the development of ORF. Furthermore, Juevesa *et al.* (2020) identify inadequate support as a contributing factor for developing fatigue in the workplace.

iv) *Inactivity*

Participants identified inactivity as a contributing factor to the development of ORF. FG2 – Participant 2 said:

> *… die feit dat mens nie aktief is nie. Ek is ook een wat agter my rekenaar sit vir 9 uur per dag. Ek vat ook nie my 'lunch' nie, ek sal eet soos wat ek aangaan en ek sal opstaan of badkamer toe te gaan of om koffie of tee te gaan maak of water te gaan kry. Dit is hoekom ek opstaan.*
> *[… the fact that one is not active. I'm one who sits behind my computer for 9 hours a day. I don't take my lunch either, I'll eat during work activities, and I'll get up or go to the bathroom or to go make coffee or tea or get water. That's why I get up.]*

This was echoed by FG4 – Participant 2, who said:

> *Uh. The other thing I would say is a joke would be, um, neck pain and back pain as a result of sitting like we are.*

This is supported by Newton *et al.* (2011) and Van der Ploeg *et al.* (2013) who ascribe inactivity as a contributing factor to the development of ORF amongst administrative workers.

v) *Remuneration*

Participants indicated inadequate remuneration as a possible contributing factor to the development of ORF. FG1 – Participant 3 said:

> *Die ding wat ek weer agtergekom het is, veral met klerkskap, 'n mens word so min betaal dat jy nie meer omgee of jy 'n fout maak of nie. Daar is baie dae wat ek – ek is in die oudit bedryf – daar is baie dae wat mens tot 4 uur of 5 uur in die oggend sit en werk en dan verwag hulle weer van jou om soos 6 uur by die werk op te daag en ek meen daar is 'n groot risiko van foute want jy kan 'barely' konsentreer.*
> *[The thing I realised once again is that, especially with clerkship, one gets paid so little that you no longer care whether you make a mistake or not. There are many days that I – I'm in the audit industry – there are many days that you sit and work up to 4 o'clock or 5 o'clock in the morning and then they expect you to show up at work like 6 o'clock and I think there's a huge risk of mistakes because you can barely concentrate.]*

This was echoed by FG2 – Participant 1:

> *Dan is daar ook goeters soos finansiële omstandighede ook. Finansiële omstandighede is ook 'n ander ding wat ook bykom.*
> *[Then there are also things like financial circumstances. Financial circumstances are also another thing that comes to that too.]*

This is supported by Lock *et al.* (2018) who acknowledge that inadequate remuneration might affect the levels of fatigue perceived in the workplace.

4.1.1.3 Mitigation strategies of ORF among middle managers

The occurrence frequency of identified themes that relate to mitigation strategies of ORF among middle managers during the online focus group discussions is listed in descending order in Table 4-3 below. Participants were offered the opportunity to give their opinion on the possible mitigation strategies that may be implemented to reduce the prevalence of ORF in the workplace.

Table 4-3   Themes that relate to the management of ORF

Theme	Mitigation strategies of ORF
Theme 01	Roles and responsibilities
Theme 02	Training
Theme 03	Remuneration and recognition
Theme 04	Communication
Theme 05	Physical activity
Theme 06	Support and compassion
Theme 07	Work-life balance
Theme 08	Monitoring

Alsco (2015) acknowledges that the implementation of a successful ORF management programme might contribute to the success of an organisation. In addition, the development of a long-term management plan is essential for preventing and treating ORF effectively.

i)   Roles and responsibilities

The following feedback relating to roles and responsibilities as a possible mitigation strategy for the prevention and treatment of ORF among middle managers was obtained during the online focus group discussions.

FG1 – Participant 3 said:

So ek dink om die lyn van verantwoordelikhede uiteen te sit vir mense is baie belangrik om te verstaan – wie moet wanneer doen en aan wie moet jy rapporteer of as jy issue het, na wie toe kan jy gaan … Maar ek dink net om letterlik te sit in vergadering en uit te lê, wat is jou verantwoordelikhede, of al is dit 'n 'one-on-one meeting' en dan uit te stuur, hoor hier dit is die 'conclusion' wat ons gekry het. Mense moet weet wat hul verantwoordelikhede is. Niemand lees eintlik in hul kontrak en weet wat is hul verantwoordelikhede nie.
[So I think to set out the line of responsibilities for people is very important to understand – who should when doing and to whom should you report or if you have issue to whom can you go …. But I just think to literally sit in meeting and lay out, what are your responsibilities, or if it's a one-on-one meeting and then send out, listen here that's the conclusion we got. People need to know what their responsibilities are. No one actually reads in their contract and knows what their responsibilities are.]

This was echoed by FG3 – Participant 2, who said:

From my perspective, I would say managing of resources a lot better. So looking at, we have four managers, for example, instead of one person having the workload of 75 per cent of the workload just because the other three is not as good as the other person in terms of managing their time. Just split the work equally, and everyone needs to manage their own time to reach the same targets. Because in actual fact, we are all on the same level, the same salary, in terms of education. So, I think managing of resources better and not to say that because someone is better at managing his own time and doing their job better, doesn't necessarily mean that they should have a higher workload than someone else. So, I would say just managing resources a lot better.

This is supported by Juevesa *et al.* (2020) who acknowledge that clear roles and responsibilities might make a significant contribution to the effective management of fatigue in the workplace.

ii) Training

Participants proposed the provision of training as a possible mitigation strategy for the development of ORF. FG1 – Participant 1 said:

Ek sal sê maatskappye moet invest in 'training'. As jy in 'n 'management' posisie instap, ek bedoel, uit 'n ingenieurs aspek uit, jy ken nie noodwendig 'people management' nie en jy ken nie al die 'HR' reëls nie jy ken nie al die goeters wat jy nodig het om management te doen nie, maar jy gebruik die intellek wat jy het om dit toe te pas tot die beste van jou vermoë. Maar as 'n maatskappy 'training' gee dink ek daar is 'n baie groter hoeveelheid mense wat hul kan bereik. En dan 'actually' die mense oplei.
[I will say companies should invest in training. If you walk into a management position, I mean, from an engineer's aspect, you don't necessarily know people management and you don't know all the HR rules you don't know all the things you need to do management but you use the intellect you have to apply it to the best of your ability. But if a company gives training, I think there's a much greater number of people who can reach them. And then actually train the people.]

This was echoed by FG1 – Participant 2, who said:

Training moet gegee word …
[Training should be given …]

The importance of training is supported by various authors who emphasise the importance of including training in employee wellness programmes to reduce the risk of developing ORF (Butlewski *et al.*, 2018; Gander *et al.*, 2011; Wang *et al.*, 2016).

iii) *Remuneration and recognition*

Remuneration and recognition were identified as a factor that may reduce the prevalence of ORF in the workplace. FG1 – Participant 1 said:

Maar baie ander mense soek weer finansiële bewys of byvoorbeeld bevordering of iets soos dit wat hulle basies daai 'gratitude' gee om te sê: weet jy wat, ek het vir hierdie ding 'n beloning gekry, kom ek werk harder vir die volgende een sodat ek die volgende beloning kan kry.
[But many other people seek financial proof again or, for example, promotion or something like that, that basically gives them that gratitude to say: do you know what, I got a reward for this thing, I'm working harder for the next one so I can get the next reward.]

This was echoed by FG4 – Participant 3, who said:

I would say … better benefits … We don't have medical aid, so for instance, if we had a better medical aid structure instead of relying on my own, maybe it would be easier dealing with things instead of waiting for, say, back pain to manifest.

Lock *et al.* (2018) support this view by acknowledging that remuneration and recognition, which is in line with employees' time and effort, may contribute to reduced levels of perceived fatigue among employees and may form part of the ORF management programme.

iv) *Communication*

Communication was identified as a factor that may reduce the prevalence of ORF in the workplace. FG2 – Participant 2 said:

Ek dink daar is 'n paar goeters wat gedoen kan word, maar dit is nie 'hard and fast' en dan gaan 'fatigue' beter word nie. Ek dink een van die goeters is kommunikasie 'obviously' …
[I think there are some things that can be done, but it's not hard and fast and then fatigue is going to get better. I think one of the things is communication obviously …]

FG2 – Participant 1 echoed this by agreeing with FG2 – Participant 2:

Ja ek dink wat FG2 – Participant 2 eerste daar aangeraak het is maar kommunikasie. Ek dink daar moet 'n 'clear' kommunikasie wees van topbestuur af …

[Yes, I think what FG2 – Participant 2 touched there first is but communication. I think there needs to be a clear communication from top management …]

FG4 – Participant 1 also emphasised the importance of communication between the middle and top management of an organisation by saying the following:

… and I felt that the communication between myself and the top management became more open, and it definitely had a positive impact on my work, on my performance level definitely, my willingness to work, it definitely had an impact. I can feel it, I have more confidence, in doing stuff, taking making decisions, not taking decisions, making decisions, so yes that, communication is, it is not something I mentioned actually, but communication is super important. Open communication between the three levels is very important.

This was supported by Song *et al.* (2020) who suggest that workplace communication may reduce the development of fatigue in the workplace.

v)   Physical activity

Physical activity was identified as a factor that may reduce the prevalence of ORF in the workplace. FG2 – Participant 3 said:

Maar net as mense verstaan hierdie is jou 'lunch' uur, ons pla nie in daai tyd nie en jy voel gemaklik om net te kan opstaan en gou 'n broodjie te gaan maak en dan weer te kom sit of iets simpel soos dit.
[But just in case people understand this is your lunch hour, we don't bother in that time and you feel comfortable just being able to get up and quickly go and make a sandwich and then come and sit again or something silly like that.]

This was echoed by FG2 – Participant 2 who agreed with FG2 – Participant 3 by saying:

En weereens dan die oplossing daar is – gaan huis toe en gaan oefen.
[And again then the solution is there – go home and go exercise.]

This is supported by Ellingson *et al.* (2014) and Park *et al.* (2018) who recognise the beneficial effect of physical activity on energy and fatigue levels among office workers.

vi)   Support and compassion

Participants identified organisational support as a factor that may reduce the prevalence of ORF in the workplace. FG1 – Participant 2 said:

Myne is baie spesifiek. 'Top management' moet meer rigting gee. Minder vae goeters en die support wat ek wil hê – hulle moet leer om te luister. Hul is tipies die wat net sê wat hul wil hê en wat gedoen moet en hulle mis die menslike aspek. En dis hoekom mense na 'fatigue' toe gaan. As jy rêrig na jou mense kyk wat vir jou werk, kom jy dadelik agter wanneer iets verkeerd is. 'n Simpel voorbeeld is, ek het deur 'n vreeslike moeilike persoonlike tyd gegaan halfpad deur die jaar in die nuwe 'management' posisie. En daar is vir my gesê agteraf dat ek beter nie 'n druppel

minder 'performance' wys nie. En ek voel dis net soos, 'wow', mense verwag onmenslike goed van mense.
[Mine is very specific. Top management should give more direction. Less vague things and the support I want – they need to learn to listen. They're typically the ones who just say what they want and what's done and they miss the human aspect. And that's why people go to fatigue. If you look at your people who work for you, you immediately notice when something is wrong. A silly example is, I went through a terribly difficult personal time midway through the year in the new management position. And I was told behand my back that I'd better not show a drop less in performance. And I feel it's just like, wow, people expect inhumane stuff from people.]

This was echoed by FG1 – Participant 3, who said the following:

'Support'. Sonder twyfel 'support'. Ek sê nie finansiële 'support' nie, maar die ding is as ek sukkel met iets, dit is 'unfair' van my en my span om tot 2 uur in die oggend te sit en werk waar die base huis toe gaan en sê gaan op jou eie. Jy is langer in hierdie beroep as ek. Jy weet meer as ek. So hoekom kan jy nie ook saam met ons sit en ons help nie? Of wees net ten minste daar al … soos byvoorbeeld as ons so laat werk. Nou moet ek kos uit my eie sak uit koop. Dis nie regverdig nie. Ek moet nou by 'n kantoor sit, waar ek meisie alleen uit die CBD[3] *huis toe moet ry 12 uur in die aand. Wat van ons maak 'n ryklub? Net emosionele en fisiese ondersteuning. Ek verstaan as mens laat moet werk, dit gebeur partykeer. As ek tot 2 uur of 3 uur in oggend werk, moenie sê ons moet 6 uur weer op kantoor wees nie. Verstaan? Sê dan net die volgende dag kom bietjie later in – of soos FG1 – Participant 1 ook gesê het, wys net ten minste vir my jy is dankbaar. Jy hoef nie 'n bonus te gee nie, maar moet my ook nie goed belowe wat jy nie kan nakom nie. Moenie vir my sê ek gaan 'n bonus kry vir harde werk en dan gee jy dit nie vir my nie. So my grootste ding – ondersteuning.*
[Support. Without a doubt support. I'm not saying financial support, but the thing is if I'm struggling with something, it's unfair for me and my team to sit until 2 o'clock in the morning and work where the bosses go home and say go on your own. You have been in this profession longer than me. You know more than me. So why can't you sit with us as well and help us? Or just be there at least though … for example, when we work late. Now I have to buy food from my own pocket. It's not fair. I have to sit at the office now, where I as a girl has to drive home alone out of the CBD at 12 o'clock in the evening. What about us carpooling? Just emotional and physical support. I understand if you have to work late, it happens sometimes. If I work until 2 o'clock or 3 o'clock in morning, don't say we should be back at office 6 a.m. Understand? Then just say the next day come in a little later – or like FG1 – Participant 1 also said, just at least show me that you're grateful. You don't have to give a bonus, but also don't promise me things that you can't deliver. Don't tell me I'm going to get a bonus for hard work and then you don't give it to me. So my biggest thing – support.]

Organisational support was also emphasised by FG4 – Participant 1, who said:

… I mentioned assistance might be from the bottom, but they can also be assistance from top management in the sense that I don't want to use the words better management, but if the management from the top is top-notch. It does take a lot of strange strain of the middle level, about talking about processes in place.

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[3] Central business district.

> *Um, you know to manage different … like exception handling. Um, you know. So that strain is off your back.*

This was supported by Juevesa *et al.* (2020) who acknowledge that organisational support and top management compassion might reduce the prevalence of fatigue in the current twenty-first-century workplace.

vii)   Work-life balance

During the online focus group discussions, participants identified work-life balance as a possible mitigation strategy for preventing or treating ORF among middle managers. FG1 – Participant 1 said:

> *Van my kant af is iets soos byvoorbeeld verlof. En dis iets wat ons bv., 'you take it for granted'. Jy het hierdie hoeveelheid verlof maar nooit vat jy nie, want jy voel altyd te skuldig om jou verlof te vat. Want daar is altyd werk wat gedoen moet word. Altyd iets wat jy moet doen en ek voel dat dit eintlik iets is wat forseer moet word. As jy 15 dae verlof het of 20 dae verlof het is dit jou verantwoordelikheid vir jouself om hierdie emosionele en 'mental' rus te kan gee om dit te vat.*
> *[On my part, for example, something like leave. And that's something we e.g., 'you take it for granted'. You have this amount of leave but never take, because you always feel too guilty to take your leave. Because there's always work to be done. Always something you have to do and I feel that it's actually something that needs to be forced. If you have 15 days leave or have 20 days leave it is your responsibility for yourself to be able to give this emotional and mental rest to take it.]*

This is supported by Dawson *et al.* (2012) who emphasise the consequences of low work-life balance on stress, stress-related illness, and violence, as well as reduced life and job satisfaction. Such outcomes have been proven in research to result in increased absenteeism, turnover rates, and healthcare costs and reduced productivity, employee satisfaction, and loyalty – all of which may affect organisational performance and profits negatively. Furthermore, Van Hooff *et al.* (2011) highlight the importance of leisure activities in work as well as non-work environments among employees and identify the beneficial effects for those employees who engage in leisure activities.

viii)   Monitoring

The following feedback relating to the monitoring of the ORF as a possible mitigation strategy for preventing or treating the condition among middle managers was obtained during the online focus group discussions. FG3 – Participant 1 said:

> *Look, I do think that it is the responsibility of both the employer and the employee. So, what we've seen coming through, especially during COVID, is that the firm send out the surveys and the survey is a set of questions, and I think we've done it like every 2 months. And that set of questions is specifically set to identify where*

are the trainees and managers, mentally and physically, and if there is a need for the firm to step in a lot more than they initially thought of. But it is also, you are tired and that you need rest and you don't get support, then it is also the responsibility of the employee to say, listen, I need a break or help me. But, as you said previously, it is a lot easier said than done.

This is supported by Cavuoto and Megahed (2017) who propose the implementation of existing technological wearable devices to monitor the development of fatigue in the workplace on a real-time basis among employees.

4.1.2 Summary of chapter

This chapter presented the findings obtained by following the methodological process, as described in the previous chapter, according to themes and sub-themes that emerged following a thorough content analysis of collected data among middle managers from various organisations.

The most prevalent themes that relate to the perception, causes and mitigation strategies of ORF among the target population were identified, and it was evaluated whether these themes are supported by literature, using the in-depth literature review which was conducted in chapter 2 of this dissertation.

The following chapter concludes the research process by answering the research questions, as defined in Chapter 1 of this document.

CHAPTER 5   CONCLUSION AND RECOMMENDATIONS

5.1   Introduction

The primary objective of this study was to explore and describe the factors contributing and the strategies preventing ORF among middle managers in professional careers within the consulting sector, Tshwane metropolis. The following sub-objectives aimed to achieve the primary objective of this study:

- Explore and identify the perception of middle managers in professional careers concerning ORF in the workplace;
- Identify and describe the factors contributing to ORF among professional middle managers in the office environment; and
- Identify and describe organisational strategies that may reduce ORF among middle managers in professional careers.

Chapter 2 highlighted various definitions of fatigue in the workplace as well as the limited research that relates to white-collar workers and ORF. It was emphasised how limited research on ORF negatively affects the effective management thereof in the workplace. Chapter 2 further outlined the causes and effects of ORF to provide background information on the importance of the management thereof. Finally, this chapter concluded by outlining potential management strategies and aspects that should be included in a fatigue risk management programme.

Chapter 3 described the research process followed to answer the research objectives as outlined in Chapter 1. In order to describe the research process that was followed during this research approach, the sampling methodology, data gathering methodology, data analysis and ethical considerations were outlined.

Chapter 4 identified the themes that relate to the perception of ORF among middle managers, causes, and mitigation strategies thereof.

5.2   Conclusion on the key findings

The primary objective of this study was to explore and describe the factors contributing and the strategies preventing ORF among middle managers in professional careers within the consulting sector, Tshwane metropolis. Emphasis was placed on the perceptions of middle managers of ORF, contributing factors as well as possible mitigation strategies, which are outlined below.

During the focus group discussions analysis, themes emerged relating to the perception and experiences of middle managers in professional careers with regard to ORF in the workplace. These themes are given in descending order of occurrence: adverse effect on participants mental health; affects both work and personal factors; adverse effect on participants' physical health; reduced productivity in the workplace; results in increased conflict and irritability in the office and home environment; a complex phenomenon that participants found difficult to describe; adverse effect on participants' motivational levels in the workplace; and results in failures in their ethical evaluation. Participants also acknowledged that the phenomenon is not alleviated by sleep. This indicates the reality and presence of ORF for middle managers in the Tshwane Metropolis. It further indicates that ORF negatively impacts on the participants work life and life in general as reflected by the themes.

This study identified the contributing factors to ORF among professional middle managers in the office environment. The contributing factors are given in descending order of occurrence as identified during the focus group discussions: long work periods and high workload; unclear work expectations; lack of support; inactivity; and inadequate remuneration.

This study identified the mitigation strategies to ORF among professional middle managers in the office environment. The mitigation strategies are given in descending order of occurrence as identified during the focus group discussions: clearly defined roles and responsibilities; training of management on ORF; the importance of remuneration and recognition; communication; physical activity; support and compassion; work-life balance; and monitoring of fatigue levels.

5.3 Recommendations and managerial implications

The effective management of ORF requires a multi-dimensional approach, which consists of managing the causes of the phenomenon as well as incorporating mitigation strategies to manage ORF effectively. This recommendation is supported by literature that acknowledges that the effective management of ORF requires a multi-dimensional approach that includes an alteration in employee wellness programmes. Sadeghniiat-Haghighi and Yazdi (2015) consider an effective fatigue risk management programme as an approach consisting of numerous factors for managing ORF effectively. In support of the multi-dimensional approach, Maynard *et al.* (2020) recognise that fatigue management should include the active participation of both employees and employers on all organisational levels. Gander *et al.* (2011) state that the following objectives should be considered during the development of a fatigue risk management programme:

- Reduce the likelihood of employees being fatigued at work; and

- Mitigate the risk presented to fatigued-impaired employees.

Gander *et al.* (2011) furthermore propose including the following aspects in any fatigue risk management programme:

- Fatigue risk management policy;

- Education and awareness training programme;

- Fatigue reporting mechanisms with associated feedback; and

- Procedures and measures for monitoring fatigue levels among employees.

The following specific actions are recommended to upper management in order to reduce middle management's risk with regards to the development of ORF in professional careers within the consulting sector of the Tshwane metropolis:

- Defining clear roles and responsibilities for middle management positions versus other positions in lower and higher management;

- Reducing periods of high workload and long work hours as far as practicable;

- Promotion of physical activity during and after work hours among middle management;

- Promotion of work-life balance practices among middle management;

- Provision of training on the importance of physical activity, work-life balance, and other skills required for persons in middle management positions; and

- Providing better support to middle managers by means of feedback sessions between themselves and senior management.

The following managerial implications are anticipated in the implementation in the above specific recommendations with the aim of reducing the likelihood of employees being fatigued at work and mitigating of the risk presented to fatigued-impaired employees:

- Management will have to define clear roles and responsibilities for middle management positions by means of detailed job descriptions;

- Management will have to monitor middle management when periods of high workload and/or long work hours occur to prevent the onset of ORF;

- Management will have to design and implement physical activity programs amongst middle management in order to promote physical activity during and after work hours;

- Management will have to provide training on the importance of work-life balance practices, physical activity, and other skills such as human resource management to middle management; and

- Management will have to make provision for regular feedback and consultative session in order to provide better support to middle management.

5.4 Limitations of the study

Limitations refer to characteristics that limit the scope of the study (Simon, 2011). The following limitations were identified:

- The fundamental limitation of the study was the small sample size, which permitted the researcher to focus on participants' feelings during the research process (Bricki & Green, 2007);
- This study focused on middle managers. Therefore, the findings cannot be generalised to any other occupational group in an organisation;
- This study focused on the consulting sector. Thus, the findings cannot be generalised to any other industry other than consulting;
- This study focused on role conflict, roles and responsibilities, organisational ergonomics, employee assistance programmes and their relation to ORF. This study excluded all other factors influencing ORF in the workplace; and did not address the impact of COVID-19 on ORF among middle management.

5.5 Recommendations for future research

The following may be considered as future research in terms of ORF:

- A future study may include an expansion of the current study not only to investigate the impact of ORF among middle management but also include lower management positions;

- A future study may evaluate the ORF levels in rural areas instead of metropolitan areas such as Tshwane;

This was a hypothesis generation study. As a result the following may also be considered for future research:

- The impact of undefined roles and responsibilities on the ORF levels of management may be evaluated;

- The impact of periods of high workload and extended work hours on the ORF levels of management may be evaluated; and

- The prevalence of physical inactivity among management may be evaluated.

5.6   In concluding

Further research on ORF amongst various occupation groups and levels are viewed as important to address the often-extreme workplace conditions and expectations that put unnecessary strain on especially middle managers and professional employees. In the current fast-pace world of work and 24/7 expectations of delivery, people cannot cope and ORF builds up with possible detrimental effects and outcomes. As managers, this has to be taken to task and not just drive numbers but also care for people irrespective of their level or occupation. If ORF sets in amongst middle managers, organisations cannot execute strategy and will pay a hefty price.

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ANNEXURE A   ETHICAL APPROVAL DOCUMENT

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Economic and Management Sciences Research
Ethics Committee (EMS-REC)

24 April 2020

Prof Y du Plessis
Per e-mail
Dear Prof du Plessis

EMS-REC FEEDBACK: 24042020
Student: De Wet, HC (21205779)(NWU-00638-20-A4)
Applicant: Prof Y du Plessis - MBA

Your ethics application on, *Occupational-related fatigue strategies for middle managers in professional careers, Tswane metropolis,* which served on the EMS-REC meeting of 24 April 2020, refers.
Outcome:
Approved as a minimal risk study. A number NWU-00638-20-A4 is given for one year of ethics clearance.

Kind regards,

Mark
Rathbone

Digitally signed by Mark Rathbone
DN: cn=Mark Rathbone, o=North-
West University, ou=Business
management,
email=mark.rathbone@nwu.ac.za,
c=ZA
Date: 2020.05.14 11:58:19 +02'00'

Prof Mark Rathbone
Chairperson: Economic and Management Sciences Research Ethics Committee (EMS-REC)

1

ANNEXURE B   LETTER OF INTRODUCTION AND INFORMED CONSENT

NWU®

Ethics informed consent form

07 August 2020

Letter of Introduction and Informed Consent

TITLE OF STUDY: Occupational-related fatigue strategies for middle managers in professional careers, Tshwane metropolis

Faculty of Economic and Management Sciences
NWU Business School
SOUTH AFRICA
Researcher: Christo de Wet
Student number: 21205779
CELL/Mobile contact: (+27) 082 649 6599
Email: Christo.dewet@outlook.com

Dear Participant,

As a middle manager in a professional career within the Tshwane metropolis, you are invited to participate in a research study conducted by myself, Christo de Wet. This research study forms part of my Masters in Business Administration at North-West University. Please take some time to read the information presented here, which will explain the details of this study. The purpose of this study is to explore and determine the prevalence and causes of occupational-related fatigue among middle managers in professional careers within the consulting sector and to develop organisational strategies to manage occupational fatigue in middle management.

Please note the following:

- Your participation in this study is <u>voluntary</u>. You may choose not to participate, and you may also stop participating at any time without any negative consequences;
- This is an <u>anonymous</u> study, as your name will not appear on the questionnaire. The answers you give to the questions during the focus group discussions will be treated as strictly <u>confidential</u> as you cannot be identified in person based on the answers you give;

- This study will follow a qualitative focus group research approach which the researcher and several participants meet as a group to discuss a given research topic. You will be provided with the meeting, time date, and location;
- The North-West University's Faculty of Economic and Management Sciences ethical committee has approved this study – **Ethics number NWU-00638-20-A4;**
- Your inputs will be anonymous and at no stage can your specific data be isolated from the combined database;
- The results of the survey will be used for academic purposes only. They may be published on the North-West University's online portal (Boloka: Institutional Repository). We will provide you with a summary of our findings on your request; and
- Please contact my study leader, (**Prof Yvonne du Plessis, Tel: +27 18 389 2021, email: Yvonne.duplessis@nwu.ac.za)** if you have any questions or comments regarding the study.

You must be satisfied that you understand what this research is about and how you are involved. Also, note that your participation is entirely voluntarily, and you are free to exit and not participate at any time.

Please indicate that you:
- Agree to take part in the research study titled: Managing occupational-related fatigue in middle managers within the private sector, Tshwane metropolis;
- Have read this information in a language with which you are fluent and comfortable;
- Have received the contact details to ask any questions regarding the consent, as well as the researcher and any of the items to be answered;
- Understand the data will be utilised anonymously and that your data can not be identified within the data set;
- Have read and understood the information provided above; and
- Give your consent to participate in the study voluntarily. (Please tick).

I AGREE	I NO NOT AGREE

By agreeing to participate in this study, you are invited to attend a focus group discussion at a time, date and location, which will be communicated in due course. The duration of the focus group discussions will take between 45 and 90 minutes, and you will be provided with a beverage.

There are no wrong answers, and your first response to a question is often the most valuable one.

Thank you in advance
Sincerely,

Christo de Wet
MBA Student

ANNEXURE C   LANGUAGE EDITOR CERTIFICATE

In a Word

Marike van Rensburg
Editor
082 820-4716

Po Box 11823
Wierdapark South
0157
marike.vanrensburg@gmail.com
www.inaword.co.za

For:

HC de Wet
North-West University
Student number: 21205779

8 December 2020

Editing certificate

This document serves to confirm that the following mini-dissertation has been edited:

Exploring occupational-related fatigue strategies as perceived by middle managers in Gauteng
Master in Business Administration

Editing included:

- Checking spelling, grammar and punctuation.
- Checking consistency of terminology and style.
- Checking the style of references and citations against the provided style guide (accuracy of source information remains the responsibility of the student).
- Identifying areas that require additional corrections.

The Microsoft Word® track changes functionality was used to make the student aware of changes. It is the student's prerogative to choose whether to accept or reject changes.

The document remains the original work of the student. The editor has not added any additional information, rewritten sections, or changed the structure of the document.

Sincerely,

Marike van Rensburg

in a word

ANNEXURE D   TURNITIN REPORT

21205779:Rev_1_ydpMini_Dissertation_Christo_21205779_-_MVR.docx

TURNITIN

C De WET MBA Dec 2020   APPROVED

ORIGINALITY REPORT

YdP Checked

15%	**13**%	**4**%	**6**%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	repository.nwu.ac.za Internet Source	**2**%
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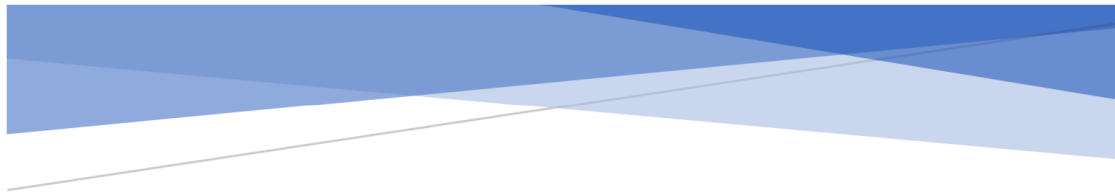
INTERVIEW GUIDE:

Occupational-related fatigue strategies for
middle managers in professional careers,
Tshwane metropolis

Participant's Pseudo Name:

Professional Occupation:

Years in middle management:

Industry type:

Date of focus group discussion:

Venue of focus group discussion:

Christo de Wet
Christo.dewet@outlook.com

Interview Guide: Occupational-related fatigue strategies for middle managers in professional careers, Tshwane metropolis

Seating Plan:

Seating Plan:

Interview Guide: Occupational-related fatigue strategies for middle managers in professional careers, Tshwane metropolis

Welcome, and thank you for being here today. Let me introduce myself. I am Christo de Wet, and I will be the moderator in today's discussion. The format which we will be using is a focus group study which is a conversation that focuses on specific questions and responses in a safe and confidential environment.

The purpose of this focus group meeting is to get your input about the prevalence and causes of occupational-related fatigue among middle managers in professional careers within the consulting sector and to explore the strategies to manage occupational-related fatigue among middle managers effectively. I want to have a deeper understanding of your perceptions and experience of occupational-related fatigue. Furthermore, I would like to know from you what organisations should do to reduce the prevalence of occupational-related fatigue in especially middle managers within professional careers.

I will guide the conversation by asking questions that each of you can respond to. Please remember that there are no right or wrong answers to these questions. Just be honest. If you wish, you can also respond to each other's commend, like you would in an ordinary conversation. It is my job to make sure that everyone here gets to participate, stay on track and within the timeframe. I will also be taking notes and summarise your comments.

Before we get started, there are two things that I want to bring your attention:

First, you do not have to answer any questions that you do not feel comfortable with. This focus group today is anonymous and confidential. "Anonymous" means that we will not be using your names, and you will not be identified as an individual in our report of this project. "Confidential" means that what we say in this room should not be repeated outside of this room, except in a research document under the ethical rule of NWU.

Secondly, the information we gather today will be compiled into a final report which will include a summary of your comments and some recommendations. This report will remain the property of the North-West University, which will be available through their online portal.

I cannot control what you do when you leave. Still, I ask each of you to respect each other's privacy and not tell anyone what was said by others here today. Although we hope everyone here honours this confidentiality, please remember that what you say here today could be repeated by another focus group member. So please, do not say anything that you need to keep private.

As you can see, we will be recording this focus group. The record will only be used to make sure our notes are correct and will not be heard by anyone outside of this study. Finally, we will be working through the following three types of questions:

- **Engagement questions** which will act as opening questions were we get to know one another;
- **Exploration and follow up questions** which will focus on the topic at hand and if required discuss follow-up questions on issued discussed; and
- **Exit questions** which will act as closing out inquiries to determine if anything else needs to would like to be included or added by the participants to the researcher.

All of you have been provided with a document with all of the questions which we will work through. Please feel free to make notes of critical themes picked up during the discussion. I will like to get the documents back afterwards as it forms part of the quality control during the data collection process.

Interview Guide: Occupational-related fatigue strategies for middle managers in professional careers, Tshwane metropolis

Let's begin with the engagement questions:

Engagement questions:

Engagement Question 1: What do you understand by occupational fatigue?
Would you say middle managers are affected by occupational fatigue? Why and How?

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Exploration and follow-up questions:

Exploration and follow-up questions 1: Occupational-related fatigue in literature is regarded as a potential risk in the offices, which affects all employees regardless of position, skill level and education level. However, research indicated that middle managers are potentially more stressed compared with higher and lower professional groups.

How would you describe fatigue as a result of the work environment during your professional duties?

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Exploration and follow-up questions 2: Occupational-related fatigue does not develop over a short period as in the case with a lack of sleep, heavy physical or mental word. Instead, it may develop over a more extended period. This, however, makes it more difficult to identify possible contributing factors as the stimulus may have occurred months before the experience of occupational-related fatigue.

What work factors, in your opinion, occurring currently may lead to the development of occupational-related fatigue within the next three to six months?

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Exploration and follow-up questions 3: As part of an organisation's corporate social responsibility, the challenge of occupational-related fatigue should be addressed as part of its long term sustainable development strategy. This is, however, easier said than done.

What would you suggest can be done by your organisation (Top managers, support functions) to assist you in handling the above matters better and as a result, reduce the potential for the development of occupational-related fatigue?

Exit question:

Exit question 1: Are there any other point you would like to make about this subject of Occupational fatigue of middle managers in professional careers?

Exit question 2: Is there anything we did not touch on but is essential that relates to occupational-related fatigue and middle management?

Closure:
Member checking of transcripts- I might be following up on some details.
Thank you very much