

Exploring The Impact of Mindfulness on Employee Work Engagement: The Mediating Role of The Emotional Strength and The Moderating Role of Work –Life Balance

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The present research intends to investigate the impact of mindfulness on the work engagement of healthcare professionals of Islamabad and Rawalpindi, Pakistan, as the healthcare sector is an integrated part of the economy and responsible for public service. In the high stress setting of Pakistan's healthcare sector, employee work engagement is critical for quality patient care, yet it remains a major challenge. This research paper explores the impact of mindfulness on work engagement among healthcare professionals, with a focus on the mediating role of emotional strength and the moderating influence of work-life balance. Thus, the present study examines how workplace mindfulness influences emotional strength and employee engagement and inspects whether emotional stability mediates the relationship between mindfulness and work engagement. Moreover, the researcher also looks into the moderating effects of work-life balance on the relationship between emotional strength and work engagement. A causal study was conducted to accomplish the research goals. A structured questionnaire collected the primary data from 207 healthcare professionals. SPSS and SmartPLS software were used to conduct descriptive analysis and hypothesis testing. The findings showed that mindfulness positively influences workers' emotional strength. Additionally, high levels of emotional strength positively influence employee engagement. The findings also confirmed the mediating effect of emotional stability on the relationship between mindfulness and employee engagement. Finally, the study found an insignificant moderating impact of work-life balance on the relationship between emotional strength and employee engagement. The research support SDG3 and SDG8 of UN's sustainability goals.

1. Introduction

In today's fast-paced and high-stress healthcare environment, maintaining employee work engagement is a critical challenge especially in countries like Pakistan, where doctors and nurses face overwhelming workloads, resource constraints, and emotional exhaustion. The demanding nature of their profession often leads to burnout, reduced job satisfaction, and diminished patient care quality. In such a context, mindfulness a mental state of mindfulness achieved by focusing on the present moment has emerged as a potential psychological resource to enhance work engagement by fostering emotional resilience and mitigating stress. This study aims to bridge this gap by examining how mindfulness influences work engagement among Pakistani healthcare professionals, with emotional strength as a mediator and work-life balance as a moderator. Mindfulness, defined as present-moment awareness and nonjudgmental attention, significantly enhances emotional intelligence (EI), which involves perceiving, understanding, and managing emotions. Research shows that mindfulness improves emotional balance, reduces exhaustion, and fosters competencies like emotion recognition and regulation, making it valuable in high-stress professions (Jiménez-Picón et al., 2021; Xie et al., 2020). Mindfulness enhances both ability EI (cognitive skills) and trait EI (self-perceived capacities) by fostering self-awareness, which improves emotional regulation and interpersonal interactions (Liu et al., 2020). Given the critical role of doctors and nurses in public health, understanding these dynamics can inform organizational interventions that promote psychological well-being, sustain engagement, and ultimately improve healthcare delivery. By integrating mindfulness training, emotional resilience programs, and work-life balance policies, healthcare institutions in Pakistan can cultivate a more motivated and mentally resilient workforce benefiting both employees and patients. Work-related stress has become a key feature of physicians' and paramedics' professional lives (Loria, Di Donna, & Zhang, 2022; Qian et al., 2022).

The current study also examines the function of emotional strength as a mediator and work-life balance as a moderator in the association between mindfulness and job engagement. Very little work examining the relationship between mindfulness and engagement has appeared in the past few years. However, little is known about the aspects of the mechanisms that may have interacted with both personal benefits (such as emotional strength) awareness and organizational benefits (such as human resource outcomes). It is presumed that a rise in positive feelings can help reduce stress and increase work engagement. However, it is unclear how pleasant emotions resulting from the psychological flourishing of employees affect job engagement and how some personal traits can moderate this association. Thus, the present study explores how workplace mindfulness promotes positive feelings (like emotional strength) among employees to achieve higher work engagement. mindfulness interventions, especially when paired with EI training, reduce anxiety, improve emotional regulation, and promote resilience, emphasizing their value for academic and workplace environments (Sturgill et al., 2021; Sharma & Gupta, 2021).

Moreover, the researcher also looks into the moderating effects of work-life balance on the relationship between emotional strength and work engagement Understanding the elements

influencing employees' engagement at work is essential for fully realizing a workforce's potential. The current study proposes that mindfulness is such a motivating element. Various viewpoints on how mindfulness affects job engagement are presented: Potential direct and indirect impacts are examined. High positive affect and improved ability to recover from negative and negative affective experiences are also components of effective affect management. It is crucial to look at these potential side effects of mindfulness to have a fuller knowledge of how it affects work engagement. In other words, to identify the mediators of the relationship between mindfulness and engagement. Because a large portion of a worker's life is spent at work, the workplace is an ideal setting for a public health intervention. Finding techniques to help employees focus is advantageous to both organizations and workers. One potential option for reducing psychological discomfort and promoting pleasant emotions in the workplace is implementing mindfulness training. Mindfulness is "the consciousness that develops from paying attention in a certain way: on purpose, in the present moment, and nonjudgmentally. This study, conducted in Islamabad and Rawalpindi Pakistan, looked at the influence of mindfulness practice on healthcare professionals and the impact of mindfulness on their individual and employment outcomes. Hence, the study's expected findings will light the importance of mindfulness-based training for the workers' well-being and the overall organizational performance through positive employee outcomes. Healthcare workers in Pakistan often face extreme workloads, understaffing, and lack of institutional support for work-life balance.

While work-life balance is studied in corporate sectors, its moderating role between mindfulness and engagement in Pakistani hospitals remains unexplored. Mindful employees reframe challenges as manageable (Reb et al., 2020). Similarly, Hussain et al. (2024) find that while some economies effectively manage health-oriented outputs, such as quality of life and mortality rates, others demonstrate strong economic performance. Enhanced empathy reduces isolation, increasing commitment (Hyland et al., 2020). there is a lack of integration between mindfulness, EI, and broader organizational outcomes such as productivity, retention, and job satisfaction, leaving untapped potential for designing interventions that benefit both employees and organizations (George et al., 2022). This research paper contributes to sustainable organizational development by enhancing employee well-being and productivity, directly supporting SDG 8 (decent work and economic growth) and SDG3 (good health and well-being). Mindfulness and emotional strength can reduce workplace stress, enhancing employee well-being. The present study seeks to explore the relationship between mindfulness, emotional strength, work-life balance, and work engagement among healthcare professionals in Pakistan.

2. Literature Review

The study begins with a thorough analysis of the literature focusing on the influences of mindfulness on employees' emotional strength and work engagement. The results of literature reviews were used to create more precise models and hypotheses. The literature on the study subjects is compiled in the present chapter. This paper begins with a glossary of variables of interest, moves on to the impact of mindfulness on emotional strength and work engagement, the

impact of expressive power on work engagement, and finally, the moderating role of work-life balance.

2.1 Relationship between Mindfulness and Work Engagement

According to the conservation of resources (CORs) concept, accumulating original resources will deliver new resources to individuals. Still, the scarcity of resources would lead to further resource scarcity in the future (Hobfoll, 2001). People with a bigger resource endowment will find it easier to get resource advantages. On the other hand, people with fewer resources are more vulnerable to resource losses. According to COR theory, employee mindfulness, as a distinctive intrinsic attribute of an individual, adds to the powerful positive resource of work engagement. Attention is essential to mindfulness (Good et al., 2016). In other words, on days when more resources are available, employees are more energized, eager, and invested in their work. Mindfulness enhances work engagement by improving focus, emotional regulation, and resilience. Mindfulness enhances both ability EI (cognitive skills) and trait EI (self-perceived capacities) by fostering self-awareness, which improves emotional regulation and interpersonal interactions (Liu et al., 2020).

Employees who practice mindfulness report higher levels of vigor, dedication, and absorption in their work (Schaufeli, 2021). Mindfulness buffers against burnout and stress, leading to sustained engagement (Hülshager et al., 2020). A meta-analysis by Lomas et al. (2022) found that mindfulness interventions in workplaces significantly improve engagement by reducing emotional exhaustion. Employees who can maintain active monitoring and commitment to current internal and external stimuli in their daily employment can retain a higher awareness and reactivity to their personal life and external conditions. Moreover, EI contributes to psychological capital (PsyCap) and perceived organizational support (POS), enabling employees to manage emotions, sustain motivation, and foster productivity (George et al., 2022). Workers with strong mindfulness, on the one hand, are more likely to maintain a beginner's mind, focus their energies on present tasks, regard each instant as distinct, and, as a result, feel more vital. The positive effect of mindfulness on engagement is stronger in organizations that promote psychological safety and supportive leadership (Kiburz et al., 2023). Iqbal et al. (2025) emphasizes the necessity for policymakers to adopt a multi-strategy approach that integrates green finance, technological innovation, low-carbon energy, and supportive government programs. Additionally, the participation of women in economic activities has been linked to increased foreign direct investment (FDI), as empirical evidence suggests that industries with a higher concentration of female labor attract greater FDI (Shaheen et al., 2024).

Mindfulness fosters intrinsic motivation (a key component of SDT), which in turn enhances work engagement (Schultz et al., 2024). Mindfulness improves individuals' consciousness and regulation, allowing them to recover from stress as rapidly as feasible. Individual mindfulness is beneficial for employees according to CORs theory. Additionally, they discovered that genuine functioning mediates the link between mindfulness and job engagement. Thus, theoretical and

preliminary empirical evidence suggests that mindfulness and Employee work engagement may be positively correlated.

As a result, the following assumption is made:

H1: Mindfulness has a significant positive impact on employee work engagement.

2.2 Relationship between Mindfulness and Emotional Strength

Research has shown that mindfulness can be linked to feelings of engagement (vigor, dedication, absorption) in one's daily work (Coo & Salanova, 2017). However, only one of these research focuses on group differences in emotions post-task, which is significant in determining if mindfulness enhances the ability to recover from an emotionally stimulating experience swiftly. No studies showed treatment group changes in emotional strength trajectory (change in emotion ratings from during the task to the post-task rest period). These researches are restricted in that they do not investigate whether mindfulness training particularly increases strength from negative affect producing circumstances or whether mindfulness training changes power for activities other than the TSST. Despite the above, there hasn't been much research among health experts on the connection between emotional strength training and mindfulness. Ullah and Shaheen (2024) explore the relationship between sustainable finance and technological innovation by incorporating the governance index and other economic indicators. Their study assesses the impact of these factors on sustainable development, particularly in reducing greenhouse gas emissions. Offering interventions, programs, or mindfulness training to healthcare professionals to promote and develop their emotional strength would be convenient because professionals who demonstrate a combination of technical skills and high emotional stability can provide more humanized healthcare. The purpose of this study is to summarize the most recent research on the connection between emotional resilience in healthcare professionals and mindfulness (Cox, 2018).

H2: There is a significant positive impact of Mindfulness on emotional strength.

2.3 Relationship between Emotional Strength and Work Engagement

Research suggests that mindfulness enhances emotional regulation, self-awareness, and interpersonal skills, which are core components of EI. These enhanced emotional competencies enable individuals to manage stress effectively and maintain focus, which are essential for fostering work engagement (Jiménez-Picón et al., 2021; Liu et al., 2020). For example, in high-stress professions like healthcare, EI has been shown to mediate the impact of mindfulness on burnout, reducing emotional exhaustion and promoting professional efficacy, ultimately leading to improved engagement (Xie et al., 2020). As a result, the emotional strength concept has received significant focus in the job and home domains of workers (Mérida-López, Bakker, & Extremera, 2019). Research by Luthans et al. (2024) highlights that psychological capital (PsyCap), which includes resilience, optimism, and self-efficacy, strongly correlates with sustained engagement. Emotional intelligence (EI), the ability to perceive, understand, and manage emotions, significantly predicts work engagement, characterized by vigor, dedication, and absorption.

EI enhances emotional regulation, resilience, and positive interpersonal interactions, helping individuals manage workplace challenges while maintaining focus and motivation (Barreiro & Treglown, 2020; Alamer & Alrabai, 2024). Mahmood et al. (2024) employ regression analysis to examine the relationship between dividend yield and air pollution, seeking to identify correlations between these variables and assess air pollution's impact on dividend yield. Studies show that EI fosters engagement across various contexts, such as healthcare, where it improves emotional regulation and wellbeing, and academia, where it supports career adaptability and focus (Gao et al., 2024; Merino-Tejedor et al., 2018). The DFT theory also focuses on the role of personal resources (such as self-efficacy, optimism, and emotional competencies) as individual predictors of work engagement or as moderators in the link between job requirements and health outcomes (Granziera, Collie, & Martin, 2021). There are, however, theoretical and empirical grounds to believe that emotional strength may mitigate the impacts of job engagement on employee well-being. Given the importance of emotional strength in promoting work-related objectives, it is feasible that the availability of specific personal resources, such as emotional strength, may influence the relationship between work engagement and workers' life and job perspectives (Côté, 2014). As a result, medical professionals who report low levels of emotional strength are likely to report poor levels of job engagement. As a result, we hypothesized:

H3: Emotional Strength has a significant positive impact on Work Engagement.

2.4 Mediating Role of Emotional Strength

Individuals try to avoid losses or develop new resources, according to CORs theory (Halbesleben, Neveu, Paustian-Underdahl, & Westman, 2014). Employees that are aware of their environment may be able to prevent future resource loss. They can also exert control over the unpleasant emotions brought on by stress. In contrast to cognition, all conscience behaviours need inhibition, leading to restricted resources (Dierckx et al., 2021). Work engagement has developed as a major feature of IO psychology. It is described as "a pleasant, rewarding, job-related state of mind marked by energy, devotion, and absorption. DFT Theory is also beneficial in forecasting an individual's emotional capabilities concerning their (job) environment. It describes three types of dynamic capabilities: cognitive (about an employee's skills and appraisal of what is occurring in a domain), relational (emotions about individuals and their environment that evolve), and motivational (emotions convention on the status of somebody's objectives). This theory posits that an individual's motivation for a purpose or interest in a position (e.g., work engagement) is influenced by the environment, cognitive evaluation of the environment, and emotions. According to this hypothesis, individuals with emotional control, self-motivation, and emotional regulation have better levels of involvement (Barreiro & Treglown, 2020).

Workers who are heavily engaged devote a huge amount of energy and focus to their jobs, which improves their well-being and performance. The degree of emotional strength represents a person's ability to remove negative circumstances while boosting positive ones. Reading books, learning new skills, and practicing are all activities that might offer employees new resources. Workers with strong emotional strength are more likely to relax and acquire self-efficacy, which

gives them greater stamina for work-related tasks and causes them to expend more effort. Furthermore, Tariq et al. (2024) investigate the social and behavioral factors influencing the adoption and usage of digital banking apps among Pakistani citizens during the COVID-19 pandemic. Norin et al. (2024) analyze the effects of advertising on children's attitudes, behaviors, and lifestyles. In response to the growing threat of global warming, scholars and policymakers have been paying closer attention to the relationship between economic growth and environmental protection (Mehroush et al., 2024).

Employees with low emotional strength lack the resources to put in a lot of effort, cope with problems, or focus on their jobs. The previous study has initiated that emotional stability has an optimistic impact on work engagement (Zhao et al., 2021). We hypothesize that emotional strength level is a mediator in the association between individual mindfulness and engagement because it assists employees in improving their emotional strength, which is a crucial predictor of job engagement. By examining the part that emotional resilience plays in the relationship between mindfulness and job engagement, the current study seeks to build on these findings. Emotional resilience is proposed to mediate the relationship between mindfulness and work engagement in the context of the relationships between mindfulness, emotional resilience, and work engagement, as well as the JD-R model of work engagement. More precisely, it is anticipated that employees who report high levels of mindfulness would have greater daily job engagement than less mindful employees, who tend to have higher levels of emotional resilience.

H4: Emotional Strength mediates the relationship between Mindfulness and Work Engagement.

2.5 Moderating Role of Work-Life Balance between Emotional Strength and Work Engagement

Expanding on the DFT theory, the researchers suggested that personal views, such as misgivings about the length of time spent at work, might have an impact on levels of job-related outcomes. A balance of work and family obligations leads to greater happiness, particularly when working hours are reduced and the work is enhanced (Barnett, 2006). In such a situation, skills and resources are bitterly developed, eventually improving an individual's capacity to solve work-family issues. De Carlo, Girardi, Falco, Dal Corso, and Di Sipio (2019) highlighted work-related issues that impact teachers' personal lives because they are increasingly subjected to external expectations and demands, like those of superintendents, family, and decision-makers. Akbar et al. (2024) conduct an interdisciplinary study examining how institutional quality, particularly corruption levels, influences the commercialization of innovation, as measured by high-tech product exports. Bilal and Shaheen (2024) highlight that technological innovation, and natural resources contribute to the adoption of energy efficiency strategies and environmental regulations, while green financial indicators significantly promote the transition to renewable energy sources. Additionally, Shaheen et al. (2025) address a gap in the literature by analyzing how demographic trends impact the environmental consequences of international trade.

Abbas et al. (2024) highlight that enhancing consumer engagement within brand communities is a key marketing objective for strengthening the brand-consumer relationship. Similarly, Kumar et al. (2024) investigate the relative influence of different genders of social media fitness influences (SMFIs) on consumers' decisions regarding supplement purchases. Additionally, Mansoor et al. (2018) examine the impact of different types of location-based advertisement messages on consumer attitudes. Finally, Shaheen et al. (2025) investigate sustainability considerations, including environmental, social, and governance (ESG) factors, as well as governmental policies and regulations that influence capital budgeting decisions. The modern workforce faces increasing demands, making work-life balance essential for maintaining emotional well-being and productivity. Emotional strength comprising resilience, emotional regulation, and stress management plays a pivotal role in sustaining work engagement (Bakker & Demerouti, 2017).

Working interferes with family has been found to be adversely related with global measures of work engagement in research done in both western and non-western contexts. The JD-R model (Bakker & Demerouti, 2017) posits that job demands (e.g., workload) deplete energy, while job resources (e.g., autonomy, support) enhance engagement. Emotional strength acts as a personal resource, buffering stress and improving WLB (Xanthopoulou et al., 2021). Work-life balance (WLB) is a critical factor influencing employee well-being, emotional strength (resilience, emotional intelligence), and work engagement. Recent research highlights the interplay between emotional resilience and engagement, suggesting that employees with higher emotional strength manage work-life conflicts better, leading to sustained engagement. Employees who scored low on attention and emotional strength had the greatest levels of corporate deviance. This notion is consistent with a recent study that found a work-life balance protective factor against human resource outcomes (Mérida-López et al., 2019).

Based on the earlier studies, this study proposes the following hypothesis:

H5: Work-life balance significantly moderates the relationship between emotional strength and work engagement.

3. Research Methodology

This section of the research focuses on the processes and tactics that must be adopted and followed in a specific order to complete the study's objectives properly. This chapter discusses the research purpose and rationale of the study, as well as its philosophical viewpoint, research methodology, and qualitative and quantitative research methodologies. The current study investigates mindfulness as a predictor of job engagement and assesses emotional strength and work-life balance as mediators and moderators, respectively. Data collecting, the present study's research scope, target population, sample, sample size, sampling technique, and data gathering procedure will be reviewed.

3.1 Research Approach

Explanatory research (trying to explain a subject by empirical analysis, related literature, and concepts). This type of exploratory research (describing a topic through scientific investigations, relevant literature, and theories) and descriptive study (evaluation of a picture). This type of research reveals several patterns and trends, revealing an explanatory technique. The explanatory strategy emphasizes logic, logical reasoning, and quantifiable aspects of human experience (Finchilescu & Cooper, 2018). In this strategy, the researcher predominantly uses post-positivist assertion for knowledge development, i.e., causal relationships and thinking, using variables and hypotheses and questions, using instruments, and the test of theories. The researcher uses strategically designed surveys to gather data and current tools that provide statistical test analysis. As a result, it is also known hypothesis testing research. In this kind of study, the statements from which the hypothesis is produced are the first statements studied. Once independent and dependent variables are present, an experimental design is created.

3.2 Type of Investigation

There are two kinds of investigations or studies: causal and correlational. Because the researcher attempts to explain certain factors associated with the declared research topic, the current study indicates a correlational inquiry.

3.3 Time Horizon

As per time horizons, there are two types of studies, i.e., Cross-Sectional Investigations (the data is collected at a single time over a specific period) and longitudinal studies (information is collected multiple times after specified time intervals). This current dissertation is cross-sectional because the first-hand raw data was gathered just once over a specific period in this analysis.

3.4 Research Strategy

The research scholar must develop a plan for the ongoing investigation. Pre-structured research questions must be addressed, and the technique part aids in providing the solution. This study combines explanatory and descriptive research methods because it is quantitative survey-based.

3.6 Population of the Study

According to Bell, Harley, and Bryman (2022), a population is the whole collection of all individuals, cases, or aspects about whom the researcher seeks to conclude. While it is critical to adequately define the people before making any sample size decisions. As is in this study conducted in the healthcare sector. Therefore, the present study's target demographic is personnel working in Pakistan's public and private sector hospitals.

3.5 Quantitative Study

3.5.1 Quantitative Approach

Researchers can also use quantitative measures to assess the degree of correlations or discrepancies between constructs (Munthe-Kaas, Glenton, Booth, Noyes, & Lewin, 2019).

This study used the quantitative research technique to identify answers to the research purpose and objectives. This analysis starts with a thorough literature review to examine current knowledge on the structures and connections under consideration, matching its perspective with positivism. The study's researcher performed the stages below: (a) produces hypotheses, (b) builds a framework, (c) accumulates data, (d) advances measuring tools, and (e) evaluates and publishes the outcomes.

3.6 Sampling

The sample for this study consists of personnel aged 20 to 60 currently employed (both permanently and on a contract basis) in various hospitals in Pakistan's public and private sectors." Considering the entire Because of the time and money necessary, using a population as a sample is challenging (Gravetter & Forzano, 2018).

Rule of Thumb for Sample Size Determination

$$n = I \times 10$$

$$n = 26 \times 10 = 260$$

where,

n= Sample Size

I = No. Of items in the questionnaire

In this study, 260 questionnaires were distributed to hospital employees (doctors and paramedics) following the rule. The researcher employed non-probability convenience sampling due to the participants' limited availability, inflexible schedules, privacy reservations, and time restraints. In contrast, convenience sampling obtains a sample of elements or individuals who are utmost willingly available.

3.7 Measurement Instruments

The researcher administered the questionnaire herself and visited hospitals and clinics in the public and private sectors in the twin towns of Islamabad and Rawalpindi, Pakistan, to collect data. After receiving approval, the researcher sought the relevant authority. At the same time, only those respondents who expressed a desire to participate in this study were chosen. Respondents were aware of the study's expectations, objectives, and goals. They were told that all information would be kept confidential and utilized solely for research purposes.

3.8 Data Collection

The collecting of data is an essential component of the investigation. This process collects all the necessary and critical information using proper tools and procedures. Data might be gathered from primary or secondary means or from together. It could be produced in either an ordinary or non-natural context, but whatever approach is used, ethical constraints must be considered (Creswell, 2014a). The data for this study was gathered ethically, and the respondents' identities were kept strictly secret. The respondents were appropriately and thoroughly informed about the theme, study context, and research purposes before the data assortment began with their permission. Because this is a quantitative study, data was gathered through a survey-based technique employing close-ended structured verified questionnaires. There are two forms of data collection: primary and secondary. As per, primary data is data that the researcher initially obtained for the specific study; consequently, it is also known as first-hand data. At the same time, data may be collected in various ways, including surveys, interviews, and questionnaires. The present investigation is a primary data analysis wherein the data on the variables of interest will use structured validated questionnaires from healthcare professionals and employees in the public and private sectors, i.e. (Mindfulness, Emotional Strength, Work-Life Balance, and Work Engagement). Additionally, the questionnaires were distributed to possible participants in various places using WhatsApp and cyberspace electronic Google form links, considering distance, expenditure, and time, among other factors, but to optimize scope. As a result, internet use assisted the data collection process.

4. Findings

The present chapter of this dissertation displays the findings from the obtained data, analyses the data, and discusses the outcomes of the data collected from respondents. This part arranges the data logically. The primary source of data for this study was information gathered through a survey or questionnaire. The data was adjusted for correctness and completeness before being analyzed with SPSS (Statistical Package for Social Sciences) version 25 software and SmartPLS. Data was coded and then entered, and suitable statistical tests were conducted, allowing the findings to be displayed in tables and charts. Data analysis was done in three sections: the first section contains the demographic breakdown of the respondents, the second section pertains to pretest examination, and the third section contains hypothesis testing. Data was analyzed with SPSS and SmartPLS to calculate the validity and reliability of the collected data. The internal reliability of the collected data was estimated through the Cronbach alpha measure. The discriminant validity of the collection was assessed with Fornell and Larcker and HTMT criteria. SmartPLS Structural Equation Model (SEM) was applied to test the proposed research hypotheses. Findings are displayed in a simple data format and explain the systematic applications of the methodology. Results cover variables understudied (i.e., mindfulness, emotional strength, workload, and employee engagement). The relation between the dependent variables and independent variables has been examined using SEM. This equation provides information about the research model as a whole and the relative contribution of each independent variable.

4.1 Response Rate

The researcher disbursed the 280 questionnaires to the medical professionals of Islamabad and Rawalpindi, Pakistan. Only 207 questionnaires out of 280 were collected back in the full form of responses. Thus, the response rate was 73%. COVID-19 outbreak and the busy schedule of medical professionals may be the reason for the low response rate.

Table No 1: Response Rate

Questionnaire delivered	Questionnaire received	Questionnaire Received in Complete Form	Response rate
280	213	207	73%

4.2 Respondents' Demographic Profile

The current part of the thesis displays the demographic profiles of the respondents. It provides the respondent's personal information along with their relative frequency and percentage (i.e., Gender, Age, and Qualification).

4.2.1 Gender of the Respondents

Table.4.2 provides the gender information of the respondents of this research study. According to the table, most of the respondents (59.6%) are males, who stand at 124. Other 39.4% respondents (39.4% of the sample size) are females. This result indicates the clear majority of male health professionals. The data was collected from the healthcare professionals of twin cities (Islamabad and Rawalpindi), Pakistan. Therefore, it can be said that the number of male employees is more than that of female employees in the Healthcare Institutes of Pakistan. The table below carries the gender demographic information of the respondents of the present research.

Table No 2: Gender of the Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	124	59.6	59.9	59.9
	Female	83	39.4	40.1	100.0
Total		207	100.0		

4.2.2 Age of the Respondents

Table 3 depicts the age demographic of the respondents. The statistics in the table show that a large part of the respondents falls in the age group of 20-25 years. The frequency of participants in this age bracket is 86 out of 210, which is 41.5% of the total participants. This age group is followed by the age bracket of 21-25 years, bearing a significant frequency of 42 participants out of 207 (20.3% of the total sample). Whereas 37 (17.9%) respondents fall in the age group of 41-45 years, only 18 (8.7%) participants are aged between 41 to 45 years. This age bracket is followed by the age group above 36-40 years; only 14 respondents (6.8%) fall in this

age group. At last, a very small part of the respondents, i.e. 10 (4.8 % of total), belongs to the age group Above 45 years. Most of the respondents were on a house jobs. Thus, it is clear that normally young doctor and paramedical staff complete their studies and start their jobs after or between 20-30 years old. Here the data was collected from healthcare professionals. In this sense, the collected information is elaborative enough.

Table No 3: Age of the Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-25	86	41.5	41.5	41.5
	26-30	42	20.3	20.3	61.8
	31-35	37	17.9	17.9	79.7
	36-40	14	6.8	6.8	86.5
	41-45	18	8.7	8.7	95.2
	Above 45	10	4.8	4.8	100.0
	Total	207	100.0	100.0	

4.2.3 Qualification of the Respondents

Table 4 represent the qualification demographic and shows that most of the participants are MBBS degree holders with a percentage of (42.0%) total on the frequency of 87. The MBBS+FCPS degree holders follow it with a rate of 19.8% and a frequency of 41. This group is followed by 33 participants (15.9% of the total participants) with a Diploma in Paramedical, and 20 participants (3.4% of the total) have an intermediate degree. At the same time, only 5 participants (9.7%) have other degrees. It is clear that most of the respondents have an MBBS degree because most of the respondents belong to the age group of 20-30 years; normally, at this age, people can complete their MBBS. Normally, having an MBBS degree in Pakistan is considered a sufficient condition (as for as qualification is concerned). It implies that young doctors showed keen interest in the research survey.

Table No 4: Qualification of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MBBS	87	42.0	42.0	42.0
	BMDS	26	12.6	12.6	54.6
	MBBS+FCPS	41	19.8	19.8	74.4
	Diploma in Paramedical	33	15.9	15.9	90.3
	Others	20	9.7	9.7	100.0
	Total	207	100.0	100.0	

4.3 Pre-Test Examination

4.3.1 Reliability

The Cronbach's alpha measurement estimated the reliability of all the study variables. Cronbach's alpha for the variable of Emotional Strength is 0.688, for Employee Engagement is 0.793, for Mindfulness is 0.885, and for work-life balance, it is 0.644. Cronbach's alpha value for all the variables is higher than the recommended value of 0.60 by J. D. Brown (2002). Hence, the importance of Cronbach's alpha measure indicates that all the variables' items are reliable, and further examination can be applied with confidence. At the same time, composite reliability (CR) for all variables is above the cut-off value of 0.60 and the average variance extracted for all variables is above the cut-off value of 0.50. Therefore, the assumption of reliability is supported.

Table No 5: Reliability

	Cronbach's alpha	Composite reliability	The average variance extracted (AVE)
Emotional Strength	0.688	0.802	0.511
Employee Engagement	0.793	0.842	0.577
Mindfulness	0.885	0.901	0.537
WL	0.644	0.814	0.687

4.3.2 Discriminant Validity

Fornell and Larcker criterion is applied to measure the discriminant validity of the collected data. According to Fornell and Larcker, if the Average Variance Explained (showed in the diagonal matrix) surpasses the squared correlation of latent variables, then the assumption of discriminant validity is supported. In table 4.7, all the diagonal values (square roots of AVEs) are greater than the values in the same row/column (correlation). Therefore, the assumption of discriminant validity is supported by Fornell and Larcker criterion.

Table No 6: Fornell and Larcker Discriminant Validity criterion

	Emotional Strength	Employee Engagement	Mindfulness	WL	WL x Emotional Strength
Emotional Strength	0.715				
Employee Engagement	0.521	0.759			
Mindfulness	0.277	0.193	0.733		
WL	-0.006	-0.147	-0.398	0.829	
WL x Emotional Strength	-0.026	0.115	0.059	-0.319	

To achieve discriminant validity, the HTMT values must be less than 0.90. This demonstrates the construct's discriminant nature. All correlation coefficients were less than 0.90

in the HTMT study (Gold et al., 2001). The discriminant validity of the concept was determined using the Heterotrait-Monotrait Ratio (HTMT).

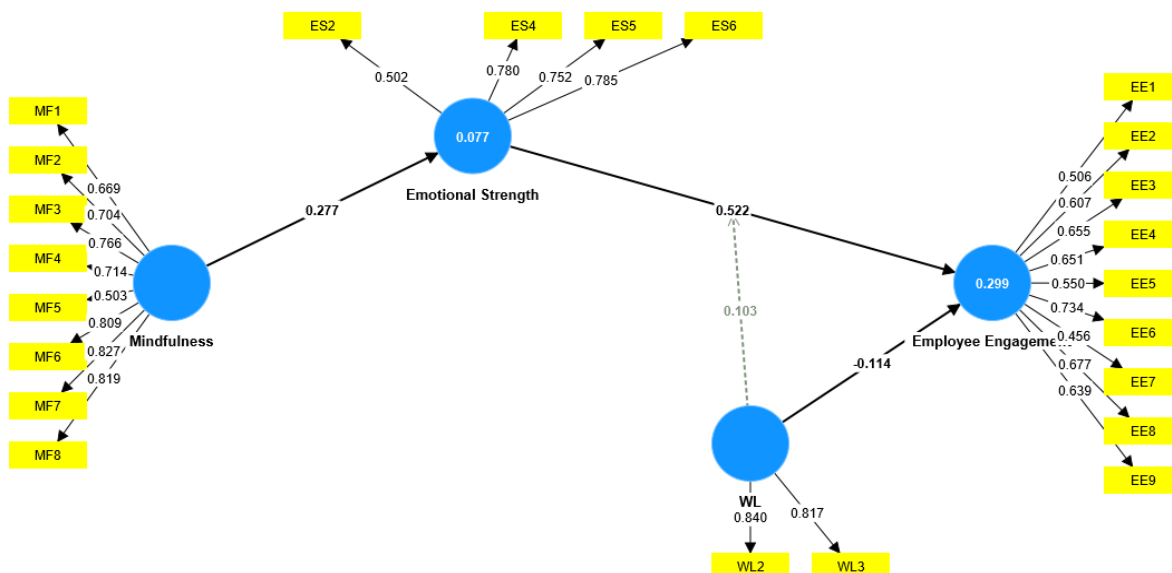
Table No 7: Heterotrait-Monotrait Ratio (HTMT)

	Emotional Strength	Employee Engagement	Mindfulness	WL	WL x Emotional Strength
Emotional Strength					
Employee Engagement	0.641				
Mindfulness	0.296	0.298			
WL	0.128	0.277	0.529		
WL x Emotional Strength	0.055	0.166	0.080	0.430	

4.3.4 Outer Loadings

In PLS-SEM, the first step is to assess the measurement model, also known as the outer model. It deals with component measurement, which shows the loading of the indicators or items and associating them with their respective constructs. The size of outer model confirms that all the survey items measured the construct as designed. Thus, it ensures convergent validity. The table below shows the outer loading of the constructs. In Partial Least Square (PLS), outer loading above seven is considered good, and above six is considered acceptable. In figure 4.1, the outer loading for all the items is above 0.6. Therefore, the assumption of convergent validity is established. To achieve discriminant validity of the construct, the values of outer loadings should be higher than other constructs' outer loadings values. It is mandatory to establish the assumption of discriminant validity (Rahi et al., 2018).

Figure No 1: Measurement Model



4.4 Structural Equation Modeling

Structural Equation Modeling (SEM) is a regression-based tool that measures the mutual relationship and casualty among the studied variables. In the present study, SEM is applied to test the proposed hypotheses. As per (Hox & Bechger, 1998), Regression analysis is a statistical technique used to examine or evaluate the connection between study variables. In general, the regression model is used to analyze the causal influence of one variable on another. An analysis is as under:

4.4.1 Direct Effects

The table below shows the direct effects of independent variables on the dependent variable.

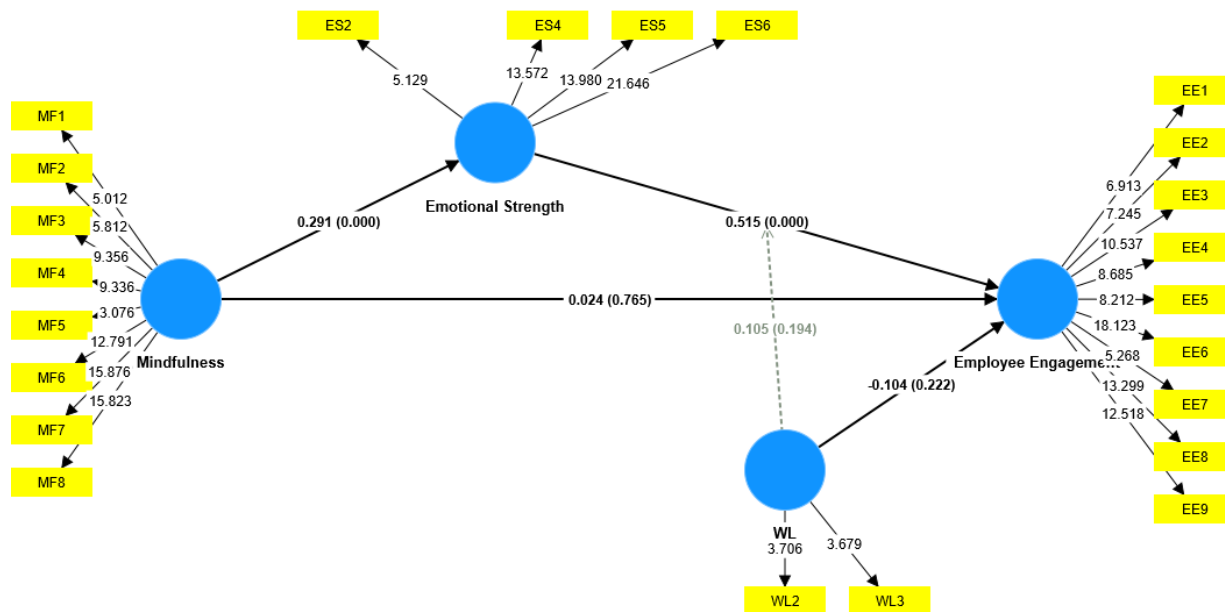
Table No 8: Direct Effects

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Emotional Strength -> Employee Engagement	0.515	0.521	0.063	8.181	0.000
Mindfulness -> Emotional Strength	0.291	0.309	0.056	5.218	0.000
Mindfulness -> Employee Engagement	0.024	0.034	0.082	0.298	0.765
WL -> Employee Engagement	-0.104	-0.1114	0.085	1.222	0.222
WL x Emotional Strength -> Employee Engagement	0.105	0.099	0.081	1.300	0.194

Table No 9: Indirect Effects

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Mindfulness -> Emotional Strength -> Employee Engagement	0.150	0.161	0.036	4.118	0.000

Figure No 1: Structural Equation Modeling



1st Hypothesis

The first hypothesis (H1) proposes testing mindfulness's impact on employee engagement. The hypothesis is developed as below.

H1: Mindfulness has a significant positive impact on work engagement

The hypothesis (H1) of the study deals with the impact of mindfulness on employee engagement. According to the statistic in table 4.8, the Beta value is 0.024, which shows a positive variance of 2.4% in employee engagement because of the unit change in mindfulness. This indicates there is a positive relationship between mindfulness and employee engagement. But the relationship is statistically insignificant at the P-value of 0.765 (above the maximum standard value of 0.05). Hence, the H1 is not supported as ($B = 0.024$, $S.D = 0.082$ $P = 0.765$). Results from the study indicate that the practice of mindfulness by the medical professionals does not directly increase employee engagement.

2nd Hypothesis

The second hypothesis (*H2*) proposes to test the impact of mindfulness on emotional strength of medical professionals of Pakistan. To test the proposed relationship, the following hypothesis is developed.

The hypothesis (H2) of the present dissertation deals with the impact of mindfulness on emotional strength in healthcare professionals of Islamabad and Rawalpindi, Pakistan. According to table 4.8, the Beta value for the accommodating style is 0.291, which shows a positive variance of 29.1% in emotional strength on account of a unit change in mindfulness. This finding shows

that there is a positive impact of mindfulness on emotional strength. The impact is also statistically significant at the P-value of 0.000 (below the maximum standard value of 0.05). Hence, the H2 is supported as ($B = 0.291$, $S.D = 0.056$ $P = 0.000$).

3rd Hypothesis

The third hypothesis (H3) proposes testing the relationship between healthcare professionals' emotional strength and their employee engagement. The hypothesis developed test this proposed relationship is stated below.

H3: Emotional Strength has a significant positive impact on Work Engagement.

The hypothesis (H3) of the present dissertation is about the impact of emotional strength (emotional Intelligence) on employee engagement. Table 4.8 shows that the Beta value for this impact is 0.515 which shows a positive variance of 51.5% in employee engagement because of the positive change in emotional strength. It indicates there is a positive impact of emotional strength on employee engagement. At the same time, P Value for this relationship is 0.000 (below the maximum recommended value of 0.05), indicating that this relationship is statistically significant (There is enough empirical evidence to support this relationship). Hence, the H3 is supported as ($B = 0.515$, $S.D = 0.063$ $P = 0.000$).

4th Hypothesis

The fourth hypothesis (H4) proposes to measure the mediating effect of emotional strength on the relationship between mindfulness and employee engagement. The following hypothesis statement is developed to test the proposed connection.

H4: Emotional Strength significantly mediates the relationship between Mindfulness and Work Engagement.

The hypothesis mentioned above (H4) of this dissertation deals with the mediating effect of emotional strength on the relationship between mindfulness and employee engagement. Table 4.8 represents the Beta value Of 0.150 for this specific indirect effect which is statistically significant at the P-value of 0.000 (under the maximum standard value of 0.05). This result indicates that enough empirical evidence supports that emotional strength significantly mediates the relationship between mindfulness and employee engagement. Therefore, the H4 is rejected to fail (supported) as ($B = 0.150$, $S.D = 0.036$ $P = 0.000$).

5th Hypothesis

The fifth hypothesis (H5) proposes to measure the moderating effect of work-life balance on the relationship between the emotional strength of healthcare professionals and their employee engagement. The following hypothesis statement is developed to test the proposed connection.

H5: Work-life balance significantly moderates the relationship between emotional strength and work engagement.

This dissertation's final hypothesis (H5) deals with the moderating effect of work-life balance on the relationship between emotional strength and employee engagement. Table 4.9 represents the Beta value of 0.105 for this specific indirect effect which is statistically insignificant at the P-value of 0.194 (above the maximum standard value of 0.05). This outcome indicates that no substantial empirical evidence supports that work-life balance insignificantly moderates the relationship between emotional strength and employee engagement. Hence, the H5 is reject as ($B = 0.105$, $S. D = 0.081$ $P = 0.194$).

4.5 Discussion

The primary objective of the present dissertation is to examine the impact of mindfulness and emotional strength on employee engagement of healthcare workers in Islamabad and Rawalpindi Pakistan. The present study also intends to determine the mediating effect of emotional strength (intellect) on the relationship between mindfulness and employee engagement and the moderating effect of work-life balance on the relationship between emotional strength and employee engagement. A quantitative survey is conducted to achieve research motives. The relationship of all the independent, dependent, mediating, and moderating variables (s) is measured with Structural Equation Model (SEM) using SmartPLS. The first research question of the present studies deals with the impact of mindfulness on employee engagement. Another possible reason is as follows: One may infer that those who are conscious very quickly down-regulate unpleasant affect, even before they are aware of it. However, suppose individuals consciously feel the negative effect. In that case, they could first find it difficult to deal with it or intentionally stay in this (disengaged) state for a long time before switching to good effects. The present study's first question deals with mindfulness impact on work engagement of employees. Mindfulness does not directly impact the work engagement of employees. The reason is that other factors which need to be taken in to consideration to enhance the engagement level of health care workers. For example, in the current study we see the mediation role of emotional strength on the relationship between mindfulness and work engagement. It proves true with mediating role of emotional strength increases the work engagement. This has also strengthened the notion that being mindful alone cannot be a factor that enhances or make an effect on work engagement of health care workers.

The present study's second research question deals with mindfulness's impact on emotional strength. Both of these studies also found a significant positive impact of mindfulness on emotional strength. These studies found that mindfulness swiftly enhances the ability to recover from an emotionally stimulating experience. This hypothesis is aligning with Liu et al 2020 that Mindfulness enhances both ability EI (cognitive skills) and trait EI (self-perceived capacities) by fostering self-awareness, which improves emotional regulation and interpersonal interactions (Liu et al., 2020).

The third research question of the present studies deals with the impact of emotional strength on employee engagement. According to the statistical analysis, the emotional strength of healthcare workers has a significant positive impact on their engagement with work. The findings agree with previous researchers in the relevant or same research areas. The interference can be

drawn by emotional strength that has the potential to develop positive employee outcomes. The researchers have commented that there are many conceptual and empirical reasons to suspect that emotional stability might minimize the effect of work engagement on individual well-being. Currently, mindfulness is a hot issue in many sociology domains. The findings confirm Hypothesis 2, showing that emotional intelligence (EI) significantly enhances work engagement. This aligns with previous research highlighting that EI promotes emotional regulation, resilience, and positive interpersonal interactions, which sustain vigor, dedication, and absorption at work (Barreiro & Treglown, 2020; Alamer & Alrabai, 2024). EI's role in engagement is evident across professions. For instance, higher EI scores among nurses correlate with better engagement by enhancing emotional regulation and wellbeing (Gao et al., 2024). Similarly, in academic contexts, EI fosters engagement through adaptability and emotional competence (Merino-Tejedor et al., 2018; Junça Silva & Almeida, 2023).

Moreover, EI supports psychological capital and interpersonal skills, contributing to sustained motivation and job satisfaction (George et al., 2022; Selvi & Aiswarya, 2023). Statistical analysis confirmed a strong direct effect of EI on engagement. These findings emphasize the importance of EI in fostering a resilient and engaged workforce, reinforcing the value of EI training in organizational development with the impact of the psychotherapeutic paradigm, topics such as satisfaction, perseverance, mental health and emotional strength, work, and organizational engagement rose to the top of the agenda in organizational psychology. The present research survey included 207 healthcare professionals working in the public and private sectors. The hypothesis test findings show that mindfulness among healthcare professionals enhances employee engagement. One of the goals of this study was to investigate the mediating influence of emotional strength on the link between mindfulness and work engagement. The study revealed that mindfulness had no direct impact on employee engagement. However, mindfulness promotes positive psychology (emotional intelligence/emotional strength) among professionals, enhancing employee engagement even more. The fourth research question of the present studies deals with the mediating effect of emotional strength on the relationship between mindfulness and employee engagement. The discussion on the last two research questions has remarkably implied the relevance of emotional strength in this case. However, statistical analysis has also verified the mediating effect of emotional strength. These findings are in line with the findings from (Johnson et al., 2017;) Merino-Tejedor et al., 2018; and Junça Silva & Almeida, 2023). Highly engaged workers commit a great deal of energy and concentration to their professions, enhancing their overall well-being and performance.

This study, based on the DFT theory, describes how emotional resilience, a mediator between mindfulness and work engagement, helps employees increase their job engagement. The findings indicate a beneficial indirect link between personal mindfulness, emotional stability, and job engagement. The results also demonstrate how important personal awareness is in aiding workers' stress management. The research showed that this process with work-life balance, even though several researchers have already looked into the moderating impact of emotional strength on employees' levels of job engagement. This finding offers a fresh viewpoint on how mindfulness

affects job engagement. But the present study concludes an insignificant moderating effect on work-life balance. This unclear relationship may result from the limited sample size and constrained research method. Work-life balance, which primarily controls an individual's ability to prioritize work and personal responsibilities such as family, friends, and well-being, has a significant impact on employee productivity and job satisfaction. Employees are more likely to give their all at work when there is a good balance between work and life, as this will ensure that their family is happy. Most studies have shown that happy households lead to harmonious workplaces that are pleasant places to be when there are no conflicts. The most intriguing assumption of this finding is that employees in developing countries like Pakistan also expect a high standard of living at work as a measure of their job satisfaction, which would help them perform better. Employees expect a collective adjustment in their work life that will have a more significant impact on their engagement and performance. This creates work life balance, career development, and reward opportunities exercise intermittently as if such considerations are incorporated together then effectiveness and efficiency of the Company will be significantly influenced favorably. As expected, emotional strength was a (partially) mediating factor in this connection (Hypothesis 2). These findings support past studies that looked at the link between mindfulness and emotional strength and add to prior research on the positive impacts of mindfulness in the workplace (e.g. Bakker & Demerouti, 2017 and George et al., 2022).

5. Conclusion

According to the findings, employees' mindfulness (and mindfulness-based interventions) is critical for acquiring and achieving organizational goals and objectives of developing a state-of-the-art health sector. Through employees' positive work attitudes, the healthcare sector of Pakistan can develop and retain this competitive advantage. In other words, if management is not educated about mindfulness intervention techniques, it will have a detrimental impact on organizational performance and employee outcomes. This paper highlights the significant role of mindfulness in enhancing work engagement. The findings suggest that mindfulness practices can strengthen emotional resilience, enabling healthcare professionals to manage stress and maintain focus in high-demand environments. Furthermore, the mediating role of emotional strength underscores the importance of psychological well-being in sustaining motivation and commitment among health care workers.

5.1 Recommendations

Healthcare workers have different lives than any other professional. This does not differ from the point of view of vast level of personal and professional accomplishment but from much stress. So, there should be seminars on mindfulness training and development of emotional strength for healthcare professionals. Emotionally strong employees perform better, so wellness programs should be conducted for healthcare professionals to improve their professional and personal growth. The need for more mindful and psychologically strong healthcare professionals has never been greater. These changes have also left the world of health care reeling as it tries to perform in a challenging environment (Krishnan et al., 2022).

Overall, the new study provides more evidence in favor of earlier studies' claims that Mindfulness mediations could offer practical solutions towards enhancing employee wellbeing. Moreover, the results suggest that equipping employees with mindfulness training may help them cope with organizational change by reducing resistance to change. This study has shown that there still remains a gap that needs to be addressed to define which people under which circumstances will be the most responsive to the training and which workplace outcomes will be the most affected. This expectation derives from the report by a number of individuals who reported a variety of improvements during the workplace mindfulness meditation. While some people will respond to some mindfulness training in certain situations, like any other form of treatment, it is not likely to be a cure-all. Organizations need to focus on developing programs that teach emotional intelligence and building resilience to improve engagement. The focus on fostering psychologically safe and supportive emotionally engaging leadership is a sure way of promoting longer term engagement.

5.2 Implications

The current dissertation adds to the research on mindfulness in the workplace by defining dimensions and broad mechanisms of mindfulness organization to evaluate its impacts on employee engagement in the Health Sector. This study is expected to discover the significance of mindfulness and workers' psychological well-being for positive work outcomes and organizational success. This paper offers a framework that corporations may use to entice positive work behavior out of their workers. The investigation reveals how emotional strength and mindfulness are positively correlated and how this relationship might affect employee engagement. Although mindfulness will continue to contribute to successful human resource outcomes.

5.2.1 Theoretical Perspective

Many academic researchers and organizational leaders dealing in the part of management and entrepreneurship are paying significant attention to enhancing employee outcomes (like work engagement) and searching for the factor that increases human resource and organizational outcomes. This dissertation is the first to evaluate the relationships between mindfulness and organizational performance in the Healthcare Sector of Islamabad and Rawalpindi Pakistan. The current study adds to the literature on both mindfulness and involvement. Both job engagement and mindfulness are conceived of as experiences that change over time for the same person. Daily evaluations of proposed partnerships are conducted. The current study does this by using a dynamic picture of workplace engagement. Additionally, it offers a closer, more in-depth look at emotion regulation, one of the key psychological mechanisms driving the positive impacts of mindfulness at work. In this way, the current study builds on earlier results about the importance of awareness and attention in engagement. It advances our knowledge of the immediate causes of everyday job involvement. It also demonstrates ways to encourage employee engagement at work, which might increase employee wellbeing and spur performance. The outcomes of this dissertation offer literature that will serve as a conceptual framework for future studies in this research area. The findings are also useful because they highlight recent trends and theoretical advancements in

mindfulness approaches, employee engagement and organizational emotional strength. This research is also useful because it explains to the scholars and students that emotional strength and mindfulness training is very crucial for healthcare workers to boost their work engagement

5.2.2 Practical Perspective

Approaches under the psychological well-being and mindfulness interventions; that influence the employee outcomes or organizational outcomes of the healthcare Sector' received little attention. The proposed results show that employee mindfulness is positively related to emotional strength, and ultimately, emotional strength is positively related to work engagement in Pakistan's healthcare professionals. The results of the study give empirical support for the research framework. Studying has relevance to daily life. First off, mindfulness has a beneficial impact on staff members' emotional fortitude. The antecedents of job engagement are the subject of increasing research studies. Our findings guide service providers, notably in the healthcare sector, on how to encourage workers' job performance successfully. Mindfulness is shown as a driver of emotional strength, and emotional strength is further revealed as an antecedent of work engagement. Second, mature mindfulness training programs should be included in organizational training and development to enhance employee mindfulness. This notion is because studies have shown that individual mindfulness may assist in restoring and increasing job engagement.

The two mindfulness training techniques that are now most in demand are mindfulness-based stress reduction and mindfulness-based cognitive therapy. These training techniques have a reasonably extended effective time. As a result, businesses may provide their employees with brief yet effective mindfulness training tailored to their specific needs. Employees may enhance their degree of mindfulness by taking part in official or informal training, which will help them intentionally nurture it so that they can recover mentally more rapidly. After receiving mindfulness training, the team may set apart time to reflect and meditate, improve their level of awareness, and assist people in promoting resource recovery. Employee engagement promotes the incidence of behaviors designed to influence the effective operation of the business and is a key indicator of employee well-being. The current study supports the notion that cultivating mindfulness may be another way to promote employee engagement, in addition to existing workplace interventions that focus on increasing employee engagement by creating personal job-specific resources. Workplace mindfulness-based therapies have previously been shown to improve perceived stress and sleep quality. Furthermore, mindfulness self-training has been shown to improve job satisfaction and minimize emotional weariness in employees. The practice of mindfulness meditation has also been shown to increase one's resources. Thus, workplace and personal intervention programs may be used to improve employee mindfulness and reap the rewards beyond only increased engagement. Because of this, it is possible to think of mindfulness-based therapies as better than those that concentrate on boosting people's engagement at work by creating personal and professional resources. This study also provides some contributions to the healthcare Sector of Islamabad and Rawalpindi, Pakistan, for implying mindfulness-based interventions in their organizations.

5.3 Limitations and Recommendations for Future Studies

The constraints of this research should be addressed in light of the results that research on mindfulness may be applied to the healthcare sector rather than other businesses and cultures and that it should be explored in the future based on necessity. Because the current study was confined to just hospitals in Islamabad and Rawalpindi, Pakistan, utilizing different samples in future studies on the same research problem may generate different results. The obtained data might be skewed, affecting the accuracy of these results. Future studies may need to use a different data gathering strategy. Finally, this analysis was carried out under severe time constraints: within 4 to 5 months, and the study was conducted exclusively in the twin cities area, data collecting from healthcare industry personnel is challenging due to their hectic schedules. Many other regions remained unexplored owing to limited resources, and as a part-time student, I occasionally encountered data collecting issues. The longitudinal method in a different period may offer a varied view of conflict management solutions in different situations and at other times. The study's primary shortcoming is that it focuses on sample size, which does not provide a full perspective of disputes owing to time constraints, and that research was conducted solely in twin cities (Islamabad and Rawalpindi). As a result, there is a need for a more thorough investigation that includes additional geographical regions in the sample. The current study used a quantitative methodology to achieve the research objectives; however, a future study may use a qualitative approach with interviews or focus group discussions on reaching concrete conclusions based on deeper insights.

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