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Motivation and Productivity of Female Employees in China With Scoliosis Pain

Shauna-Kay Reeves
Walden University

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Walden University

College of Management and Human Potential

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Shauna-Kay Reeves

has been found to be complete and satisfactory in all respects,
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Walden University
2025

Abstract

Motivation and Productivity of Female Employees in China With Scoliosis Pain

by

Shauna-Kay Reeves

MBA, European Business School of Barcelona, 2021

BA, University of Technology, Jamaica, 2016

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Industrial/Organizational Psychology

Walden University

November 2025

Abstract

A scoliosis diagnosis can impact an individual's work performance, particularly if there is a lack of proper ergonomics or workplace accommodations that might lead to increased pain and discomfort. Organizational leaders must understand this impact as an indicator of employee motivation and productivity. The purpose of this qualitative, interpretative phenomenological analysis was to explore the lived experience of female employees in China with scoliosis pain and its impact on their motivation and productivity. The theoretical foundations used in this study were the job demands-resources model and the self-determination theory. The participants consisted of eight female employees with scoliosis pain working in China. Data were collected using semistructured interviews. Five themes emerged from the data analysis: (a) navigating and adjusting everyday life with scoliosis pain, (b) tools used for managing chronic scoliosis pain, (c) psychological aspects and affective response to pain in the workplace, (d) chronic pain impacts work performance and productivity, and (e) opportunities to improve employee well-being. Organizational leaders can use these identified themes to create strategies addressing scoliosis pain and productivity, the role of need satisfaction and emotions in motivation, and the desire for ergonomic and relational support. The implications for positive social change include the potential for organizational leaders to implement policy changes that raise ergonomic awareness, amplify employees' voices with scoliosis pain, and inspire systematic reform to further enhance accommodation support and workplace well-being.

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Dedication

To my mother, Danet Minerva Reeves, for who you've been, who you are, and who you never got to be. I did this for me and for you. To my aunt, Grace Leonie Reeves, for your unwavering confidence in me. You always knew I could and that I would. Thank you for inspiring and, most of all, for seeing me. To my nieces and nephews: Jivone Reeves, Ashawni Bennett, Italia Bennett, and Irie Reeves, may this accomplishment show you all that you can do anything and everything. To my father, Samuel Elijah Reeves, I believe you're smiling down on me and that you're proud.

Acknowledgments

It was my first year of undergrad when the professor asked us to create a project using our future selves. Some of my classmates wrote their names as they were, some added Mrs. or Mr., while I wrote Dr. In that moment, I knew that my undergraduate study would be the beginning of a beautiful, hard journey filled with twists and turns, and you all with me along for the ride.

To the Heavenly Father, thank you for the moments when I didn't know "how", and I could only rely on the "Who", which is You. I raise a Hallelujah because Your word never returns to You void. "For I know the plans I have for you," declares the LORD, "plans to prosper you and not to harm you, plans to give you hope and a future" (Jeremiah 29:11, New International Version).

To my husband, Tommy Singleton, thank you for your love, support, and encouragement in all that I do.

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Chapter 1: Introduction to the Study

Many people around the world report physical pain, with estimates in 2021 indicating that almost one third (32.1%) are in physical pain globally (Macchia, 2022). This was an increase from 26.3% in 2009, with the data showing that younger people are in pain now more than ever (Macchia, 2022; Zimmer et al., 2021). There are many types of painful diseases, but the current study focused on chronic musculoskeletal diseases, specifically scoliosis. Scoliosis is a degenerative disease in which the spine curves sideways (Mayo Clinic, 2024). Scoliosis is often diagnosed during childhood, but many people go through life without a formal diagnosis unless triggered by a specific activity, poor posture, sedentary positions, or improper ergonomics (Mayo Clinic, 2024). Much of the research around scoliosis has been in the health sciences and has focused on children and adolescents, not working adults (Anwer et al., 2015; Schmid et al., 2020; Zaina et al., 2023). Employees diagnosed with musculoskeletal diseases such as scoliosis have become accustomed to living with pain, pushing through pain, or quitting because of pain (Gauntlett-Gilbert & Brook, 2018; Macgregor, 2024; Pandelani et al., 2023). The current study provided an opportunity to understand the experiences of individuals with scoliosis pain and their motivation and productivity at work.

Background

The recent literature on scoliosis addressed scoliosis diagnosis in children, treatments such as surgery and bracing, parents' feelings about their child being diagnosed, and how adolescents deal with the disease (Cheung et al., 2022; Choi et al., 2019; Misterska et al., 2011; Pezham, 2022). After combing through Medline, PubMed,

APA PsycInfo, and Google Scholar, and enlisting the assistance of librarians, I determined that the topic of scoliosis, productivity, and motivation in adults had not been addressed. Literature on motivation included Maslow's theory, Herzberg's two-factor theory, and intrinsic and extrinsic motivation, but no studies mentioned individuals with scoliosis pain (Cerasoli et al., 2014). Similarly, research had been done on productivity in the workplace, yet none of it had been done with individuals diagnosed with scoliosis as the participants (Lee & Jo, 2023). Therefore, the current study addressed the gap by exploring female employees' workplace motivation and productivity with scoliosis pain.

Companies have a vested interest in understanding workers' motivation and productivity at work. This might include determining how satisfied employees are and their organizational commitment. Hackman and Oldman (1975) designed the Job Diagnostic Survey to determine whether jobs needed to be redesigned and how this redesign would improve employee motivation and productivity. The Job Diagnostic Survey can also be used to evaluate the changes before and after the diagnostic test. Later, the job demands-resources (JDR) model by Demerourti et al. (2000) expanded on this survey to add that individuals need certain resources to meet job demands and be satisfied at work. The self-determination theory (SDT; Ryan & Deci, 2000b) also posits that individuals need three needs filled to be satisfied: autonomy, competence, and relatedness. If these needs are satisfied, individuals are said to be more motivated. I explored these topics through a detailed literature review and a trustworthy study.

Problem Statement

Individuals with scoliosis might experience physical challenges when working, and it is important to understand the impact on their motivation and productivity.

Scoliosis is a chronic musculoskeletal disease often associated with adolescents and discussed in the health sciences (Cheung et al., 2022; Choi et al., 2019; Misterska et al., 2011; Pezham, 2022). Recent research addressed scoliosis in children and adolescents, but it is a public health concern for adults and their quality of life, productivity, and motivation at work (Anwer et al., 2015; Schmid et al., 2020; Zaina et al., 2023). A scoliosis diagnosis can impact an individual's work performance, including productivity and motivation, particularly if there is a lack of proper ergonomics or workplace accommodations, which might lead to increased pain and discomfort (Ahmed et al., 2022; Black & St-Onge, 2022; El Kadri Filho & Lucca, 2022). This discovery has led to the need to understand this phenomenon further by exploring the perspectives of females working with scoliosis pain and their motivation and productivity, to extend the research findings and provide contextually grounded insights.

Recent research has shown that improper ergonomics and work practices have led to an increase in work-related musculoskeletal disorders (Shin & Park, 2017; Skaalvik, 2020; Ullah et al., 2020; Wollter-Bergman et al., 2021). However, these studies failed to consider scoliosis specifically and the pain associated with it. There has been mention of other musculoskeletal diseases, such as osteoarthritis, and how these diseases have affected productivity in loss of work time or absenteeism (Leifer et al., 2022; Wilkie et al., 2015). Work-related musculoskeletal disorders also affect an individual's motivation

by causing them to feel as if they are burdensome, do not belong, or want to give up (Lyhne et al., 2021). These revelations suggest the need to understand the perspectives of female workers with the musculoskeletal disease of scoliosis and the pain that accompanies it. Addressing this gap may increase understanding and awareness about the disease and uncover strategies relevant to organizations regarding the appropriate support to offer workers.

Purpose of the Study

This qualitative study followed the interpretivist research paradigm, exploring the lived experiences of people experiencing scoliosis pain at work and their motivation and productivity using interpretative phenomenological analysis (IPA). The IPA design has been used for health-related studies when there was a need to understand lived experiences and individual perspectives (Smith & Osborn, 2015). Interpretivism allows the researcher to immerse themselves in the story to explore the participants' meanings and different perspectives. Interpretivism was ideal for the current study because no two people have the same pain level, scoliosis management, support at the company, productivity, or motivation. This methodology provided further insights that otherwise would not have been possible (see Smith & Osborn, 2015).

Research Questions

RQ1: How do female employees with scoliosis pain describe their motivation when working?

RQ2: How do female employees with scoliosis pain describe their productivity when working?

Theoretical Frameworks for the Study

Demerourti et al. (2001) developed the JDR theory to measure burnout and engagement. Demerourti et al. discovered that people experience burnout due to their working conditions and that JDR can be applied across multiple work environments. If job demands are high, workers will experience exhaustion while still engaged. Alternately, if job resources are lacking to meet these demands, disengagement occurs. If job demands are high and resources low, burnout occurs. The JDR model remains relevant in the 21st century and has been cited as one of the “most widely used paradigms in occupational health and positive psychology” (Galanakis & Tsitouri, 2022, p.1). Empirical support for this theory indicated its generalizability and flexibility across jobs (Brough et al., 2013), across qualitative and quantitative studies (Lesener et al., 2020), across different countries (Sharifi et al. 2022; Skaalvick, 2020; Ullah et al., 2020), and across job demands and resources (Bakker et al., 2023), making it useful in the current study. Job resources can be defined as ergonomic support, workplace exercise, health insurance, role clarity, education, and training, and job demands refer to the need for these resources due to scoliosis pain, including but not limited to workload, poor working environment, poor communication, and ambiguous work role.

The second theoretical framework was the SDT. Developed by Ryan and Deci (2000a), this theory focuses on motivation. Inspired by the work of previous motivational theorists who described motivation as a unitary concept, Ryan and Deci expanded the concept and created three tenets (autonomy, competence, and relatedness), which they opined lead to need satisfaction. Autonomy refers to the level of freedom individuals

have to follow their initiative, competence refers to their capability, and relatedness refers to the relationships formed. According to Ryan and Deci, SDT is a person's motivational response to their environment. This theory was relevant to my study because it addressed the factors that motivate individuals experiencing scoliosis pain and identified which tenet contributed to their satisfaction.

Nature of the Study

The interpretivist paradigm was suitable for the phenomenon being researched. Scoliosis is a degenerative disease that alters an individual's daily life, especially when not managed (Mayo Clinic, 2024). By exploring the motivation of female employees with scoliosis pain and their productivity at work, I delved into personal experiences, feelings, perceptions, and nuances. These were best explored through a qualitative design to better understand participants' experiences. The methodology followed was IPA, and data were obtained through semistructured interviews online via the Zoom software with eight female employees living in China. The data were transcribed using Zoom and analyzed using the IPA steps.

Definitions

Chronic pain is prolonged and continuous pain, often due to a health condition (Mills et al., 2019).

Extrinsic motivation refers to external rewards such as salary, recognition from others, and other fringe benefits (Donovan, 2001).

Intrinsic motivation refers to the innate ability to want to do something; people have a more profound sense of achievement and desire to complete tasks (Donovan, 2001).

Lived experience is subjective depending on the individual and refers to what they face daily and how they make meaning of life (Karunamuni et al., 2021).

Motivation is the reason why people do what they do. There are two main types: intrinsic and extrinsic (Donovan, 2001).

Neuropathic pain is a type of chronic pain that may occur due to damage in the nervous system related to the spine (Cavalli et al., 2019).

Pain refers to physical or mental suffering or discomfort (Raja et al., 2020). There are different types of pain; however, for the purpose of the current study, pain referred to chronic pain and neuropathic pain.

Productivity refers to how effectively an individual does their work (U.S. Bureau of Labour Statistics, n.d.).

Scoliosis is a degenerative disease of the spine curving sideways. This is often diagnosed during childhood, but many people go through life without an official diagnosis unless triggered by specific activity, poor posture, sedentary positions, or improper ergonomics (Mayo Clinic, 2024).

Self-efficacy is an individual's belief that they can achieve a goal or task (Bandura, 1986, as cited in Waddington, 2023).

Self-leadership is the ability to master oneself and aim for continuous improvement and personal growth (Kang et al., 2022).

Assumptions

There were several assumptions in this study. The initial assumption was that I would have enough participants to explore the phenomenon thoroughly. The second assumption was that participants understood what I was asking and answered honestly. The third assumption was that scoliosis pain might alter female workers' motivation at work. Workers in pain might feel less motivated; alternatively, some might feel more motivated. The fourth assumption was that scoliosis pain may alter workers' productivity at work. If female workers feel less motivated, this might lead to decreased productivity. These assumptions were necessary for the context of the study to understand female employees' experience with scoliosis pain at work. The fifth assumption was that the results might be transferable to other job sectors and countries.

Scope and Delimitations

The aspects of the research problem that were addressed in this study were the lived experiences of female employees with scoliosis pain and their motivation and productivity at work. This focus was chosen due to a lack of literature on female employees with scoliosis pain. This study focused on female employees in China with scoliosis pain between the ages of 22 and 60. These women were employed or had been employed in a job where they were required to sit for at least 4 hours. This study did not include men or women who were not fluent in English. The study also did not include pain from other health conditions.

Limitations

There were several limitations of this study. First, this study was conducted in English and not Chinese. The flyer was shared in groups with both English and Chinese speakers, so some Chinese-speaking individuals might have translated the flyer to understand what it was saying. Even though Chinese-speaking individuals might be diagnosed with scoliosis, they could not participate because this study was conducted in English. The second limitation was that this study only included women with scoliosis pain unrelated to any other musculoskeletal disease. The third limitation of this study was the small sample size associated with qualitative methodology, so the results are not generalizable.

Significance

This study may contribute to industrial/organizational psychology by addressing the phenomena of motivation and productivity among employees suffering from scoliosis pain. The study may extend previous motivational studies that list intrinsic and extrinsic motivational rewards in the workplace by adding what individuals with scoliosis pain need. Additionally, the study may extend earlier studies on workplace productivity. This information may be relevant to companies, employees, and customers. My study may help raise understanding and awareness of ergonomic concerns at companies in China and how these impact an individual's motivation and productivity. Understanding these factors could help these organizations embrace new systems and processes that may be advantageous to the company. Furthermore, findings may contribute to positive social change by providing a voice to an underrepresented group. In doing so, more people

could be made aware of this group and how to support them, no matter how small.

Additionally, social change can catapult other changes, leading to social progress and a more inclusive society (Janssens & Zanoni., 2021).

Summary

In this IPA study, I explored the motivation and productivity of women in China working with scoliosis pain. In this chapter, I established the context of the research topic through the introduction, background, problem statement, and purpose. I also presented the research questions, the theoretical frameworks on which the study was grounded, the nature of the study, and definitions of key terms. I ended the chapter with the study's assumptions, scope and delimitations, limitations, and significance. In Chapter 2, I explore the existing body of literature by discussing the methodology, main assertions, and limitations in an in-depth and comprehensive synthesis.

Chapter 2: Literature Review

The purpose of this qualitative IPA was to explore the lived experience of female employees in China with scoliosis pain and its impact on their motivation and productivity. In previous studies, the topic of motivation, productivity, and scoliosis had been discussed, but not with the focus that the current research addressed. In this chapter, I discuss the recent research surrounding the topic and the gap identified. The gap identified was a lack of research on scoliosis pain from a social perspective and not solely from a health sciences perspective, as previous researchers had addressed. Previous studies had not researched how employees' motivation and productivity had been impacted, and the challenges associated with the pain from their diagnosis.

This scholarly review includes the conceptual framework, historical research, recent research, and methodological designs of previous studies addressing the phenomenon of employees diagnosed with scoliosis, their motivation, and productivity at work. I discuss motivation, productivity, work-related musculoskeletal diseases, scoliosis pain, and interventions with SDT and the JDR model as theoretical frameworks. In the review, I also discuss research published on personality, emotions, and self-leadership strategies.

Literature Search Strategy

In this literature search, I aimed to find, organize, summarize, and synthesize material on scoliosis, motivation, and productivity. I used the Walden University Library, Google Scholar, books, and articles from the databases to accomplish this objective. First, I compiled a list of the books read during my tenure at Walden surrounding my topic.

Next, I accessed the Walden Library and used the keywords “scoliosis” and “motivation,” which yielded few results. I added limiters such as “peer-reviewed,” “date,” and “language,” and then continued experimenting with different keywords such as “back pain and motivation” or “pain and productivity.” Most scoliosis results were from the health sciences, which were irrelevant to my research because my area of study was the social sciences and, more specifically, people’s behavior in the workplace. I broadened my search to include terms such as “musculoskeletal diseases” and “ergonomics.” I found more results that highlighted the need for my study. I also contacted the Walden librarian to ask for assistance in identifying publications with scoliosis and motivation as the Boolean phrase, and their response revealed the scarcity of information available, emphasizing the importance of my research. Most of the articles I found came from Medline, PubMed, and APA PsycInfo databases, which I accessed via the Walden Library or Google Scholar searches. I double-checked Ulrich’s directory to ensure that the articles on Google Scholar were peer reviewed. Another strategy employed in finding articles was checking the reference lists of the articles I read and reading what and who researchers examined to include in my research.

Theoretical Foundation

The self-determination theory (SDT) and the job demands-resources (JDR) model are the theories and models that I used to ground this study. These theories were chosen based on their relevance to my study and shared outcome focus. Throughout this review, they were discussed based on empirical literature, and later in Chapter 5, they are discussed within the scope of the current study’s results.

Deci and Ryan (1985) introduced the SDT, which focuses on the needs of individuals. It is a psychological theory that views motivation as a combination of intrinsic and extrinsic factors. Earlier research focused on motivation from external sources, including rewards and punishment. Deci and Ryan then proposed that individuals are not just acting because of the promise of a reward or the fear of punishment but rather based on the value they place on a task or how interested they are in completing it. That is their intrinsic motivation. Hence, the SDT was developed. It maintains that three needs are to be met for individuals to be satisfied and motivated.

According to SDT, these needs are autonomy, competence, and relatedness. Autonomy refers to an individual using their initiative to complete tasks. Particularly, they feel in control because of the freedom to make decisions. Competence is one's ability to complete a task because they can do so. In organizations, this refers to employees being able to fulfill their job roles expertly. Relatedness is the feeling of belonging or the relationships cultivated. That is, people are more motivated when they feel connected.

Over the years, SDT has developed six subtheories (Sheldon & Prentice, 2019). Starting with cognitive evaluation theory (CET), this is the relationship between intrinsic and extrinsic motivation. Second, the organismic integration theory (OIT) suggests that people may respond in specific ways due to external influences rather than personal interest. Third, the causality orientation theory (COT) addresses personality and motivation in different situations. Fourth, the basic needs theory (BNT) addresses the fundamental principles of SDT: autonomy, competence, and relatedness. This subtheory

concentrates on how people become driven when these requirements are met. The fifth sub-theory is the goal contents theory (GCT). GCT assesses the benefits and drawbacks of achieving a goal for an individual's well-being. The sixth theory is the relationships motivation theory (RMT), which expands on BNT by focusing mainly on the importance of quality relationships, which will help to motivate individuals. These subtheories encompass SDT and address the different needs and motivations individuals might have, and more specifically, what might motivate them at work (Sheldon & Prentice, 2019). Individuals diagnosed with scoliosis and experiencing scoliosis pain might have different needs compared to those who are not physically challenged. These needs can be met in different ways, which leads to the second theory on which this study will be grounded: the JDR model.

The JDR model came about by considering an extension of burnout. Demerouti et al. (2001) developed the JDR model, which suggested that burnout affects all jobs. The initial model focused on how stressors, namely job demands, affect individuals at work. These job demands referred to "physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs (e.g., exhaustion)" (Demerouti et al. 2001 p. 501). According to the JDR model, these job demands negatively affect employees' well-being through exhaustion and disengagement. To combat the job demands, Demouriti et al. proposed job resources such as "feedback, rewards, job control, participation, job security, and supervisor support" (p. 503). Schaufeli and Bakker (2004) further revised the model to test burnout and engagement and their predictors. For individuals who are

experiencing low strain at work, motivation is said to be high. Alternatively, if individuals are experiencing high strain, then motivation is low. Hence, the dual process demand-resources were created (Schauefeli & Bakker, 2004). The model has continued to evolve over the years to encompass support from fellow theorists. To date, there are seven propositions of JDR, one of which is the definition of the categories of job demands and resources (Demouriti et al., 2001 as cited in Bakker & Demerouti, 2017). Second is the process involved in each and how it affects motivation (Demouriti et al., 2001 as cited in Bakker & Demerouti, 2017). The third is that resources mediate the relationship between demands (Bakker & Demerouti, 2017). Fourth is increased resources translate to increased motivation (Bakker & Demerouti, 2017). Fifth is personal resources and efficacy, and how it impacts how they respond to situations (Bakker & Demerouti, 2017). The sixth is that motivation positively affects performance, whereas stress does not (Bakker & Demerouti, 2017). Recently, a seventh proposition was added to include job crafting. That is, if workers are motivated and satisfied, then they perform more effectively (Bakker & Demerouti, 2017). Individuals diagnosed with scoliosis might have different demands and require different resources to meet said demands.

Both the SDT theory and the JDR model have stood the test of time. They have been applied to organizations cited in thousands of papers and have led to the creation of other frameworks, such as the study demands resources, which target students (Lesener et al., 2020). In this research, I delved into the tenets of these theories and their impact on female employees diagnosed with scoliosis' motivation and productivity. SDT focuses on psychological needs while JDR focuses on job demands and resources. Although

different, both share a focus on outcomes such as motivation, productivity, and overall well-being in the workplace. It can be argued that satisfying the tenets of SDT leads to motivation and the resources in JDR lead to productivity while reducing demands (Bakker & de Vries, 2021). These two theories align this proposed study because while the JDR might explain demands and resources influencing productivity, SDT offers insights into how and why these demands and resources influence motivation and productivity.

Literature Review Related to Key Concepts

Job Demands-Resources

Companies want their employees to be satisfied with their working conditions so they can perform better. Demouriti et al. (2001) devised a model for dividing working conditions into demands and resources. This model, known as JDR, added that burnout, exhaustion, and disengagement are results of increased demands and lack of resources. Demands include, but may not be limited to, the workload, time pressure, nature of work, environment, role conflict or ambiguity, lack of autonomy, stressful tasks, bureaucratic control, and/or lack of career and personal development opportunities. Resources refer to the actions taken to combat the demands. These resources include but are not limited to salary, training, appropriate work hours, autonomy, clear instructions, participatory management, and an environment that fosters growth. Demouriti et al. confirmed that individuals in all sectors and fields had these issues. They also found that high job demands increase exhaustion, and low job resources lead to high disengagement. Schaufeli and Bakker (2004) later tested burnout and engagement and their predictors.

Burnout and job engagement are on different ends of the spectrum, yet they are affected by the same factors (Schaufeli & Bakker, 2004). If individuals are exhausted, then this leads to burnout. Alternatively, low exhaustion leads to more engagement. Both job demands and resources affect an individual's physical and mental health in the workplace. If workers are overworked and stressed, this can exacerbate health issues, and the opposite can be said if they are not stressed.

In addition, individuals with musculoskeletal disorders, such as scoliosis pain, may require specific resources from the organization to meet the job demands. These might include adjusted workspaces, exercises, break time, and other tailored interventions. Daneshmandi et al. (2017) used the Nordic Musculoskeletal Questionnaire (NMQ) to assess the effects of prolonged sitting periods on 447 Iranian office workers. The results showed that participants sat for approximately 6.29 hours at work. It reported that 73.6% of workers were exhausted, and 48.8% of the office workers felt uncomfortable with their workstations. The authors proposed modifying workstations to include sit-to-stand desks. However, they cautioned that this might necessitate further organizational structure, environment, and systems adjustment. The JDR model is apt to discuss how organizations might retool or restructure if necessary to meet job demands.

In another study, Skaalvick (2020) used the JDR model to explore principals' efficacy and leadership and the relationship between job demands and resources. The study revealed that those with higher self-efficacy could handle job demands better (Skaalvick, 2020). Admittedly, there is a paucity of research regarding job demands, resources, and worker productivity. Skaalvick also listed that further research is needed to

examine other job demands and resources. Thus, in this proposed dissertation study, I will seek to address these deficits.

Self-Efficacy and Self-Leadership in the Workplace

An individual's environment, behavior, and beliefs influence their motivation and productivity at work. They might respond to various factors depending on their personality traits and emotional intelligence. For this study, I will concentrate on individuals' self-efficacy and self-leadership and how these characteristics unfold in the workplace. The concepts of self-efficacy and self-leadership can be linked to SDT and JDR. Self-efficacy allows individuals to demonstrate competence; self-leadership allows them to demonstrate autonomy, both of which are tenets of SDT and might increase motivation when satisfied (Chu et al., 2021). Similarly, higher self-efficacy might lead to job demands being more manageable, and those with self-leadership skills might develop better strategies (resources) to cope (Bakker & de Vrie, 2020). To understand the motivation and productivity of individuals within the organization, it is necessary to further examine self-efficacy in the workplace and self-leadership skills and strategies.

Self-Efficacy in the Workplace

Individuals higher in self-efficacy may respond differently to their environment. Put differently, problem-solvers who can act independently might not see a job demand as an inhibitor but as an opportunity for success. They know that they are competent and might be inclined to create resources to meet the job demands. Skaalvick and Lyhne et al. (2021) supported this claim in their respective studies. They found that self-efficacy is positively correlated with job resources and job satisfaction. Lyhne et al. investigated

how highly educated individuals, though depressed, can still function at work using the resources provided. This ability stemmed from their self-regulation skills as a direct result of their personality (Lyhne et al., 2021), fear of stigma (Corrigan & Watson, 2002), fear of missing out on promotion (Lyhne et al., 2021), education level (Hagen et al., 2006), or additional personal resources (Lyhne et al., 2021). Individuals with strong or confident personalities know how to make the most of what they have, and they do not want to be treated any differently or miss out on opportunities for advancement. Notwithstanding, individuals with strong-willed personalities might also suffer from stigma in the workplace, and the only way this might change is through social structures, that is, new policies in the workplace (Corrigan & Watson, 2002). When faced with stigma or being treated differently, individuals might look to the organization to create an inclusive environment (Caruth & Caruth, 2018), or they might be able to persevere based on self-leadership strategies.

Self-Leadership Skills and Strategies

Individuals who self-regulate might respond differently to their environment than the general populace. They use personal skills and strategies (resources) to manage job strain and demands (Bakker & de Vrie, 2020). They might do this by maintaining a strong-willed personality in adversity and developing self-leadership skills and strategies over time (Woods et al., 2022). A study by Steinbauer et al. (2018) with 101 employees from a communications equipment manufacturing company in the United States demonstrated that individuals self-regulate. They discovered that employees who possessed self-leadership skills could manage their work performance despite workplace

ostracism, unlike those with lower self-leadership skills (Steinbauer et al., 2018).

Although workplace ostracism and stigma have negatively impacted companies, they have been ongoing issues in companies for years without any formal address, implementation, or change. Individuals have developed strategies to deal with various challenges at work, including self-goal setting, self-reward, natural reward, and self-talk.

According to Mckillop et al. (2020), individuals' cognitive framework and a sense of what is important influence how resilient they are in the face of adversity, whether dealing with ostracism or enduring persistent back pain. In Mckillop et al.'s study, 15 individuals from Canadian pain centers were interviewed about working through pain. Some endured because they wanted to be a part of something fulfilling and have a purpose. Others wanted to have an impact and create a legacy. Others stayed because of the most basic need to be able to support themselves and maintain their lifestyle. Their self-regulatory actions and self-leadership skills allowed them to push through despite their current situation or feelings. These two strategies bear on their personality and emotional regulation, leading to their goal setting and performance. Their daily tasks also contribute to their motivation and performance. According to Foulk et al. (2019), an individual's motivation fluctuates daily, requiring constant accomplishment and striving for status, thereby leading to the topic of motivation factors. People act for a reason, whether it stems from internal or external rationality. Though McKillop et al.'s study did not address scoliosis-specific pain, the results provided some insights into the motivation of those in pain. In my research, I plan to address this limitation of McKillop et al. by

targeting females with scoliosis pain to understand their motivation and productivity at work.

Work Motivation

Motivation is the reason individuals act. Maslow's hierarchy of needs is one of the most discussed theories regarding work motivation. According to Maslow (1943), humans have five needs on a hierarchy to be met. Physiological needs are first, followed by security, belonging, esteem, and self-actualization. If individuals can meet their basic survival needs, they feel secure; then, they strive to forge relationships, gain status, and eventually realize their full potential (Maslow, 1943). Herzberg's (1959) two-factor theory is another well-recognized work motivation theory. Unlike Maslow's hierarchy of needs, the two-factor theory believes humans have two need categories: hygiene and motivators (Lindsay et al., 1967). Hygiene includes aspects such as an individual's working environment, circumstances, and remuneration, whereas motivators refer to recognition, bonuses, and praise (Lindsay et al., 1967). While Maslow believed that individuals gain true satisfaction and happiness after each step, Herzberg believed that people might not be happy at work due to the working conditions. Instead, he claimed that highlighting and praising them led to more motivation and productivity because they were happy. These two theories are integral in work motivation and have served as a foundation for subsequent theorists, including Ryan and Deci (2000b).

Motivating Factors

People are often driven by their desires, which shape their motivation. The reasons might be internal, known as intrinsic motivation, or external, known as extrinsic

motivation. Individuals might do something because they enjoy it (Deci & Ryan, 2008), get a reward (Deci & Ryan, 2008), are looking forward to a reward (Neck et al., 2020), or out of force (Neck et al., 2020). Regardless of the reason, before Ryan and Deci's SDT, motivation was viewed as a unitary concept, and more motivation equated to better results. SDT expanded on motivation by stating that individuals have different motivation levels and various types of motivation. These levels and types of motivation might fluctuate depending on the situational context.

Organizational commitment and remuneration were two relevant situational contexts of motivation identified in the literature. In line with the self-leadership theory, a study by Ullah et al. (2015) found that individuals with a proactive personality and those who perceive organizational support as prosocial motivation want to do more at work. They help others because they identify with the company and what they do (affective commitment). Organizations can capitalize on this by cultivating an environment that encourages collaboration instead of rivalry, promoting progress, and making all employees feel included (Dawson et al., 2023) and part of a family, thereby satisfying the relatedness need of Ryan and Deci's SDT.

The salary issue is another salient topic in motivation, albeit it has recently lost some of its impact as other factors come into play (Olafsen et al. 2015). The economic agency theory (Jensen & Meckling, 1976, as cited in Olafsen et al., 2015), which maintains that if employees are paid more, they will be motivated to act in a way that benefits the company more, was challenged by Olafsen et al. (2015). They argued that this theory does not consider intrinsic motivation, making SDT a more appropriate

framework when considering compensation and motivation. Olafsen et al. studied 166 bank employees in Norway and found that people were not as concerned with their salary compared to others, but with how this salary was calculated. The equity theory can also support this comparison, which states that individuals want to ensure everyone is paid what they deserve for their work (Neck et al., 2020). Employees who feel supported might feel justified at work (Olafsen et al., 2015), which fosters trust (Costa et al., 2018), and ultimately satisfies needs (Ryan & Deci, 2000a). Therefore, a relationship exists between salary and motivation after accounting for cultural differences and needs. Seminal literature has shown a strong positive relationship between need satisfaction and intrinsic work motivation (Ryan & Deci, 2000b). This correlation is constructed based on the idea that people perform better on the motivation continuum when their autonomy, relatedness, and competence needs are met.

Motivation Continuum and Self-Determination Theory

An individual's motivation might vary or fluctuate, given the nature of their action. Motivation is said to be on a continuum showing varying degrees (Wang & Demerin, 2023). The motivation continuum starts with amotivation and being nonregulated on the left, that is, having no interest or will to act, to intrinsic motivation and intrinsic regulation, where individuals act out of willingness, interest, and choice (Ryan & Deci, 2000a). If individuals enjoy what they do, they will perform accordingly, even without incentives (Cerasoli, 2014). Extrinsic motivation is at the center, including external regulation, introjected regulation, identified regulation, and integrated regulation (Ryan & Deci, 2000). Extrinsic motivation is the branch that refers to motivation from

autonomy. It includes external regulation, which has to do with external rewards and punishment (Ryan & Deci, 2000a). Introjected regulation follows, which focuses on external rewards or outcomes but with some self-regulation (Ryan & Deci, 2000a). Identified regulation is the third style, and though it still focuses on external rewards, it involves thinking conscientiously and focusing on what individuals value (Ryan & Deci, 2000a). Finally, integrated regulation is more immersed in the self and awareness (Ryan & Deci, 2000a). Still, both rely on the external environment or situational context for guidance on how to act.

SDT has several subtheories, one of which is the cognitive evaluation theory (CET). This theory lists an individual's environment as the main factor behind facilitating or inhibiting motivation (Ryan & Deci, 2000a). In its infancy, CET focused on two tenets: competence, meaning individuals have the capability to fulfil their job role, and autonomy, denoting that individuals have the belief and freedom to use their initiative to make decisions. Later, relatedness was added and showed that students who felt more supported or connected to their parents exhibited more intrinsic motivation.

A key factor in motivation is self-leadership. Jensen and Bro (2018) affirmed this in their study, where they found that transformational leadership in companies contributes to higher autonomy, relatedness, and competence, increasing work motivation. Vo et al. (2022) also found that autonomy and social relatedness positively correlated with work motivation. Individuals who feel they have more control over their work and that they are a part of the community are more confident, supporting previous studies (Deci & Ryan, 2008) and following the tenets of SDT (Deci & Ryan, 2000). Competence was moderated

by factors such as culture, religion, and political affiliation (Vo et al., 2022). Individuals in a collective country like China might rate competence less than those from individualistic countries like the United States (Lomas et al., 2022). These assertions are congruent with other studies, which show that social circumstances should be considered in people's motivation (Grant & Shandell., 2022; Trigueros et al., 2019; Vo et al., 2022).

Central to the entire discipline of a theory is its validation. Van den Broeck et al. (2010) validated the SDT theory through a Work-Related Basic Need Satisfaction Scale (W_BNS) by sampling 1185 participants and collecting samples to test the psychometric properties of the 21-item scale covering need frustration and satisfaction. The results were consistent for SDT and showed autonomy, relatedness, and competence as related yet different constructs. Aligned with Vo et al., this research also highlighted the need to consider employees' environment as a contributor to their need's satisfaction. The proposed study will address the concerns of Vo et al. by delving into female workers' work environments and how they contribute to their motivation and productivity.

Pain as a Concept

Pain as a concept might be divided into different categories based on its source, duration, and other factors. This proposed study delves further into the concept of chronic pain, defined as long-term and frequently associated with a health condition involving the spine, arthritis, or other illnesses. In the United States, approximately 20.9% of adults experience chronic pain (Rikard et al., 2023). Chronic pain might range from mild to severe and may persist for 3 months or more (Raffaele et al., 2021). Various factors such as genetics, socioeconomic background, and lifestyle might influence this pain. It is an

illness that, if not addressed, might progress. Mills et al. (2019) conducted a narrative review using databases such as Medline, Embase, Cochrane Central Register of Controlled Trials, Pubmed, Cochrane Database of Systematic Reviews, and Web of Science. They found that gender, employment status, occupational factors, physical activity, and diet all played a role in the progression or prevention of chronic pain (Mills et al., 2019). Their study also revealed that a patient's attitude influences their rehabilitation process. A patient who is resigned to rest with a passive attitude might experience more pain as opposed to one who is more adaptive and active (Mills et al., 2019). This revelation leads to the discussion that there is a correlation between pain and motivation worth looking into further (Mills et al., 2019; Porreca & Navratilova, 2017). In the scope of this research, I aim to understand scoliosis pain specifically and motivation.

Pain and Motivation

Individuals might decide to persist with a task depending on the incentives. In a study by Vogel et al. (2022), participants were asked to record whether they were in pain. The participants were then distracted by a memory task and promised more money if the researchers could intensify the heat sensors in the room, which caused more pain. The participants agreed to be inflicted with more pain from the increased heat in the rooms, revealing that they were motivated by the monetary incentives. The results showed that 95% of the participants said yes to more pain if it equaled more money. It also indicated that if individuals are mentally stimulated, this can distract them from physical pain, contingent upon the individual's intrinsic motivation. This revelation suggests that there

are ways to be productive while in pain, and it is the organization's responsibility to figure out those means and provide the necessary accommodations for JDR.

The concept of pain and what it means takes place in the brain from pain receptors. An earlier study by Navratilova and Porecca (2014) explained the phenomenon of pain, which is vital to understanding individuals' pain experiences. Based on their research, individuals might shy away or learn from pain due to their mesocorticolimbic circuitry, which causes impulses and motivation (Navratilova & Porecca, 2014). The mesocorticolimbic circuitry is one of the brain's dopamine pathways. It affects motivation, emotional reactions, and cognitive control (Reynolds & Flores, 2021). Albeit, even in learning from pain or trying to avoid it, there are some instances where pain cannot be explained, or pain occurs due to diseases (Navratilova & Porecca, 2014). In the case of this proposed study, the disease is scoliosis. Numerous research studies have shown that pain has a comorbid effect that leads to other issues, such as anxiety, anger, and depression (Marshall et al., 2017; Martinez-Calderon, 2019; Reynolds & Flores, 2021; Tanaka et al., 2022). These individuals require support, as previous research has shown that low organizational support harms workers and their productivity. Eriksen et al. (2004), who studied nursing personnel in Norway, established that little organizational support, low social support, and perceived lack of support from superiors increased lower back pain. This contradicts findings from earlier work in Sweden, which found no association between social support and lower back pain (Ahlberg-Hulten et al., 1995). Together, these studies suggest that further research is needed to explore employees' nuanced perspectives and needs.

Compared to individuals without pain, individuals with pain missed more days at work, and when they did show up, they perceived that they received less supervisor support and less reward for their efforts (Adams & Salomons, 2021). This perception led to employees in pain feeling stigmatized and ostracized in the workplace. Highlighting these issues shows that there is a need for interventions promoting inclusivity for all individuals by providing accommodation for those in pain (Adams & Salomons, 2021). The authors cautioned that if not addressed, this might lead to greater disparity in the workplace. This paper will explore females working with scoliosis pain to understand their motivation and productivity.

Musculoskeletal Disorders and Their Impact

According to the Centers for Disease Control and Prevention (CDC, 2024), musculoskeletal disorders are “injuries or disorders of the muscles, nerves, tendons, joints, cartilage, and spinal discs” (p. 2). There are also work-related musculoskeletal disorders (WKMSD) in which a condition may worsen due to the work environment. Musculoskeletal disorders include sprains, strains, hernias, carpal tunnel syndrome, arthritis, back pain, and scoliosis (CDC, 2024).

These diseases are also some of the common causes of chronic pain, which is included under chronic diseases. Silvaggi et al. (2019) found that member states of the European Union created what they called a toolbox for managing and implementing inclusive policies for workers with chronic diseases. This toolbox included training materials for managers to help them better support employees with chronic illnesses. The researchers used information from 45 interviews organized in a literature review and the

results highlighted that individuals with chronic diseases need support to be included in the workforce (Silvaggi et al., 2019). The literature revealed that some factors identified as barriers to work participation of employees with chronic health problems are lack of motivation, lack of knowledge (whether about health issues and the risks they might face), and lack of communication (Silvaggi et al., 2019). This toolbox aims to approach inclusiveness and support from a comprehensive stance, including all systems and processes in the company.

The example of the toolbox in Europe shows one of the implications of chronic diseases, such as musculoskeletal diseases. Musculoskeletal diseases and associated chronic pain could also have an impact on absenteeism, presenteeism, job satisfaction, and productivity. Regarding productivity, individuals might be at work and unable to perform their work tasks to their maximum potential, affecting their work quality. Furthermore, chronic pain can lower job satisfaction through frustration and emotional strain. These effects all impact the individual and, by extension, the company.

Chronic Pain Related to Scoliosis

Mills et al. (2019) define chronic pain as prolonged and continuing pain often due to a health condition. This pain might range from mild to severe and may persist for 3 months or more (Raffaele et al., 2021). Chronic pain might manifest in various types such as neuropathic pain, nociceptive pain, inflammatory pain, psychogenic pain, mechanical pain, and musculoskeletal pain. For this study, musculoskeletal pain from scoliosis is the focus. However, chronic musculoskeletal pain rarely resides on its own and often has psychological side effects due to being physically challenged, which might affect other

areas of life such as work (El-Tallawy et al., 2021). In the United States, millions of individuals experience chronic pain, and in 2019, 39 % of the adult population experienced chronic back pain (CDC, 2021). One type of chronic pain is scoliosis, and approximately 2-3% of the population in the United States has scoliosis (Yale Medicine, 2024).

Scoliosis is a degenerative disease of the spine curved sideways and is often associated with chronic pain (Mayo Clinic, 2024). It may stem from the increased pressure on the nerve and spinal joints or due to muscle imbalance (Stitzel, 2024). The pain from scoliosis might differ between individuals and might manifest itself in stiffness in the back, back pain, shoulder blade pain, and muscle weakness (Penn Medicine, n.d.). The treatment for scoliosis in adults includes surgery, bracing, painkillers, exercise, and engaging in activities that do not worsen the condition (Mohammed et al., 2024). Conversely, some studies caution against the former two, especially surgery. Scoliosis surgery, such as long-segment fusion, is risky and might result in further damage (Kelly, 2022). Consequently, it is recommended that individuals focus on exercise and being proactive in their daily lives through proper posture and ergonomics (Mohammed et al., 2024). An individual at work experiencing scoliosis pain might have difficulties completing tasks due to their physical limitations. Additionally, being sedentary or repeating motions might strain the spine or cause an increased risk of spinal compression (Nakashima, 2021).

Much of the research relating to scoliosis pain lies in the health sciences field and focuses mostly on adolescents. In a systematic review of adults diagnosed with scoliosis,

Zaina et al (2023) found that scoliosis caused increased back pain and that the intensity of the pain depended on the type of scoliosis. Zaina et al reviewed 25 papers and included 8 in their study, but of these papers, none examined participants working with scoliosis pain nor the biopsychosocial elements of living with the disease.

Due to the curvature of the spine and the pressure on the discs, nerves, and muscles, scoliosis reduces mobility and flexibility (Yetis et al., 2024). Both the pressure on the spine and the reduction in mobility are sources of pain for those diagnosed with scoliosis (Iharreborde et al., 2013). Much controversy surrounds the topic in terms of detection, pain isolation, and treatment, and highlights the need for further research (Bissolotti et al., 2013; Cheung et al., 2020; Iharreborde et al., 2023; Mohamed et al., 2020). Current research ranges from the effectiveness of non-surgical interventions, such as scoliosis-specific exercises (Thompson et al., 2018; Xu et al., 2024), to biofeedback posture training (Cheung et al., 2022). Other researchers have examined the mental toll it takes on parents with children diagnosed with scoliosis (Wilson et al., 2021), the psychological side effects on adolescents with scoliosis (Misterska et al., 2022), and the stress level of adolescents due to surgery and brace treatment (Pezham et al., 2022). Still, to date, there is very little research on the psychological effects of this pain in adults diagnosed with scoliosis in the workplace, and as admitted by Zaina et al; more research is needed. The literature has suggested that an individual's health deteriorates with a scoliosis diagnosis, and their quality of life is affected by pain. This might be evidenced at work through absenteeism, different levels of job satisfaction, and productivity levels.

Absenteeism

Absenteeism might impact a company in many ways, such as disrupting workflow, lowering productivity, and lowering morale (Brouwer et al., 2023). An individual might be absent for different reasons, but one prevalent reason is an illness, leading to sick days. Osteoarthritis and diseases like scoliosis continue to afflict the healthcare system and contribute to a comorbidity of issues as the number of individuals with musculoskeletal symptoms and complaints increases (Leifer et al., 2022; Wilkie et al., 2015). These diseases might lead to lifestyle adjustments regarding physical movements and emotional stress from the pain (Wilkie et al., 2015). Though osteoarthritis occurs in those over 50, the pain and lifestyle adjustments experienced by younger individuals with scoliosis pain can be comparable. Individuals might show up at work in pain because they do not want to be absent (Wilkie et al., 2015). The pain might result in them being physically incapable of functioning normally due to the indirect effects on their cognition and emotion (Tanaka et al., 2022).

On the other hand, some people might be interoceptive and be able to combat this through self-regulation and mindfulness. They feel the pain but do not allow it to distract them or detract from their task. Alternately, in line with studies from the United Kingdom and the United States (Lacey et al., 2013; Shmagel et al., 2010), a study carried out in Sweden showed that blue-collar workers with back pain had a higher number of sick days and disability pension (Gedin et al., 2020). These studies also agreed with previous research that found a link between lower back pain and a rise in sick leaves (Muller et al., 1999; Smedley et al., 1997; Van Poppel et al., 1998).

A Greek study considered sick leave from the angle of returning to work (Alexopoulos et al., 2008). In examining ship workers, Alexopoulos et al. administered questionnaires concerning general health, health complaints, the need for recovery, and musculoskeletal pain to understand risk factors due to lower back pain and how these issues affect their return to work after being absent. These findings indicated that lower back pain was the highest cause of absenteeism for the workers. Alexopoulos et al. concluded that organizations might pay more attention to when workers return to work. Bosman et al. (2019) suggested a goal of predicting these sick leaves. Though the study found that employees took sick leave due to musculoskeletal complaints, there was no suggestion to predict the days individuals might use to get sick. The limitation of Bosman et al. further supports the recommendation made by Alexopoulos et al. that instead of focusing on workers' sick leaves, organizations should focus on supporting and managing them when they return to prevent a recurrence. More specifically, in Japan, Tanaka et al. (2022) reported an increase in presenteeism compared to absenteeism. This proposed study might provide further understanding of the phenomenon and how companies might address this.

Numerous studies relating to lower back pain has focused on physically demanding jobs, such as those of industrial workers, welders, carpenters, factory workers, and mechanics, and those that might include repetition or heavy lifting (Alexopoulos et al., 2008; Charizani et al., 2005; Hoogendoorn et al., 2002). However, the literature is sparse on those in sedentary positions, so I endeavor to gain insights into this specific work group structure.

Job Satisfaction

An individual's job satisfaction level may be influenced by multiple factors. These could include the work environment, remuneration, job demands, and workload. Workers in physically demanding jobs might experience increased musculoskeletal symptoms leading to absenteeism, stress, and poor health (Hoogendoorn et al., 2002). In their study, Hoogendoorn et al. discovered that individuals with increased workload and low job satisfaction faced exacerbated risks for musculoskeletal diseases and required sick leave. They discovered a link between low social support and absences (Hoogendorn et al., 2002). Individuals who are not satisfied at work might be less engaged or committed. While workers may want social support, they also seek autonomy support, and Baard et al. (2004) found that individuals who feel autonomously supported are more satisfied than those who do not. Workers who believe they have the authority to make job-related decisions with the approval of their superiors report greater job satisfaction and enthusiasm for work. Petrou and Bakker (2016) proposed the concept of leisure crafting, which allows individuals to use their autonomy to create their ideal workday. In leisure crafting, individuals would have enough time to achieve their work goals, spend time with their colleagues, participate in development activities, and pay attention to their overall health and well-being (Petrou & Bakker, 2016). Leisure crafting seems almost idealistic, but it aligns with the fundamental tenets of Ryan and Deci's SDT. First, if workers are adequately trained to complete their tasks, they satisfy their competence needs. Second, if they can make decisions at work based on the trust their superior places in them, they satisfy their autonomy need. Third, if they can build relationships with

those around them, the work environment will be more pleasurable, satisfying the relatedness need. A study called it “dimensional perfectionism” (Kleszewski & Otto, 2023, p. 1). Satisfied employees are more likely to perform well and are more productive.

Productivity

If individuals genuinely enjoy what they do, they might be inclined to do it more efficiently. Similarly, if individuals are in an inspiring and comfortable environment, they tend to be more productive. According to numerous studies (Wilkie et al., 2015; Vogel et al., 2022; Vo et al., 2022), satisfied employees are more productive. On the other hand, individuals who push through the pain and show up to work rather than taking sick leave might not be able to perform the same as if they were injury-free. The productivity of hybrid or remote workers might also be affected. In Oakman et al. (2020) rapid review, a search of research from 2007–2020 in PsycINFO, ProQuest, and Web of Science yielded 23 papers that reviewed different outcomes on individuals’ health when they work from home. The outcomes reported were “pain, self-reported health, safety, well-being, stress, depression, fatigue, quality of life, strain, and happiness” (Oakman et al., 2020, p. 7). This suggests that an individual’s environment may play a role in their productivity and quality of work, either positively or negatively.

An employee’s productivity is an essential element of their overall performance. Though productivity and workers with chronic illnesses were excluded from Oakman’s review, they were included in Heidari Moghadam et al.’s (2020) study, which sought to understand the effects of work-related musculoskeletal disorders, quality of work-life, and productivity among office workers. Their study included a control trial of

management training, ergonomic training, and work change intervention (Heidarimoghadaan et al., 2020). The outcomes were measured after 1, 3, and 6 months, with results showing that most individuals had work-related musculoskeletal disease (WKMSD) pain in their neck, right shoulder, and forearm (Heidarimoghadaan et al., 2020). Although productivity was an important outcome, it was not given as much attention as other ergonomic principles. The authors admitted that a limitation of their study was the wide range of variables. This limitation leaves a gap that the proposed study will address as I focus on understanding the outcomes of pain and productivity.

Mental stimulation is another factor to consider when assessing productivity. Wollter-Bergman et al. (2021) wanted to understand the perception of industrial assembly workers and how they think the work conditions influence their cognitive performance and well-being. They found that workers who are not mentally stimulated and challenged might cause issues and delays on the job, and conversely, if they are too stimulated, they might also cause issues and delays (Wollter-Bergman et al., 2021). If workers are preoccupied with stress about their physical condition, it might distract them from their tasks. Furthermore, repetitive, unchallenging, and mundane jobs might also lead to accidents caused by daydreaming or musculoskeletal symptoms from the repetitive nature, which might lead to a loss in productivity. An earlier study by Schwartz et al. (2017) sought to understand if alternating postures would affect workers' cognitive performance at work. They alternated between sitting and standing at the workstation. Unlike Wollter-Bergman et al. the participants in the study by Schwartz et al. were students rather than actual workers, which compromised their study owing to voluntary

bias. Additionally, they wanted to understand cognitive performance in an office setting, whereas Wollter-Bergman et al. targeted assembly workers. Nonetheless, both studies found that repetitive tasks might cause mental fatigue, which can lead to decreased productivity. My current study will follow the qualitative methodology like Wolter-Bergman et al., but my participants will be female workers in office settings who sit for 4 hours or more and will focus on how their physical pain from scoliosis influences their motivation and productivity.

Understanding the correlation between pain and employees' ability to complete tasks is crucial. Organizations must note the relationship between pain, motivation, and productivity. It is important to determine what strategies can be implemented to facilitate motivation rather than inhibiting it, and how motivators, stressors, and/or barriers can be identified and solved.

Interventions to Combat Pain

The literature review revealed that an individual's personality and emotion might influence their motivation and productivity. It is also noted that individuals need various resources and motivators to be satisfied at work, which leads to productivity. Individuals are in pain; pain they may choose to endure and show up at work, or pain that might result in their absence, leading to a decrease in productivity. To intervene means to change the direction or result, typically a process condition (Loss, 2008). This intervention is usually to prevent harm or further harm. In the case of this study, knowing that individuals are in pain and possibly losing motivation and productivity while at work calls for an intervention.

Benefits of Interventions

Interventions might yield many benefits for organizations. A meta-analysis by Conn et al. (2009) showed that workplace interventions can improve physical health while delivering other benefits to both the individual and the organization. The data demonstrated a decrease in absenteeism, which can be ascribed to increased job satisfaction and well-being. It is impossible to ascertain the exact financial benefit to the companies, but any fiscal benefit, no matter how modest, is an improvement. The authors cautioned that though this meta-analysis was more comprehensive than those in previous years, it would be noteworthy to address the intervention's impact on outcomes such as productivity, which is the aim of this current study.

One such intervention that continues to gain popularity is chair-based interventions. Chair-based interventions are exercises done seated in a chair such as chest openers, arm curls, shoulder raises, seated rows, hip flexors, and knee extensions (Efendi et al., 2022; Kleiner et al., 2023). Many workers remained immobile during the pandemic while working from home, necessitating inventive workspace adjustments. Van Niekerk et al. (2012) had already conducted an earlier analysis to determine the efficacy of chair-based interventions. Chair-based interventions are popular and reasonably simple for businesses to implement because they do not involve reorganizing an entire workstation. Even so, only one study from the synthesis examined productivity outcomes and found no effect (Van Niekerk et al., 2012). This suggests that future studies could address the gap of productivity as an outcome of chronic pain.

Participatory Interventions

Organizations should consider a holistic approach to participatory programs (Punnett et al., 2009). This approach entails considering the work environment, the workers themselves, and macroenvironment factors such as lifestyle outside of work (Punnett et al., 2009). For example, how workers spend their off time to decompress can significantly affect their well-being (Petrou & Bakker, 2016). According to Petrou and Bakker (2016), those who are pressured or stressed from work may consume more alcohol or tobacco. Similarly, if they are in pain from work, they might join the gym or do specialized exercises to alleviate this (Punnett et al., 2009). Because pain affects workers' productivity, it should be a natural proclivity that they be included in designing and implementing workspaces and interventions at work. Oakman and Chan (2015) reported similar sentiments by opining that risk controls should be participatory. Van Eerd et al. (2015) echoed that organizations should include workers and experts, such as healthcare practitioners, when implementing intervention programs at work. They also suggested the importance of resistance training (Van Eerd et al., 2015), which was later supported by Proper and Van Oostrom (2019). In contrast, Andersen et al. (2013) cautioned against resistance training, which includes pushing or pulling against resistance (Mayo Clinic, 2023), and suggested strength training as a better alternative, which involves gradually increasing the amount that an individual lifts to strengthen and improve muscles (Mayo Clinic, 2023). In a study of 47 office workers in Denmark with chronic nonspecific pain in the neck/shoulder region, Andersen et al. found strength training beneficial. The participants strength trained for 20 minutes three times weekly

for 10 weeks. The results emphasized how beneficial an intervention program at work would be, as the participants reported a reduction in chronic pain in the neck and shoulder region in adults after the strength training.

Irrespective of the method chosen for interventions, the participants must be involved. Oakman and Chan (2015) reported different levels of physical discomfort, job satisfaction, and work-life balance according to the participants' job descriptions. The findings underscore the inadequacy of a generic plan and the necessity for targeted risk management studies at the individual job level. This notion also aligns with Van Eerd et al.'s (2015) study, which stated that interventions should include the participants and not be a decision made at the organizational level. Interventions should include both workers and health professionals due to the risks involved.

Years later, Lopez-Garcia et al.'s (2019) study of 8892 workers in Spain highlighted a need for these risk controls as workers were getting into workplace accidents. Some of these accidents occurred due to physical effort and workload (Lopez-Garcia et al., 2019). Further results showed these accidents result in musculoskeletal injuries, which produced a compound effect leading to increased absences at work. Still on the continent but in a different country, the study by Gedin et al. (2020) backed up Lopez-Garcia et al.'s claim. In North America, namely the United States, the Occupational Safety and Health Administration (OSHA) process to protect workers remains pertinent. OSHA supports participatory intervention, managerial support, training, and quality management to check progress (OSHA., n.d.). However, even with the proper measurements, Punnett and Wegman (2004), argued that workers might slouch

or engage in other counterproductive actions due to ergonomic practices. Both parties must want change for the process to succeed.

Ergonomic Interventions

Extensive research and reviewers have shown a link between ergonomics and musculoskeletal diseases (Choobineh et al., 2011; Larinier et al., 2020; Oakman & Chan, 2015; Proper & Van Oostrom, 2019; Safarian et al., 2018). Workers who spend extensive periods sitting around the computer and using a keyboard and mouse might experience muscle tension in areas such as the neck, shoulder, and upper and lower back (Andersen et al., 2013; Daneshmandi et al., 2017; Kett et al., 2021).

In one study, Mahmud et al. (2010) studied workers at a university in Malaysia who used computers extensively. They wanted to see the effects of ergonomics training versus no training. The training included a workshop on office ergonomics and how it contributed to MSDs without proper attention. It first focused on explaining interventions such as adjustments to workstations and exercises. Then, actions that included one-on-one training where individual workstations were adjusted. Those without training only received an informational leaflet on ergonomics. Postintervention results for both groups showed improvements in workstation habits regarding monitor, keyboard, and mouse use. However, there were significant improvements for the training group, with a reduction in the percentage of MSD complaints and improved workplace posture (Mahmud et al., 2010). Sharifi et al. (2021) later did a similar study in Iran due to the lack of research on interventions in call centers. Their study included ergonomic training, workstation redesign, one-on-one adjustments, breaks, and exercise. The results showed

significant improvement in the workers' physical health as their musculoskeletal symptoms decreased. Sharifi et al. also noted that the workers' energy levels increased, and mental fatigue decreased, which indicates that interventions not only present physical benefits but also psychological. The current body of literature has suggested how integral proper ergonomics are to the physical and psychological health and well-being of employees in the workplace. It also suggests that further investigation is needed into other outcomes such as motivation and productivity.

Education plays a crucial role in ergonomic interventions as well. Mody and Brooks (2012) cited education as one of the factors leading to musculoskeletal diseases; that is, individuals are unaware of the dangers of slouching or sitting for long periods. They need to be educated on the importance of ergonomics to their well-being and how to prevent and manage musculoskeletal diseases. Safarian et al. (2018) later conducted a study that supported Mody and Brooks's position on the importance of education intervention. However, they expanded to include other interventions, such as ergonomic and organizational interventions. According to their quasi-experimental study of 221 employees, workers who were educated about interventions and those who received ergonomic interventions had lower risk factors of MSDs and discomfort than those without the knowledge and intervention. Furthermore, the study revealed that a single intervention might not be the best solution, but there is a need for a more comprehensive approach. While Safarian et al. addressed some gaps left by Mody and Brooks, they failed to consider psychosocial factors, which my current study will address.

A later study in Iran by Mohammadipour et al. (2018) also revealed that ergonomics workshops were needed to make employees aware of the different risk factors that play a role in their health at work, yet cautioned that workshops without workplace redesign would prove futile. In their study of office workers in Iran, they used the Nordic Musculoskeletal Questionnaire (NMQ), the rapid upper limb assessment (RULA), and the rapid office strain assessment (ROSA) method to identify the workers' musculoskeletal issues and observe the current ergonomics. The results of Mohammadipour et al.'s research showed a high level of MSDs and ergonomic risks.

The RULA and ROSA methods are useful in assessing risk levels in organizations and gauging whether workers have any history or current MSDS in their wrists, hands, elbows, neck, shoulders, upper and lower back, hips, and feet (De Barros et al., 2022; Ruennusan, 2023). Organizations can use the data derived from these methods to create ergonomic strategies specific to their business design, function, and budget. Shin and Park (2017) attempted a similar redesign by exploring how using 3-D modeling tools could help reduce work-related musculoskeletal disorders. The workplace was modified before and after using this model, and the results showed that engineering and administrative measures could prevent or reduce WMSD symptoms. These measures helped to reduce the ergonomic risks to the company.

The literature revealed that interventions, when properly executed, benefit companies (Conn et al., 2009; Van Niekerk et al., 2012). It has also shown that involving employees and redesigning workspaces poses some benefits (Oakman & Chan, 2015; Shin & Park, 2017; Van Eerd et al., 2015). However, there is still a deficit in the literature

that explores these interventions and their influence on motivation and productivity. In this proposed study, I will seek to address that.

Summary and Conclusions

The literature has highlighted a paucity of research exploring individuals with scoliosis and their motivation and productivity at work. It has revealed that individuals are motivated by different factors, whether intrinsic and/or extrinsic. It has also revealed that individuals with musculoskeletal diseases might be affected more than those who are otherwise functioning with optimum health. It has been shown that musculoskeletal diseases might affect workers' productivity and motivation. Previous studies on musculoskeletal disorders, productivity, and motivation have been done in Asian countries such as Iran, Malaysia, and Japan, and in North American countries such as Canada, the United States, and some European countries. However, to date, the literature reveals a gap in China. My IPA aims to address that gap by exploring female workers in China who with scoliosis pain and their motivation and productivity at work.

Chapter 3 addresses the methodology for this proposed study. It begins with the introduction, research design, and role of the researcher in the study. Then it addresses the methodology, which includes the participant selection logic, procedures for recruitment, participation, data collection, instrumentation, and data analysis plan. It also addresses issues of trustworthiness, ethical procedures, other risks, and treatment of data.

Chapter 3: Research Method

The research problem identified was that individuals with scoliosis might experience physical challenges when working, and it is important to understand the impact on their motivation and productivity. Scoliosis is a chronic musculoskeletal disease often associated with adolescents and discussed in the health sciences (Cheung et al., 2022; Choi et al., 2019; Misterska et al., 2011; Pezham, 2022). Recent research emphasized scoliosis in children and adolescents, but it is a public health concern for adults and their quality of life, productivity, and motivation at work (Anwer et al., 2015; Schmid et al., 2020; Zaina et al., 2023). A scoliosis diagnosis can impact an individual's work performance, namely productivity and motivation, particularly if there is a lack of proper ergonomics or workplace accommodations, which might lead to increased pain and discomfort (Ahmed et al., 2022; Black & St-Onge, 2022; El Kadri Filho & Lucca, 2022). This discovery led to the need to understand this phenomenon further by exploring the perspectives of women working with scoliosis pain and their motivation and productivity, to extend the research findings and provide contextually grounded insights. The purpose of this qualitative IPA was to explore the lived experience of female employees in China with scoliosis pain and its impact on their motivation and productivity. This chapter includes the research tradition and rationale, my role as the researcher, methodology, recruitment procedures, participation, and data collection. This chapter also includes the data analysis plan, issues of trustworthiness, and ethical procedures, and ends with a summary.

Research Design and Rationale

RQ1: How do female employees with scoliosis pain describe their motivation when working?

RQ2: How do female employees with scoliosis pain describe their productivity when working?

This study followed qualitative methodology, and the research design chosen to accompany this was IPA. Qualitative methodology was appropriate because it is used to gather thoughts, feelings, and emotions that might otherwise not be detected (see Bazen et al., 2021). Furthermore, qualitative research provides an explanation for and an exploration of a topic. The ideal tradition for exploring the current research topic in depth was IPA. Developed by Smith et al. in 2012, IPA has been used to uncover an individual's subjective experiences. Often used in areas of psychology, sociology, and health sciences, the goal of IPA is to explore an individual's experience and their interpretation of it, which is what I sought to do. The rationale for choosing IPA was that I was able to explore how individuals cope with chronic pain at work and their productivity and motivation. Smith and Osborn (2015) lauded the use of IPA in pain research by citing it as being interpretative based on individuals making sense of the phenomenon. I explored how participants' scoliosis pain altered work as they knew it and what resources their organization was or was not providing to help them succeed. The study addressed the nuances and the details of each experience, how people perceived those experiences, and how they impacted their lives. This exploration was done through

one-on-one interviews, which allowed participants to describe their experiences in depth to provide greater details about their stories.

Role of the Researcher

The role of the qualitative researcher was as an explorer, data collector, observer, and analyst. The researcher explored the phenomenon by gathering data from books and articles. In qualitative research, the researcher is the primary data collection instrument. I followed a self-developed semistructured interview guide to ask the participants the questions and record their answers. Specifically, the researcher's goal in IPA is to explore the phenomenon as deeply as possible and analyze it through careful interpretation. Smith and Nizza (2022) dubbed it a "double hermeneutic" because, as the researcher, I will have to make meaning of how the participants make meaning. The researcher was also an observer by looking for what was unsaid during the encounters with the participants. I was mindful of my biases by practicing bracketing and intentionally setting them aside while observing and analyzing the data. I also practiced ongoing reflexivity to maintain transparency.

The researcher had no personal or professional affiliations with the participants. Participants were recruited voluntarily through a popular application called WeChat in China. WeChat is a combination of Facebook, WhatsApp, and Instagram in one application. WeChat allows individuals to create different groups based on interests. I shared my flyer with health groups, and interested participants reached out. When the goal for the number of participants was not met, I shared the recruitment flyer in other groups to recruit interested participants.

Personal biases were managed by strictly following the interview guide developed under the Committee's supervision. This ensured that I avoided leading questions or closed-ended questions. I also used a clear, leveled voice to ask questions. I practiced active listening and did not just listen to respond to reduce bias and improve the trustworthiness of this study. Maintaining records was another strategy; I had a notebook with field notes, interview recordings, and transcripts. These records helped me to pore through the data with a critical eye from multiple angles while coding. Finally, I also practiced bracketing through writing analytical memos as a way of brain dumping during the research process to help me reflect on the process and take stock of my own experiences and feelings so that I did not include them in my write-up (Tufford & Newman, 2010).

Methodology

In this section, I discuss participant selection, the criteria they met, and how they were recruited. This study aimed to explore and understand the productivity and motivation of female employees working with scoliosis pain using the interpretive phenomenological analysis paradigm.

Participant Selection Logic

The participants who made up the population for this study must identify as females between 25–45 years old. However, due to difficulties with recruiting and the age of the participants who expressed interest in the study, this was modified to ages 22–60. This modification was approved by the Institutional Review Board (Walden University IRB approval no. is 07-02-25-1162725). Participants had been experiencing

scoliosis pain and were employed or had been employed in a job where they sat for more than 4 hours per day. These participants lived in China and were fluent in English. Participants diagnosed with other health issues that caused pain were excluded. Prospective participants responded to a self-designed flyer (Appendix A), with a brief description of the study, which was circulated in groups on WeChat, a well-known social media platform in China, indicating their interest. Participants scanned the QR code on the flyer, which directed them to send me an email indicating their interest and confirming that they met the criteria advertised on the flyer. I then sent them the consent form, explaining the fundamentals of the study procedure and what it entailed. However, I did not start collecting data until after they responded to the email with “I consent”. Once they responded with “I consent”, I then sent them an email to accept their participation and confirm that they met the demographics of the study.

The individuals who met the inclusion criteria were known as the sample, which is a segment of the population that meets the study’s requirements. The sample followed voluntary and purposeful sampling. Purposeful sampling was used because the individuals must meet the criteria to qualify for the study and share their experiences. It was chosen to ensure that, though the research targeted individuals who fit the inclusion criteria, they were not coerced into participating and did so of their own accord.

The sample size was made up of 8–10 individuals (Smith & Nizza, 2022). Various studies suggested a qualitative sample size ranging from 5–350 (Mason, 2010). Specifically for IPA, which requires in-depth analysis, 8 is a good number (Smith & Nizza, 2022). For this study and the nature of the topic, 8–10 is an appropriate range

because, as opined by Smith et al. (2012), IPA can be time-consuming due to the complexity and nuances of the data. This study aimed not to make general inferences about society but to have a more in-depth understanding of the experiences of employed females living in China with scoliosis pain.

Instrumentation

The research instrument was researcher-developed through years of study and research on interview techniques. I created an interview protocol (Appendix B), including an introduction, icebreaker, interview questions, and a conclusion.

When drafting the interview questions, I first read the article on the Writing Interview Protocols, where Jacob and Ferguson (2012) discussed allowing the research questions to guide inquiry. First, I rewrote my research question and then considered questions that could be broadened. Following this, I then noted my phenomenon of interest as recommended by the Interview Guide Worksheet. I then made a mind map with scoliosis at the center. Followed by listing my theoretical frameworks of the job demands-resources model and self-determination theory, as well as what I wanted to learn about them. Finally, I considered my approach of using IPA. Patton (2015) spoke about the different question options, and given the nature of my topic, experience, and behavior, opinions, feelings, sensory information, and background questions are my focus. IPA has gained increasing popularity over the years in pain research and continues to be used in numerous studies where an in-depth understanding is needed. IPA is interpretive and perspective-based and aims to tell a rich and meaningful story, making it the perfect guide while creating my instrumentation.

The development of these questions also helped to ensure trustworthiness and credibility. The questions asked were directly tied to the research problem and research question. Additionally, they measured and asked what they should, ensuring credibility and showing their validity.

The existing literature and the mind map I created allowed me to compile 12 questions surrounding the topics of emotions and personality, intrinsic and extrinsic motivation, productivity, work-related musculoskeletal diseases, resources, and organizational support. These were sufficient to collect information based on the research questions, as they included all the key topics related to the phenomenon. I was able to brainstorm and ‘brain dump’ the relevant keywords. This process helped to prove their sufficiency and establish trustworthiness.

Procedures for Recruitment, Participation, and Data Collection

Data was collected from females employed or who had been employed and living in China and experiencing scoliosis pain through purposeful non-probability sampling. Participants were contacted in health groups on a popular social media application called WeChat in China. I posted the flyer (Appendix A) and a message describing the study. Interested individuals scanned the QR code to access my contact information, where I then sent them the Walden University IRB consent form. After receiving their responses, I confirmed their consent and ensured they met the demographic criteria on the flyer.

After receiving the responses, eight individuals were selected to participate in the study. I recruited 11 participants but one failed to provide consent, and the interview of the other was stopped mid-way because though she had scoliosis, she was not

experiencing any pain. I also offered a \$10 Starbucks e-gift card to each participant who volunteered their time and completed the interview.

Once participants were selected, I contacted each participant individually via email to schedule a suitable time for the one-on-one interviews. Interviews were conducted using the convenient Zoom software, as participants lived all over China and were also traveling. The recruitment and data collection process took approximately 6-8 weeks. I conducted and recorded interviews via Zoom. Zoom was also used to transcribe the recordings. I also wrote field notes to record my observations of participants' responses, such as delays, pauses, or interjections, immediately after the interview.

Interviews lasted between 45 and 90 minutes. I introduced myself, the study, and asked some simple questions to ease the participants' nerves of speaking to a stranger. I sought to build rapport, which is an integral part of IPA, to increase the likelihood of collecting rich data (Smith & Fieldsend, 2021). I then delved deeper into the interview protocol by allowing the participants to share their stories as much as possible. I closed the interview by asking the participants if they had any questions, thanking them for their time, and telling them their participation was greatly valued.

Data Analysis Plan

The data was analyzed following the IPA steps proposed by Smith and Nizza (2022). The process had six steps; however, steps one to four had to be completed before proceeding to steps five and six. I read through the transcripts from the Zoom software carefully and annotated the document using comments in Microsoft Word (Saldana, 2016). This covered step one in the IPA steps of Reading and Exploratory Notes. This

step allowed me to refamiliarize myself with the data as well as make initial notes. Smith and Nizza recommend three note-taking techniques: descriptive, linguistics, and conceptual. Descriptive notes are a summary of what is said. Linguistics notes consider how things are said. Finally, conceptual refers to questions that might arise through reading that require more thought.

The second step in analyzing the data in IPA was Formulating Experiential Statements (Smith & Nizza, 2022). These statements are derived from the notes in step one and included using more descriptive language to sum up the participant's experience based on what they stated. It involved the individual perspectives and context in which they responded. This second step was iterative because it involved multiple drafts after deep thought and thorough engagement with the data.

The third step, as recommended by Smith and Nizza, was Finding Connections and Clustering Experiential Statements. This step involved reviewing the statements from step two and finding what went together. It was time-consuming because of the notes from step two, and required synthesis. I arranged my clusters based on how the interview questions were asked, so I had five clusters as a starting point. Since IPA is iterative, those clusters changed. However, they provided me with a baseline.

The fourth step was Compiling the Table of Personal Experiential Themes. This table had the clusters renamed as themes called personal experiential themes (PETs), and the quotes that make up the clusters. These tables allowed me to have the proper documentation for my write-up (Smith & Nizza, 2022).

The fifth step was Cross-Case analysis, which entailed comparing and contrasting the different cases/participants (Smith & Nizza, 2022). In doing so, I noted the similarities and differences that created patterns. This allowed me to create a second table called the group experiential themes (GETs). The GETs table showed how each participant perceived each theme and their experiential statements (Smith & Nizza, 2022).

After analyzing the data in steps one to five, I wrote up the results. The results section is a fundamental part of IPA and requires a compelling narration of what the study revealed. Smith and Nizza (2022) recommend starting with a summary before delving into discussing each GET. I displayed my themes and experiential statements in a table, followed by a more comprehensive narrative of the results.

Data analysis in qualitative research, specifically IPA, takes time, critical thinking, and deep analysis (Smith et al., 2012). I did numerous rereads, edits, and revisions in this iterative process. I also practiced bracketing to ensure I recognized my feelings and thoughts about the questions, which I noted in a separate notebook. As a researcher, I did my best to portray the stories the participants chose to share in a rich and meaningful way.

Issues of Trustworthiness

At the crux of qualitative research is its trustworthiness. A study must be credible, transferable, dependable, and conformable to establish trustworthiness. I took some steps to ensure these were achieved in this study.

Credibility refers to the study focusing on and testing what it should (Lincoln & Guba, 1985, as cited in Kortsjens & Moser, 2017). I asked pertinent questions related to the research questions developed from the gap identified in the literature. I also used my extensive knowledge of the topic to ask follow-up questions when needed and clarified any questions participants had. The sampling strategy used in my study was voluntary, purposeful sampling. I used triangulation and reflexivity to reduce bias and increase credibility (Stadtlander, 2018).

Triangulation refers to using multiple perspectives to understand a phenomenon or answer a research question (Denzin, 1970, as cited in Flick, 2018). There are four different types of triangulations: data triangulation, investigator triangulation, theory triangulation, and methodological triangulation. For this study, theory triangulation was used. Theory triangulation is using different theoretical frameworks to ground a study. I did so with Deci and Ryan's SDT and Demeouriti et al.'s JDR. I also used reflexivity to manage my bias and personal feelings by keeping a notebook to track my feelings at the different stages of the research. I checked in with my feelings first to prevent them from transferring to the research.

Transferability is another integral element of trustworthiness and is the use of the study in another context. Introduced by Lincoln and Guba (1985, as cited in Drisko 2024), transferability is often used synonymously with generalization; however, there are some differences. Transferability is the term used in qualitative research to hold a similar meaning to generalizability in quantitative. It requires the researcher to present and provide the information and the reader to exercise critical thinking to incorporate the

information from one context to another. My dissertation explored scoliosis pain in female employees related to their experience of motivation and productivity at work in China. This study could be used as a reference point in other countries. It may be used for other back pains or workers in sedentary positions struggling with motivation and productivity. Simply put, my study may be transferred to other areas that have not yet been studied or, even if studied, can offer a different perspective.

Dependability is another aspect of establishing a study's trustworthiness. It refers to the ability of the study to produce comparable results when conducted again. It shows consistency and repetition (Janis, 2022). I was very detailed in my research design, detailing everything, including recruiting participants, data collection methods, and analysis, so that another researcher can duplicate this study (Shenton, 2004). These actions show that if someone were to replicate my study, it is expected to show similar results, demonstrating its dependability.

Confirmability is the final tenet of ensuring trustworthiness, and this means that all three other tenets have been achieved (Guba & Lincoln, 1989, as cited in Nowell et al., 2017). The study asks what it should, can be transferred to other contexts, and, if replicated, will produce similar results. As the researcher, I ensured that confirmability is met by focusing only on the data and what it revealed. I reduced personal bias and reported what is factual and not my presupposition. I had an audit trail, detailed field notes, recorded interviews, and transcripts (Shenton, 2004; Stadtlander, 2018). These strategies helped to ensure confirmability in my study.

Ethical Procedures

Ethical procedures are a critical component of research. Researchers must follow the code of conduct and guiding principles of the American Psychological Association (APA). One vital principle I followed during this process is Principle A of Beneficence and Nonmaleficence. This principle affirms that psychologists should not harm those they work with (APA, 2017). Psychologists should aim to avoid letting their personal lives interfere with their professional work. This was especially important because, as the researcher, I fit the inclusion criteria for my study and had to be mindful of personal biases.

Participants might want to “save face” in their responses, which brings the Principle E of Respect for People’s Rights and Dignity (APA, 2017). It was important to craft questions thoughtfully so participants could still maintain their dignity in their answers. I also reassured them that I would do my best to ensure that whatever they shared was confidential, as I am guided by the APA Code of Conduct and Ethical Standards 4.01-4.07 regarding confidentiality and privacy (APA, 2017). In following the principles of IPA, I promised and guaranteed them anonymity (Smith et al., 2012). These standards cover maintaining confidentiality, recordings, disclosures, and using confidential information for purposes other than stated. I also adhered to the APA Code of Conduct and Ethical Standards 8.01–8.03 and 8.05–8.07. These standards covered obtaining institutional approval before conducting the study, obtaining informed consent from the participants to participate, and using their voice and image in research (APA, 2017). The remaining standards of 8.05–8.07 covered dispensing or presenting the results

of the study, not offering excessive incentives to participants to secure their cooperation, and not being deceitful in conducting the study (APA, 2017). The purpose of the research was clearly stated before the interview, and how the information would be used, so that participants could be at ease knowing that whatever they said would be used solely for research purposes.

Ethical concerns related to recruitment might be excluded participants who feel discriminated against because of their gender and occupation. This might include those who identify as males and those who are not in a sedentary job but might be diagnosed with scoliosis. To address this, I can explain that to understand the intricacies of the phenomenon, it is necessary to be as specific and detailed as possible, hence the need for the criteria. However, future research could include other criteria.

Once participants express interest, I emailed them the Walden University IRB consent form so they could provide informed consent by agreeing to the terms and responding with “I consent.” Following their consent, I proceeded with scheduling the best time to conduct the interview. The interviews were conducted in a room with only the interviewer present. The Walden University IRB approval no. is 07-02-25-1162725.

There were no risks of power relationships as the data was not collected from any single organization. Participants were not required to name their employer. There were also no privacy risks, as I made every effort to keep the data collection process confidential and to secure the data safely. The data was collected via Zoom, and the researcher was the only one in a locked room. The data was stored on the researcher’s password-protected computer.

The researcher was the only one with access to the data. Once the data was collected, it was immediately transcribed to remove identifiers, and participants were assigned pseudonym letters such as “Participant A.” The original video file was not shared with anyone. The physical files will be shredded and destroyed after 5 years. The files on the computer will also be deleted, and the trash bin emptied.

Summary

This qualitative research study explored the different perspectives of female employees in China diagnosed with scoliosis and their motivation and productivity at work. This chapter included the purpose statement, the role of the researcher, participants, research design, sampling, data collection and analysis, issues of trustworthiness, and ethical procedure. The following chapter includes the results from the study and with a comprehensive summary of the findings related to the research question.

Chapter 4: Results

This IPA study explored the lived experience of women experiencing scoliosis pain at work and their motivation and productivity. I addressed two research questions:

RQ1: How do female employees with scoliosis pain describe their motivation when working?

RQ2: How do female employees with scoliosis pain describe their productivity when working?

This chapter includes the setting of the study, the demographics of the participants, the data collection method used, evidence of trustworthiness, the data analysis method used, and the results.

Setting

Participants were recruited through WeChat, a Chinese social media platform. The recruitment flyer and a short message were shared in groups on the platform, inviting participants to scan the QR code to send an email expressing interest in the study and to confirm that they meet the selection criteria (see Appendix A). Snowball sampling was also used, where participants could share the study information with others whom they thought met the criteria. A total of 11 females responded, but only eight were included in the study as having met all criteria. One potential participant shared that she had scoliosis but experienced no pain, so her interview was ended midway. Two other participants expressed interest but did not respond further.

Demographics

The study consisted of eight participants who were women between the ages of 26 and 60, sitting for at least 4 hours daily, living and working in China with scoliosis pain, and fluent in English. At the start of the interview, I confirmed that the participants met the selection criteria and asked about their job titles and nationality. Participants were addressed by their names during the interview to build rapport; however, immediately after the interview, I edited the transcript to replace their names with identifiers. Table 1 shows the demographic data of the participants.

Table 1

Demographic Information of Participants

Participant	Age	Job title	Nationality
A	40	Event coordinator	Slovenian
B	33	Actor and editor	American
C	33	Physiotherapist	Chinese
D	26	Teacher	American
E	31	Teacher	Jamaican
F	60	Professor	American
G	26	Teacher	Russian
H	38	Vice principal	Canadian

Data Collection

Data collection began after obtaining approval from Walden University's IRB. I used purposeful sampling and posted the flyer (see Appendix A) in various groups on WeChat and waited for participants to make contact. Data were collected using the questions developed with the assistance of my committee in the interview protocol (see Appendix B).

The interview protocol began with questions to confirm demographic criteria and build rapport. It then continued with more in-depth questions to inform the perspective of the lived experience of females in China with scoliosis pain and their motivation and productivity at work. The interview questions are found in Appendix B and provided further insight into the phenomenon. The research was conducted using semistructured interviews to allow for structure and flexibility in the process.

At the beginning of the interview, I confirmed that the participants met the criteria, reminded them of their right to confidentiality, and that they could opt out of the interview at any time. Interviews lasted an average of 50 minutes and were recorded with both video and audio on Zoom. I began the interview by introducing myself, the study, and confirming demographic data. I followed the interview protocol designed with the guidance of my committee and used probes and follow-up questions for further clarification where needed. At the end of the interview, participants were asked if they would like to share anything else or if they had further questions. They were also encouraged to send an email if they had questions or concerns in the future.

Data Analysis

Data analysis was conducted following the IPA steps by Smith and Nizza (2022). This analysis method was chosen to align with the IPA research design, which allowed for exploring emotionally charged and unique experiences such as the participant's scoliosis pain. Data analysis included five steps, namely, reading, and exploratory noting, formulating experiential statements, finding connections and clustering experiential

statements, compiling the table of personal experiential themes (PETS), and finally, conducting the cross-case analysis of the group experiential themes (GETS).

The interview was recorded and transcribed using the Zoom software. After the interview, I copied the transcript into Microsoft Word and cleaned it by relistening to the recordings multiple times to ensure nothing was missing. I then changed the participant's name and replaced it with alphabet identifiers such as Participant A (Pa). After completing all interviews, I added initial notes to the transcripts by annotating in the margins. I waited until I completed all the interviews before coding to prevent bias. My notes were descriptive, linguistic, and conceptual. I then started my exploratory coding, where I created a two-column table with the completed transcripts on the left and the codes on the right.

Following this, I arrived at step two by Smith and Nizza (2022) of formulating experiential statements. These statements were taken from step 1 of exploratory and initial noting. Following this, I arrived at step three of finding connections and clustering experiential statements. I used the experiential statements from step two and grouped them into related clusters. I had an average of six clusters for each participant by starting with how the interview questions were asked. During this iterative step, I took a break from the data for 2 days and then approached it with fresh eyes to edit and adjust accordingly. This was time-consuming, and I used my reflexive notebook to ensure I was not adding my own thoughts to the data but interpreting it with as little bias as possible.

In step four, I compiled the table of personal experiential themes (PETs). This table had the clusters for individual participants identified in step three, now renamed as

themes, as well as the clusters that made up each theme. Similar to step three, I took breaks from the data during the iterative process so I could approach it with fresh eyes and make changes where necessary. The final step in the data analysis process was the cross-case analysis. In this step, I manually wrote the experiential statements and PETs in a large notebook so I could see them all at once. I then created a table in Microsoft Word and manually input them. This table was known as the Group Experiential Themes (GETs) table. The GETs table included five main themes across each participant. Five themes were chosen from five or more participants discussing and sharing information regarding their perception of the phenomenon. After analyzing the data in steps one to five, I wrote the Results section.

Evidence of Trustworthiness

In qualitative research, establishing trustworthiness is integral to a study. This was demonstrated through various strategies to ensure transparency at each step in the process and to maintain academic rigor. The four strategies employed in this qualitative IPA study to achieve trustworthiness were credibility, transferability, dependability, and conformability.

Credibility was achieved through the study focusing on and testing what it should. I asked pertinent questions related to my research topic. I also asked follow-up questions and used probes relating to the phenomenon. Bias was reduced using theory triangulation by using two theoretical frameworks. I also used a notebook to record my personal feelings after the interviews and during the data analysis steps.

Transferability was achieved by presenting the data below in a way that encourages critical thinking among the reader and shares a story. My study was conducted among females in China with scoliosis pain, but it could be transferred to those with other back pain, males, and to other countries.

Dependability was achieved through my meticulous research design, recruiting methods, data collection methods, and analysis. Following the advice of my Chair, I analyzed and detailed the data at every step.

Confirmability was achieved by the study asking what it should. It was also achieved by its ability to be transferred and to be replicated to by other researchers and produce similar results. This was achieved through audit trails, detailed field notes, recorded interviews and transcripts.

Results

This section presents the findings of the IPA of eight participants. After following the IPA steps by Smith and Nizza (2022), five key themes were identified. These themes were derived from the personal experiential statements of each participant, clustering the experiential statements and then comparing and contrasting among participants. Each theme below will include a summary, a common thread among participants, and illustrative quotes.

Table 2*Key Themes Derived From Participants*

Group experiential theme (GET)	Personal experiential theme (PET)
Navigating and adjusting everyday life with scoliosis pain	Pain experiences in daily life and adjustments Scoliosis pain in personal and professional life Experiencing invisible pain
Tools used for managing chronic scoliosis pain	Strategies to manage and alleviate pain Strategies to navigate pain and persist Adjusting to the pain and coping
Psychological aspects and affective response to pain in the workplace	Emotional complexity of chronic pain in the workplace Emotions and personality shaped by pain experience Emotional weight and feeling of living and working with scoliosis
Chronic pain impacts work performance and productivity	Pain impacts productivity and performance at work Adjustments at work due to pain and impact on productivity Influence of pain on productivity
Opportunities to improve employee well-being	Organizational support and solutions to improve employee well-being Suggestions to improve the organization and work environment Organizational support and managing pain in different work environments

Theme 1: Navigating and Adjusting Everyday Life With Scoliosis Pain

Pain emerged as a central experience among all participants. It was manifested as both a physical and emotional phenomenon. All participants expressed how scoliosis pain led to the need for adjustments in personal and professional life. Participants described their pain as invisible, unpredictable, and sometimes debilitating. The following experiential statements highlight the general experience of all the participants, with some nuances as to the severity of their pain.

Pain Experiences in Daily Life and Adjustments

Many participants expressed a need to make changes to the way they sat and relaxed. They also expressed the need to constantly be moving or be active to reduce or relieve pain.

For example, Participant A said:

I started feeling a little bit different because I can see people can ... sit for a long time. People can do it while I get irritated, so I have to ... even, like, oh, let's go to the cinema and watch a movie. Uh ... can we do it at home, where I can lay down or something?

This highlights the participant feeling cheated out of normal experiences that others can enjoy without needing to adjust or being in pain. The participant's use of "irritated" also highlights how the pain contributes to her mood, feelings about herself, and general outlook. Ending the statement with "or something" also shows the participant grasping at and hoping for a solution to her pain.

Scoliosis Pain in Personal and Professional Life

The above experiential statement was expressed by all participants. They shared that the diagnosis had an impact on their personal and professional life in some manner. All participants shared that they have needed to stop their workday to stretch, take a walk, or do some exercise to combat the pain. For example, Participant B said:

Yeah, sitting still is the worst. Um At the desk, hunched over uh, so I'll try to stretch as much as I can. I come in here, and I'll you know, lay over a block or something for a little while if I need to.

This highlights how painful sitting is and especially sitting in front of a computer. The participant's use of the superlative 'worst' is indicative of the severity of her pain. It highlights ergonomic concerns the participant has and her solution of moving to a private room for stretching. It also highlights the participant needing to use creative ways to alleviate her pain.

The participants have shared how much pain is a part of their daily life. All participants expressed feeling daily pain with the severity fluctuating. Pain is a normal part of their existence. Participant D shared: "I guess, pain I'm feeling right now, and I said, that was a 3, but that's normal...that's how I normally feel about my back and my spine."

Her nonchalant use of "but that's normal" underscores her familiarity with pain and acceptance of it. Pain is an ongoing phenomenon that has infiltrated all areas of their lives. Participant C also shared: "Uh, well, too much pressure for me, so, normally I will only sleep for 6 or 7 hours, uh, before the pain becomes very difficult for me."

This calls attention to the need to limit sleeping hours because of the fear of pain. Scoliosis pain is a permanent and chronic fixture in their life, which requires necessary adjustments and sometimes begrudging acceptance.

Experiencing Invisible Pain

Seven out of the eight participants have had to learn to fight a battle that is sometimes not seen or understood by others. Their pain has been understated, dismissed, and oftentimes disregarded. Participant G, for example, shared feeling judged for experiencing pain and taking time off for rest when the pain isn't visible to others. She

expressed wanting: “my company or my boss can tell them that I’m not pretending, I really have diagnosis, I’m in pain, and no need to talk to me like that.”

The disbelief from others led to Participant G isolating herself from colleagues, turning inwards, and not sharing her feelings with anyone outside of her immediate family. The Participant also shared how she used self-talk to remind herself she is not “crazy.”

Participant A also shared:

Or they just ask you, oh, did you take painkillers? That’s the reaction, you know. Yeah. They don’t know how to handle it, especially if they don’t feel that, you know? They’re like, okay. And everybody’s like, spine, spine is spine, like ... Don’t touch that. So, yeah, I think it’s like that.

This statement highlights that scoliosis pain is often misunderstood by others and is often generalized as back pain. It also shows the fear-avoidant behavior attached to diseases concerning the spine and justifies the participants’ hesitancy to ask for help.

Theme 2: Tools Used for Managing Chronic Scoliosis Pain

All participants mentioned having tools and coping strategies to help them manage the physical and emotional pain of chronic scoliosis. These strategies mainly include stretching, exercising, and walking. However, Participant D, for example, shared that she did not exercise because she associates exercise with soreness, and she already has pain from scoliosis; however, she engages in pole fitness to strengthen her core. All other participants conveyed the importance of movement and how instrumental it is as a part of their pain management strategy.

Strategies to Manage and Alleviate the Pain

The participants' strategies stemmed from the need to alleviate their pain. They shared that more movement often meant less pain; however, there are situations where it doesn't matter how much they exercise or move, the pain persists.

Participant D shared: "Yeah, just always feels ... stiff, and ... Um, it doesn't matter, like how many stretches I do, I just ... it never feels like it gets better."

Participant E shared: "but on the times when, you know, that onset of pain comes, and sometimes the stretches help, but sometimes it doesn't."

However, Participant C shared: "For me, exercise is the best solution."

These three quotes highlight the nuances of scoliosis pain and how individual perspectives might contrast each other. The participants' pain is subjective, complex, and entails multiple factors.

Strategies to Navigate the Pain and Persist

Participants have had to find ways to navigate their pain. Most participants mentioned massage therapy as a necessity and not a luxury in their lives. They have also shared using tools such as rollers or massage guns to deal with their pain. Regardless of their strategy, all participants conveyed a desire to persist in spite of their pain. Navigating the landscape of pain has been a frustrating journey, but all participants shared their unwillingness to give up and to push on.

Participant A shared: "Do sports till the day you die. That was my mind when he said it. He said, as long as you're active."

Participant G shared: “Yeah, uh, now ... I know that ... I need the hard work, uh, I need exercises, and I need much, uh. Yeah, I need much work to go through with this in my life, so, like, now it’s different.”

Participant H shared: “I get up very early, 4 in the morning, um, to start off with a run and a workout, and a long stretch session.”

All three quotes above illustrate the participant’s discipline as a means of survival and combating the pain. The participants recognize that to push through and persist, they need structure and routine, even if it’s not something they want.

Adjusting to the Pain and Coping

All participants mentioned the need to adjust to their pain and learning to cope. They have had to not just employ practical strategies to their pain but also attempt to reclaim control of who they are, what they do, and how they show up among others. Participant B shared: “then I just have no shame anymore with the ... laying on the ground and stretching my back, because. If I don’t, I’m gonna be ... Uh, grumpy.” This indicates that she is at the point of putting her comfort over how she might be perceived.

Participant A also shares something similar by saying: “I cannot see, because it ... and that ... the pain is so irritating, I want to punch somebody. So, it’s not good for people, so I better stand.” Both participants recognize that their mood might be affected by their pain, so they have to adjust accordingly to prevent it from getting destructive.

Participant F, on the other hand, felt that her pain doesn’t influence her relationships at work, she shared: “Because, I mean, I tend to be a pretty optimistic, happy, high-energy person. Um, no matter what. So ... yeah ... Um ... some people might

say, I'm masking, I don't know." The delay between statements shows a hesitancy to share about masking. Her use of the word "people might say" followed by "I don't know" also suggests some confusion as she tries to make meaning of her pain and others' perception of her.

Theme 3: Psychological Aspects and Affective Response to Pain in the Workplace

Participants shared different emotional responses about their pain in the workplace, how their personality shaped their pain experience, and the emotions from living with scoliosis. They shared about feeling frustrated and angry, but also accepting and trying to make the best out of their situation.

Emotional Complexity of Chronic Pain in the Workplace

The pain the participants experience is not just physical but also mental. Their daily lived experience involves loss of control, yet self-regulation, and vulnerability, yet strength. Participant A expressed intense emotions this way:

I have no idea how I do it. Now that you ask me- laughs- It's just, like, it's exhausting. I try to endure, endure. But it's ... it's not a good feeling; it's not a good feeling. And, um ... I don't know, if I am with somebody, working something, I can be really irritated with the little things, so I try not to. I try to breathe through and say, it's because of pain, but sometimes I just can't, and then I'm like, I'm sorry, I need a break, I ... I can't do it.

The question about how she manages her emotions seemingly shocked the participant, inferring she wasn't used to anyone showing concern for her emotional well-being. She responded with a nervous laugh, followed by expressing how exhausting it feels living

with chronic pain. She repeats the word endure the reiterate and emphasize her silent suffering.

Participant C on the other hand, expressed emotional minimization by sharing: “It’s a little bit stressful, but not too crazy. And it’s helped me more ... Uh, to understand the people who have pain in my work.” While being empathetic and compassionate, she also sought to minimize and understate her emotional needs. This layered response is indicative of wanting to downplay her own pain in service to others.

Participant E also shared:

I just sit down and dissociate. Once I get in, and the thing is, I have on my work clothes, I’m not gonna go into bed, I’m not gonna go on the couch, I just sit on the floor in the living room lean against the wall for a bit, because that gives me that support that I need, so just sit down on the floor.

This statement of dissociation indicates that the participant views her workday as a traumatic experience. Upon arriving home, she detaches and leans on the wall, which is a metaphor for finding support and something dependable in uncertainty. All three quotes suggest how emotionally layered their pain experience is. It is somewhat paradoxical with the mixture of empathy, compassion, and emotional distancing.

Emotional Weight and Feeling of Living and Working With Scoliosis

Pain has a profound impact on the participants. This pervasive burden encompasses physical and psychological distress. The participants are in pain yet unsure if and how they should express that pain. Participant B brings light to this by stating:

Uh, so ... I don't know, back pain kind of seems like a complaint that everybody would make at some point, and it ... it just seems whiny. You know, if it was, like, migraines, or ... a broken arm or something, then it would be ... something to talk about more? So yeah, I guess I just ... I don't like to seem like ... Um, I'm just complaining all of the time. Even though people would never understand what it's actually like unless they have scoliosis.

This highlights the layers of the participant's emotions. On one hand, she doesn't want to complain and tries to minimize her pain, but on the other, she shares that no one would understand. These conflicting emotions emphasize the participant's attempt at meaning-making and self-preservation. If she doesn't complain, then she can't be misunderstood or ignored, and that would be even more painful.

Theme 4: Chronic Pain Impacts Work Performance and Productivity

The participants all mentioned how pain impacted their work performance and productivity. Some participants mentioned not wanting to do anything, some mentioned being unable to function, while others mentioned the pain made them work even faster to finish tasks.

Pain Impacts Participants' Productivity and Performance at Work

Participants described how scoliosis pain influenced their concentration, energy, and motivation at work. Their daily pain impacted their ability to focus and perform at work. Participant A shared:

then I can't focus, and ... is just ... is just really irritating. Like I said, it's so irritating, you want to punch somebody, or something. And I don't do that, so ...- laughs- But this is how I can describe it. It's so annoying, you know? It's just consumes (sic) ... Your mind, so you have to, like ... I can't concentrate, yeah, it's very difficult to concentrate.

This emphasizes how her pain dominated her thoughts and made it difficult to concentrate at work. The participant hesitated a lot while sharing, as if searching for the right words. The repetition of concentrate emphasizes the gravity of the situation.

Adjustments at Work Due to Pain and the Impact on Productivity

Participants have adjusted their workstations and work environment to combat the pain and remain productive. Participant G shares that she has changed jobs to make it easier to work:

okay, like, now I try different works, and now I, uh ... specify on online teaching because, like, it's the most convenient way for me, because it helps me to sometimes relieve the pain. Like, I ... because I can't sit, uh, for too long time without moving. So, like, I can, uh, stand up and have some refreshments in the middle, like in the middle of the classes, in the gaps.

The participant placed her health and her desire to be pain-free first by deciding to change her job. This was in response to the pain she felt at a normal in-person school and her inability to find relief. By making the change, she now has the flexibility, like she mentioned, to stand up and move around.

Influence of Pain on Productivity

Participants divulged that pain influenced their productivity and that the pain can be disruptive and lead to inefficiency. This was illustrated by Participant D who shared:

there's a difference between you know pain that is ... annoying versus pain that, like, takes you out of your element. And so, I feel like, even though the pain that I experience at work. Every now and again, is more on the ... inconvenience side of things. It's like, oh, like ... I can still focus on lesson planning, and I can still finish this class, but it would be so much easier if I didn't have this random pain in my back.

This highlights the different levels of pain, such as pain that motivates and pain that demotivates. Participant D is sharing that her work would be easier without the pain in her back, but she persists despite it.

Theme 5: Opportunities to Improve Employee Well-Being

The participants all mentioned recommendations on how organizations can implement strategies and practices to improve well-being at work. Some mentioned already feeling supported, while others reported absolutely no support, and all desire more.

Organization Support and Solutions to Improve Employee Well-being at Work

A recurring concern voiced by the participants was the need for ergonomic adjustments or changes to their workstations. Participant D said it this way:

Um, so ... I'm actually surprised that there isn't already more, I guess, back support for wherever those people work. Uh, whether it be in our ... in our

cubicles, or ... If you know, a professor has a separate office. Um, so I think ... investing in that is probably the first step. I think that would be, um ... I think that we would be beneficial, not just for the Foreign Language Department, but just ... for the entire university.

These comments show the concerns about investing in proper ergonomic support for employees and how beneficial it would be in terms of improving comfort and boosting productivity. Ergonomic support, such as modified chairs, desks, and computers, would be practical investments in the workplace to help those with physical discomfort and to prevent further harm.

Suggestions to Improve the Organization and Work Environment

The participants stated various ways in which their organization could improve. Some cited that though they already felt comfortable in their job, there is still room for improvement. Recommendations voiced by the participants include wanting to provide input or contribute to discussions about workplace improvement, wellness programs to enhance their holistic health and alleviate the pain, and policy changes. Participant F shares:

Um, it would be great if they came to us and said, you know, what are some of the things that make you uncomfortable at work, or, you know, or that you think are ridiculous that we could change, you know, to make you feel empowered. Also improve the environment, but ... You know, I don't think I've ever been in a company that has done that.

Participant F's revelation demonstrates a need to be satisfied by the company by communicating with its most important shareholders (employees). Participant H also expresses:

Again, I would say, like, uh, some reimbursements or a wellness program would be absolutely amazing. But the company that I work for is under a larger branch. It's kind of like that whole faceless, the actual owner who's doling out money and buying these programs doesn't actually work with or see the workers.

This indicates that employees would like to be partners in their own well-being. This is advantageous to both the company and the employee as it increases engagement and allows workers to feel heard. Investing in the health and well-being of their workers boosts morale.

Organizational Support and Managing Pain in Different Work Environments

The participants shared how they would like to receive organizational support and assistance in managing their pain in different environments. Participant E conveyed that she would like the ability to pursue wellness opportunities outside of work since she's unable to do it at work:

So even that, like, give me a gym pass, or give me health insurance, or at least a bit of chairs. Because, okay, taking a break might be non-productive, or, like, sitting down might be non-productive. Give me something that I can do on my time.

The participants all shared the desire for more support, even those who already receive some semblance of it. They desire effort, understanding, and to be asked what would improve their time spent at work.

Interpretively, these themes and accounts reveal that the participants' pain is not uniform and that they have their subjective experiences. However, they share commonalities in navigating their pain the best way they can, developing tools to cope, and dealing with the emotional complexity of pain. They also admit that pain impacts their performance and productivity at work and that they desire support from their jobs.

In this chapter, I explained the setting, demographics, evidence of trustworthiness, data collection, and analysis process, and presented the results of the study. This chapter allowed for a comprehensive analysis of the key themes found in the study and insights shared by the participants regarding the phenomenon. In chapter 5, I will discuss the research findings regarding the theoretical foundations and literature. I will also discuss the limitations, recommendations, implications of the study, and the conclusion, thereby providing further understanding of the research problem and scholarly discourse.

Chapter 5: Discussion, Conclusions, and Recommendations

This IPA study was aimed at exploring the lived experiences of women living in China with scoliosis pain and their motivation and productivity at work. In this chapter, I analyze and interpret the findings in the context of the theoretical frameworks and previous literature. I also discuss the limitations of the study and provide recommendations for future research.

Interpretation of Findings

Theme 1: Navigating and Adjusting Everyday Life With Scoliosis Pain

Scoliosis pain is a type of chronic pain that impacts an individual's personal and professional life. Living with scoliosis pain encompasses navigating this pervasive disruption to daily life and adjusting as best as possible. One of the central themes that emerged was that navigating and adjusting everyday life with scoliosis pain has been the lived reality for the participants. Zaina et al. (2023) found that scoliosis caused increased back pain. In my study, I was able to confirm Zaina et al.'s research as all eight participants reported increased back pain. A limitation of Zaina et al.'s study was that little research had been conducted on the psychological effects of pain. My study was able to address that gap by exploring the emotional complexity of living with scoliosis pain and how participants made sense of their reality.

Their accounts demonstrated that pain was experienced in all areas of their lives and prompted the need for adjustments in their personal and professional life. These adjustments included being mindful of posture and needing to lie down or stand up frequently, among other changes. Although previous studies focused on chronic pain and

how it impacted quality of life and work (El-Tallawy et al., 2021; Leifer et al., 2022; Raffaelli et al., 2021; Wilkie et al., 2015), none focused on scoliosis pain. The data gathered and analyzed from the current participants addressed the gap in understanding the nuances and subjective experiences of the participants. Participants reported feeling cheated out of normal experiences and they could not perform as others could. This illustrates the limitations they encountered because of their pain and their desire for normalcy. A paradoxical relationship was highlighted between both struggle and adjustments because participants sought autonomy despite feeling constrained. Autonomy is one of the three tenets cited by Ryan and Deci (2000a) in their SDT, which posits that for individuals to feel satisfied and motivated, they need to have autonomy, competence, and relatedness. The current participants sought to regain some degree of control over their personal and work environments by adapting, thereby satisfying the autonomy need.

Scoliosis pain ranges from mild to severe discomfort. Penn Medicine (n.d.) shared that the pain and location might differ between individuals, and that was confirmed by all current participants who shared different pain levels and different pain locations. Some participants described their pain as “dull, stiff,” others reported “spasms,” and some found it difficult to put their pain into words. The commonality, though, was that the pain is ever present and encroaches on all aspects of their life. Seven out of eight participants shared the feeling of being misunderstood by others. They felt that their pain had been minimized and generalized. This is in keeping with previous research that addressed other chronic pain such as osteoarthritis and generalized back pain (Leifer et al, 2022).

The sparse research on scoliosis pain in women working in China led to the revelations of the current study. Participants reported that their pain was sometimes invisible yet always constant.

Theme 2: Tools Used for Managing Chronic Scoliosis Pain

All participants stated that they had various tools and strategies to manage their pain. They included stretching, walking, getting massages, or using a massage gun or roller as vital to their relief. Seven out of eight participants also listed exercise as a beneficial coping mechanism. Mayo Clinic (2023) suggested strength training as a helpful strategy, and this was echoed by participants who found it helpful. However, though the above-mentioned provided relief, seven out of eight participants reported that this was temporary.

Despite the temporary nature of the relief, the participants persisted and displayed high self-efficacy and self-leadership. One participant admitted to feeling as if she had to do sports until she died, but this statement doesn't reveal a feeling of detriment or despair, but rather a strong resolve to do what it takes. Chu et al. (2021) suggested that self-efficacy allowed individuals to demonstrate competence while self-leadership allowed them to demonstrate autonomy. Both of which might increase motivation. In stating this, the participant is demonstrating two of the three tenets of SDT, thereby fulfilling her needs despite her frustration. This tool of autonomous self-regulation helped the participant to engage in the activities because of the perceived benefits.

In deciding to persevere, the participants are expressing their agency and intrinsic motivation. They practiced acting with intention and made choices that aligned with their

goal of achieving pain relief. These displays of autonomy and competence are key concepts of SDT, where the participants can accomplish their goals and can do so effectively (Ryan & Deci, 2000b). They all voiced the importance of coping and regaining control of themselves. A recommendation made in Mohammed et al.'s (2024) study is that individuals be proactive in their daily lives. This was displayed by the participants' autonomy and competence in taking control of their health and their pain. Their coping strategies aren't static but rather adapted to match their fluctuating pain levels as best as they can.

Theme 3: Psychological Aspects and Affective Response to Pain in the Workplace

Chronic pain can lead to irritability, frustration, depression, and anger. These were emotional responses listed by all participants. They all shared the emotional strain of chronic pain and the complexity of regulating their emotions at work. They shared the emotional weight of living and working with scoliosis. This revelation confirmed numerous research studies of pain leading to other issues such as anxiety, anger, and depression (Marshall et al., 2017; Martinez-Calderon, 2019; Reynolds & Flores, 2021; Tanaka et al., 2022). In my study, the pain was specifically scoliosis pain. These emotions contributed to emotional withdrawal, minimization, and dissociation.

Participants shared not wanting to complain out of not wanting to seem whiny, while others shared that complaining wouldn't solve anything. Both points of view show how the participants self-regulated as a means of survival. Woods et al. (2022) and Bakker and de Vrie (2020) echoed similar statements earlier by stating that individuals who self-regulate and possess self-leadership skills respond differently to their

environment as opposed to those who do not. The participants all chose to endure despite their feelings, highlighting how emotionally layered their pain experience is.

Ryan and Deci's (2000b) SDT provides a theoretical approach for understanding the participants' psychological and affective responses to pain in the workplace. All participants reported needing breaks to exercise or stretch. Of the eight participants, three reported being able to use these strategies without it disrupting their work. They were able to incorporate stretches in their workday, take breaks, and walks. The participants in the present study, emotional response to pain is not only directed at the physical pain, but how they manage their pain, that is, their autonomy. If they are in control of their chosen method of how and when they can relieve their pain, their autonomy need is met, they are more engaged at work, and experience more positive emotions. Conversely, if they are unable to do so, then this leads to further emotional distress in the workplace. In turn, this negatively impacts the work environment and shapes how the participants perceive their worth at work and their relationship with others.

SDT's third tenet of relatedness was noticeably missing from six out of eight participants' perspectives. Their feelings centered on being unable to share their feelings with anyone because they would not understand unless they had scoliosis. They conveyed a desire to have a shared experience with someone who could genuinely empathize. It also hinted at a defense mechanism and self-preservation. These participants are lacking a sense of belonging, which also impacts their performance and productivity.

Theme 4: Chronic Pain Impacts Work Performance and Productivity

All participants mentioned some impact on their work performance and productivity from pain. A limitation of Heidarimoghadam et al.'s (2020) study, which sought to understand the effects of work-related musculoskeletal disorders, quality of work-life, and productivity among office workers, was a lack of focus on productivity as an outcome compared to the other variables. The present findings of this study focused on productivity and revealed that individuals in pain at work found it difficult to concentrate, focus, and feel motivated.

Participants reported completing tasks more slowly and missing deadlines. Some participants stated that while they completed their tasks, they did it begrudgingly while in pain, while others stated that their pain made them work faster. McKillop et al. (2020) stated that individuals might choose to work through pain for various reasons. However, McKillop et al.'s study was not scoliosis-specific, while my study is. This study has confirmed that females in pain can remain motivated and productive at work, albeit unenthusiastic and disengaged. Their need for competence from SDT has been met, thereby influencing motivation; however, the question remains of the work environment that shapes said motivation.

The job demands-resources model (JDR) by Demerouti et al. (2001) explains that job demands can lead to strain and burnout, whereas job resources can lead to engagement and motivation. These job demands include high workload, emotional demands, deadlines, and other stressors, while job resources refer to support, feedback, salary, autonomy, and other benefits. Of the participants interviewed, three reported

feeling supported at their jobs and cited needing more support. Three other participants shared having to change jobs because they did not feel supported and felt unable to be productive at work due to their workstations. This confirms a study by Eriksen et al. (2004) among nurses in Norway established that lack of organizational support increased lower back pain.

However, an earlier study by Ahlberg-Hulten et al. (1995) found no association between social support and lower back pain. This contradiction is indicative of a shift in employees' needs from showing up to work and receiving financial benefits and being satisfied to now desiring more non-monetary incentives. The present findings of this study indicate that the participants' well-being is negatively affected by the lack of job resources to combat demands.

Theme 5: Opportunities to Improve Employee Well-Being

All participants expressed a desire for their organization to make improvements regarding policy changes, discussions about workplace improvements, and wellness programs to improve health. The recommendations from the participants illustrate a lack of resources, according to JDR. Some participants mentioned the lack of trust and the lack of supervisor support in their organization. Trust and supervisor support are resources under JDR that foster a sense of belonging and increase engagement. The model holds that when individuals are provided with physical, social, and organizational support, this reduces job demands and burnout while increasing engagement and performance.

Another job resource that participants mentioned would be beneficial is ergonomic support at their workstation. The investment in this job resource would help to offset the job demands of back pain from prolonged sitting in uncomfortable chairs. In using job resources to mediate job demands, organizations are improving employee well-being, increasing engagement, and motivation. Their sentiments confirmed Sharifi et al.'s (2021) study, which suggested that ergonomic interventions are integral to the physical and psychological health and well-being of employees in the workplace. In this study, I was able to address the gap in Sharifi's work, which did not consider motivation and productivity as outcomes. Ergonomic support would increase productivity as the employees would feel more comfortable, which is mutually beneficial to the organization as well.

The participants all displayed critical awareness and social understanding of their individual situations and how they fit in the world. They expressed wanting to be involved in discussions on how to improve the work environment. This supports Punnett et al.'s (2009) findings that employees should be participants in conversations about workplace programs. Participants also shared wanting more than conversations, but also actions such as policy changes. They recommended the creation of wellness programs and providing health insurance. These proposals also align with JDR and would buffer the negative aspects of the job demands, such as long work hours, time pressure, and poor communication.

The participants all reinforced that both the SDT theory and the JDR model are integral in the way of work. The resources in JDR cultivate the work environment that

allows SDT to thrive. It allows us to see that when the three innate psychological needs: autonomy, competence, and relatedness are met, individuals are engaged, satisfied, and motivated.

Limitations of the Study

There were several limitations in this study. The study was conducted in English and not Chinese so this excluded Chinese-speaking females who might have been diagnosed with scoliosis. The second limitation is that the study included only females with scoliosis pain unrelated to any other musculoskeletal disease. The third limitation of this study is that it excluded females who were diagnosed with scoliosis but who were not in pain. Though they were not in physical pain, the diagnosis could have caused other mental strain, which this study did not address. The fourth limitation is that this study is not generalizable. The study focused on obtaining deep and rich information from the participants about their nuanced perspectives. This specificity resulted in detailed findings that could be applied to similar small studies but not to larger ones. The fifth limitation of this study is the self-reported data provided by the participants. They shared their perspectives, which could have been minimized or exaggerated.

Recommendations

In this interpretative phenomenological study, I explored the motivation and productivity of females working in China with scoliosis pain. I built on previous motivational studies by discussing self-determination theory in the workplace. I also expanded on studies on workplace productivity using the job demands-resources model.

Finally, I recognize that while this research addressed meaningful gaps, there are opportunities for future research, which is also discussed below.

The findings of the study revealed that there is a relationship between scoliosis pain and productivity. Similarly, individuals employ different tools to manage their pain. It also revealed that motivation is impacted by need satisfaction and emotional regulation. Finally, it found that employees desire support, relationships, and policy changes in the workplace.

I recommend that organizations in China should endeavor to have a holistic understanding of the individuals they hire within the scope of the law. That is, if there is a need for accommodation, this should be provided. These accommodations might be in the form of relationship support (Fiaz & Fahim, 2023), ergonomic support (Sharifi et al., 2022), and policy changes (Pollack Porter et al., 2018).

Relationship support entails feeling a sense of belonging and as if you are an integral piece of a whole. Organizations should cultivate environments that encourage open communication, camaraderie, and cohesion. This can be done through open door policy of discussions, checking in with workers, mentorship, and peer support. These will help employees with their development at work, help them feel respected, and improve overall morale.

Ergonomic support will help to alleviate the pain, provide some relief, and possibly prevent their condition from worsening. These changes might include sit-to-stand tables, ergonomic keyboards, raised and adjustable monitors, chairs with ergonomic support, and ergonomics education. It also has productivity benefits as pain-free workers

will be more efficient. Workers will also feel supported that the organization is adjusting for accommodations and promoting inclusivity.

Policy changes might include change management training to further ergonomics education and workforce training. This training would focus on soft skills such as inclusivity, emotional intelligence, and empathy. Other policy changes might be logistical, such as flexible workdays when in pain with the option to work from home, days off for doctor's appointments or physical therapy, and being able to take breaks as needed.

These changes are not immediate and require financial investment and some operational disruption. However, they provide companies with a strategic advantage of being ahead of regulations and compliance standards. Providing support entails both accommodation and validation, and most importantly, shows employees that their health and well-being are a priority. Employees who feel cared for translate to motivated and productive workers.

Further research is integral to the advancement of science as scholars attempt to examine and expand on the work of those before. In doing so, we can ask questions, address gaps, and contribute to the literature. While this study offered valuable insights into the lived experiences of females in China with scoliosis pain and their motivation and productivity at work, there are still other aspects to examine in terms of additional outcomes, theoretical frameworks, demographics, and methodology.

Future research could conduct a longitudinal study to examine changes, if any, to participants' perception of their pain over time and how it impacts their motivation and

productivity. In this current study, participants recounted their perspective of their pain from diagnosis to present. It was their first time reflecting and sharing this encounter so future longitudinal studies would be beneficial to see how they make sense of their pain over time. It could also be used to track their health outcomes, as scoliosis is a degenerative condition that often worsens over time. Future research could examine how the participants feel then, compared to this present study, and whether their lived experience has changed. While this study explored the outcomes of productivity and motivation, future studies could explore outcomes such as cognition, probe deeper into emotions, and quality of life at work.

This study was grounded on the SDT and JDR model. The frameworks allowed for the exploration of participants' autonomy, competence, and relatedness, and how they relate to their job demands and resources provided. The findings of this study identified a lack of satisfaction with the relatedness tenet. Future studies could examine the role relatedness plays in SDT, why it is needed more in organizations, why it is lacking in organizations, and how it can be cultivated.

Additionally, future research could expand on this study with regards to demographics. This study included multicultural participants, so future research could explore how cultural background influences the interpretation and perception of pain. The study also included a wide age gap of 26–60, so future research could investigate using a narrower gap. This study also included only females, so future research could include males to include further understanding of gender, pain perception, productivity, and motivation.

Finally, future research could be of a quantitative nature to include a larger participant pool and deepen the knowledge of those with scoliosis pain. This qualitative study included lots of iterations to ensure that the thoughts shared by the participant were adequately captured and communicated. This was a timely endeavor. Quantitative research would have been faster and able to capture a vast amount of information.

Implications

Positive social change is integral to the growth and development of a society. The findings of this study have several implications for positive social change at the individual, organizational, and societal levels. The implications for positive social change include the potential for organizational leaders to implement policy changes that raise ergonomic awareness, amplify employees' voices with scoliosis pain, and inspire systematic reform to further enhance accommodation support and workplace well-being. These implications include awareness, advocacy, education, and systematic reform.

A summary of the findings with a link to the full study will be shared on my social media platforms, such as LinkedIn, WeChat, Facebook, Instagram, and WhatsApp. Collectively, I have over 4,000 followers from all over the world. These followers will also share on their social media, thereby reaching others. Additionally, it will be available on ProQuest. This will bring awareness to the topic and will provide those diagnosed with scoliosis and experiencing pain with representation. It acknowledges their physical and emotional pain and their journey of navigating their diagnosis.

The findings will also raise awareness of ergonomic concerns and the impact on employees' motivation and productivity. The participants' stories are compelling,

authentic, and eye-opening. Organizations should feel the need to implement new systems and policy changes that will benefit both the employee and the company. It underscores the importance of inclusivity, support, and accommodations.

Finally, the implications on society are public awareness initiatives on stereotypes and promoting understanding of scoliosis pain. Awareness and advocacy are two benefits of technological innovation which has the potential to shape change. Additionally, systematic reform in the labor force, where a diagnosis though different should not result in discrimination but should promote diversity. These changes can lead to integration through empowerment and education.

Conclusion

The purpose of this qualitative IPA was to explore the lived experience of female employees in China with scoliosis pain and its impact on their motivation and productivity. This study also used the self-determination theory and the job demands-resources model to provide further scope and depth. In this chapter, I discussed the interpretation of the study's findings, the limitations of the study, recommendations for organizations and future research, and finally, implications for positive social change.

The findings showed that there is a relationship between scoliosis pain and productivity, which can be negative or positive. These confirmed assumptions made in chapter one that pain alters productivity at work. The participants' responses indicated that their pain causes them to work faster, which is a positive, and might also cause them to work slower, which is a negative. Their level of productivity was dependent on the

severity of their pain daily. This relationship is mediated by an individual's self-efficacy and emotional regulation.

The findings also highlighted that motivation is impacted by need satisfaction and emotions. This reaffirms Ryan and Deci's (2000a) self-determination theory of humans innate psychological needs. If autonomy, competence, and relatedness needs are met, then individuals are satisfied and thereby motivated. The participants' responses revealed that while their autonomy and competence needs were met, relatedness was not. Drawing on the JDR model, participants expressed that their job demands were higher than the resources provided. Demouriti et al. (2001) posited that high job demands lead to burnout, whereas high job resources lead to engagement and motivation.

Finally, individuals' desire for ergonomic and relational support suggests gradual changes in how employees perceive job resources and how they buffer demands. While job resources such as salary, bonuses, and other monetary rewards are beneficial, there is a deep need for trust, understanding, and belonging. This study reveals the integration of these benefits is necessary for a satisfied and motivated employee. Both SDT and JDR act as mediators for each other, where need satisfaction is an outcome of job resources and job demands instill agency and motivation or cause disengagement and demotivation.

As a qualitative researcher, I strive to go where the data leads. This data led to raw emotions, authenticity, pain, and perseverance in a cathartic paradox. The participants were vulnerable yet brave. They desired a change in their circumstances, yet were accepting. They hoped that their voice and my words would inspire and ignite action. And I echo their sentiments.

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Appendix A: Participant Flyer

A flyer for a study. It features a large QR code on the left side, which is framed by a white, torn-edge effect. The background is dark blue with yellow accents. The text is in white and yellow. The QR code is intended for interested participants to scan and send an email indicating interest. The flyer includes a title 'JOIN MY STUDY', a description of the study's focus on females with scoliosis and back pain, a list of participant requirements (ages 22-60, employed in China, living in China), and a list of exclusions (back pain due to factors other than scoliosis).

JOIN MY STUDY

I am looking for females who have scoliosis, experience pain, and sit for at least 4 hours daily to discuss their motivation and productivity at work.

Participants must be:

- between the ages of 22-60
- employed or have been employed in China
- living in China

Excluded:

- Females experiencing back pain due to factors other than scoliosis

Interested participants can scan the QR code to send an email indicating interest.

Appendix B: Interview Protocol

Hello (participant name), I'm Shauna-Kay. How are you?

Thank you so much for agreeing to participate in this study for my dissertation. Before we begin, I'd like to remind you that if you would like to stop this interview at any time, please let me know. Additionally, please let me know if any questions make you feel uncomfortable or if you'd rather not answer so we can skip it, or I can rephrase. No pressure: this is just you sharing your story.

So today, we'll be talking about your experience with scoliosis pain and your experiences at work in terms of your motivation and productivity. I chose this topic to study because I, too, was diagnosed with scoliosis, so I understand and empathize with what you're feeling.

Shall we get started?

Great! Let's begin!

1. How are you feeling now in terms of being in pain?
2. How did you first come to know that you had scoliosis?

Follow up: How did it make you feel?

3. Let's talk about work for a bit. What do you do exactly?
4. Describe your best day at work. How does it look? What do you do?

Probe: Feel free to share as much as you would like.

5. Tell me how you experience pain at work.

6. How does your pain at work make you feel towards your work and organization?

Probe: Tell me more about it.

7. What do you do with those feelings when you experience them at work?

8. How does your pain influence your relationships at work?

Probe: How do your colleagues react to your emotions at work if and/or when you're in pain?

9. How would you describe your ability to do your job when you're in pain?

10. What would help you feel better about work when you are in pain?

11. Tell me about any support you receive at work when experiencing your scoliosis pain.

12. What can your organization or colleagues do to better support you?

13. How do you feel when you get home from work in the evenings?

14. Is there anything else you would like to share with me? If yes, please go ahead.

Recommendations

Before we end, would you like to share anything else with me about your workplace and your experiences there? If yes, please go ahead. Thank you so much (participant's name) for this conversation. You have been a tremendous help in shedding light on this topic and an integral part of this study. Do you have any questions for me before we go? You can also share any questions or concerns that you might have with me via email.